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SV670-INT Series Servo Drive

Parameter Guide

Industrial Automation | Intelligent Elevator | New Energy Vehicle | Industrial Robot | Rail Transit

Data code PS00009762A00

Preface

Introduction

Thank you for purchasing the SV670-INT series servo drive developed by Inovance.

The product is a high-end servo drive designed based on global-leading standards and high-end application needs. It is featured with high speed, high precision, high performance, and tuning-free function. Compliant with CE, UL, KC, EAC, and UKCA certification requirements and top international quality standards, it is specially suitable for high-end applications.

Its power ranges from 0.05 kW to 7.5 kW. It supports Modbus, CANopen, CANlink and EtherCAT communication protocols and carries necessary communication interfaces to work with the host controller for implementing a networked operation of multiple servo drives. The servo drive supports adaptive stiffness level setting, inertia auto-tuning, and vibration suppression for easy use. The servo drive, together with a third party servo motor or an MS1 series high-response servo motor (with ultra-low, low or medium inertia) equipped with a 23-bit single-turn/multi-turn absolute encoder, serve to deliver a quiet and stable operation and accurate process control through the fully closed-loop function and internal process segment function.

In addition, it offers a 18-month warranty and comes with dynamic braking as standard and STO as an option. The drive aims to achieve quick and accurate position control, speed control, and torque control through high-performance solutions for automation equipment in such industries as electronic manufacturing, lithium batteries, manipulators, packaging, and machine tools.

Introduces the functions and faults of the drive, including function overview, adjustment, basic servo functions and fault handling.

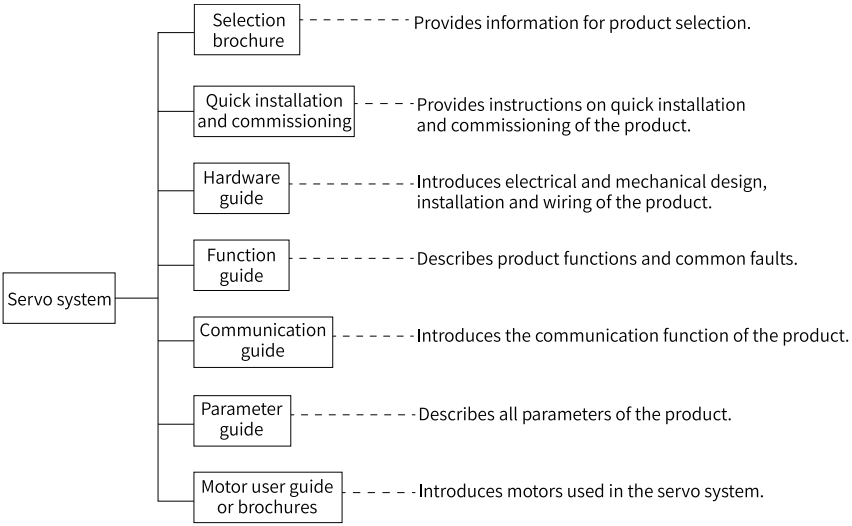
Abbreviation

The following abbreviations will be used herein to refer to the corresponding servo drives.

Abbreviation	Servo drive
[P]	SV670P*****-**-INT
[N]	SV670N*****-**-INT

More documents

The documents related to the drive are shown in the following figure and table.



No.	Name	Data Code	Description
①	SV670-INT series flagship servo drive	19120413	Provides instructions on product selection, including the list of supporting components, technical data on the drive, and the selection guide of cables.
②	SV670-INT Series Servo Drive Quick Installation and Commissioning	PS00009758	Describes the model number, installation, terminals and quick commissioning and operation of the drive.
③	SV670-INT Series Servo Drive Hardware Guide	PS00009739	Describes technical data, installation, terminals, required certificates and standards and solutions to common EMC problems of the drive.
④	SV670-INT Series Servo Drive Function Guide	PS00009763	Introduces the functions and faults of the drive, including function overview, adjustment, basic servo functions and fault handling.
⑤	SV670-INT Series Servo Drive Communication Guide	PS00009765	Introduces the communication of the drive, including configuration of Modbus, CANopen, CANlink and EtherCAT communication and application cases.
⑥	SV670-INT Series Servo Drive Parameter Guide	PS00009762	Introduces the parameters of the drive, including a parameter list and description of parameters.
⑦	MS1-R Series Servo Motor Selection Guide	PS00004605	Introduces the product information, general specifications, motor selection, cable selection, and required certificates and standards of the servo motor.
	MS1-R Series Servo Motor Installation Guide	PS00005407	Describes installation of the motor, including an installation flowchart, unpacking and transportation, mechanical installation, and electrical installation.

Revision History

Date	Version	Description
2024-05	A00	First release.

Access to the Guide

This guide is not delivered with the product. You can obtain the PDF version in the following way:

- Visit *www.inovance.com*, go to Support > Download, search by keyword, and then download the PDF file.
- Scan the QR code on the product with your mobile phone.
- Scan the QR code below to install the app, where you can search for and download manuals.

Warranty

Inovance provides warranty service within the warranty period (as specified in your order) for any fault or damage that is not caused by improper operation of the user. You will be charged for any repair work after the warranty period expires.

Within the warranty period,maintenance fee will be charged for the following damage:

- Damage caused by operations not following the instructions in the user guide
- Damage caused by fire, flood, or abnormal voltage
- Damage caused by unintended use of the product
- Damage caused by use beyond the specified scope of application of the product
- Damage or secondary damage caused by force majeure (natural disaster, earthquake, and lightning strike)

The maintenance fee is charged according to the latest Price List of Inovance. If otherwise agreed upon, the terms and conditions in the agreement shall prevail.

For details, see the Product Warranty Card.

Table of Contents

1 Parameter List [P]

The mapping relation between the parameter displayed on the keypad (in decimal) and the object dictionary operated by the host controller (in hexadecimal, "Index" and "Sub-index") is as follows.

Object dictionary index = 0x2000 + Parameter group number

Object dictionary sub-index = Hexadecimal offset within the parameter group + 1 For example:

Panel Display	Object dictionary operated by the host controller
H02.15	2002.10h

Note

The following section only describes the display and parameter settings on the keypad side (in decimal), which are different from those displayed in the software tool (in hexadecimal). Make necessary value conversions during use.

1.1 H00 Servo Motor Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H00.00	2000-01h	Motor SN	20000: Linear motor - pulse encoder 14202: Linear motor - Inovance 23-bit encoder 20001: DDR motor - pulse encoder 14201: DDR motor - Inovance communication 23-bit encoder 20002: Rotary motor - pulse encoder 14000: Rotary motor - Inovance communication 20-bit encoder 14101: Rotary motor - Inovance communication 23-bit encoder 14020: Rotary motor - Harmonic 20-bit encoder - 2.5M baud rate 14021: Rotary motor - Harmonic 17-bit encoder - 2.5M baud rate 14022: Rotary motor - Harmonic 17-bit encoder - 4M baud rate 14120: Rotary motor - Nikon 20-bit encoder - 2.5M baud rate 14121: Rotary motor - Nikon 17-bit encoder - 2.5M baud rate 14122: Rotary motor - Nikon 17-bit encoder - 4M baud rate 14130: Rotary motor - TAMAGAWA 17-bit encoder 14131: Rotary motor - TAMAGAWA 23-bit encoder	14101	-	At stop	" H00_en.00" on page 133
H00.02	2000-03h	Customized No.	0.00–4294967295.00	0.00	-	Unchangeable	" H00_en.02" on page 134
H00.04	2000-05h	Encoder version	0.0–6553.5	0.0	-	Unchangeable	" H00_en.04" on page 134
H00.05	2000-06h	Serial-type motor code	0–65535	0	-	Unchangeable	" H00_en.05" on page 134
H00.06	2000-07h	FPGA customized SN	0.00–655.35	0.00	-	Unchangeable	" H00_en.06" on page 134
H00.07	2000-08h	STO version	0.00–655.35	0.00	-	Unchangeable	" H00_en.07" on page 135
H00.08	2000-09h	Bus encoder type	0–65535	0	-	At stop	" H00_en.08" on page 135

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H00.40	2000-29h	Motor control type	0: General-purpose rotary motor (ROT) 1: Direct drive rotary motor (DDR) 2: Direct drive linear motor (DDL) 3: Voice coil motor (VOL)	2	-	Real-time	" H00_en.40" on page 135
H00.45	2000-2Eh	Encoder pitch 1	0.01[mm]/[deg]–655.35[mm]/[deg]	2.00	[mm]/[deg]	At stop	" H00_en.45" on page 136
H00.46	2000-2Fh	Encoder pitch 2	0.01[mm]/[deg]–655.35[mm]/[deg]	0.50	[mm]/[deg]	At stop	" H00_en.46" on page 136
H00.48	2000-31h	Linear motor pole pitch (N-S)	0.00 millimeters–655.35 millimeters	16.00	mm	At stop	" H00_en.48" on page 136
H00.49	2000-32h	Direct drive motor encoder resolution	0.000um/p–65.535um/p	1.000	um/p	At stop	" H00_en.49" on page 137
H00.55	2000-38h	Rated torque	0.00[N]/[N·m]–42949672.95[N]/[N·m]	2.00	[N]/[N·m]	At stop	" H00_en.55" on page 137
H00.57	2000-3Ah	Max. torque	0.00[N]/[N·m]–42949672.95[N]/[N·m]	7.00	[N]/[N·m]	At stop	" H00_en.57" on page 137
H00.59	2000-3Ch	Encoder counting direction	0: Forward 1: Reverse	0	-	At stop	" H00_en.59" on page 137

1.2 H01 Servo Drive Parameters

Parameter	Hex	Name	Value	Default	Unit	Change Mode	Page
H01.00	2001-01h	MCU software version	0.0–6553.5	0.0	-	Unchangeable	" H01_en.00" on page 138
H01.01	2001-02h	FPGA software version	0.0–6553.5	0.0	-	Unchangeable	" H01_en.01" on page 138
H01.02	2001-03h	Servo drive series No.	0–65535	0	-	Unchangeable	" H01_en.02" on page 138
H01.06	2001-07h	Board software version	0.0–6553.5	0.0	-	Unchangeable	" H01_en.06" on page 139

Parameter	Hex	Name	Value	Default	Unit	Change Mode	Page
H01.10	2001-0Bh	Drive series No.	2: S1R6 3: S2R8 5: S5R5 6: S7R6 7: S012 8: S018 9: S022 10: S027 10001: T3R5 10002: T5R4 10003: T8R4 10004: T012 10005: T017 10006: T021 10007: T026	3	-	At stop	*" H01_en.10" on page 139*
H01.11	2001-0Ch	DC-AC voltage class	0 V–65535 V	220	V	Unchangeable	*" H01_en.11" on page 139*
H01.12	2001-0Dh	Drive rated power	0.00 kW–10737418.24kW	0.40	kW	Unchangeable	*" H01_en.12" on page 140*
H01.14	2001-0Fh	Max. output power of the drive	0.00 kW–10737418.24kW	0.40	kW	Unchangeable	*" H01_en.14" on page 140*
H01.16	2001-11h	Rated output current of the drive	0.00 A–10737418.24 A	2.80	A	Unchangeable	*" H01_en.16" on page 140*
H01.18	2001-13h	Max. output current of the drive	0.00 A–10737418.24 A	10.10	A	Unchangeable	*" H01_en.18" on page 140*
H01.40	2001-29h	DC bus overvoltage protection threshold	0 V–2000 V	420	V	Real-time	*" H01_en.40" on page 141*
H01.75	2001-4Ch	Current loop amplification factor	0.00–655.35	1.00	-	Real-time	*" H01_en.75" on page 141*
H01.88	2001-59h	Junction temperature parameter version 1	0.0–6553.5	0.0	-	Unchangeable	*" H01_en.88" on page 141*
H01.89	2001-5Ah	Junction temperature parameter version 2	0–65535	0	-	Unchangeable	*" H01_en.89" on page 142*

1.3 H02 Basic Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.00	2002-01h	Control mode	0: Speed control mode 1: Position control mode 2: Torque control mode 3: Torque/Speed control mode 4: Speed/Position control mode 5: Torque/Position control mode 6: Torque/Speed/Position compound mode 7: Process segment 8: CANopen mode	1	-	At stop	" H02_en.00" on page 142
H02.01	2002-02h	Absolute system selection	0: Incremental mode 1: Absolute position linear mode 2: Absolute position rotation mode 3: Absolute position linear mode (without encoder overflow alarm) 4: Absolute position single-turn mode	0	-	At stop	" H02_en.01" on page 143
H02.02	2002-03h	Rotation direction selection	0: Counterclockwise (CCW) as forward direction 1: Clockwise (CW) as forward direction	0	-	At stop	" H02_en.02" on page 143
H02.03	2002-04h	Output pulse phase	0: Phase A leads phase B 1: Phase A lags behind phase B	0	-	At stop	" H02_en.03" on page 144
H02.05	2002-06h	Stop mode at S-ON OFF	-4: Stop based on ramp 2, keeping dynamic braking state -3: Stop at zero speed, keeping dynamic braking state -2: Stop based on ramp 1, keeping dynamic braking state -1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Stop based on ramp 1, keeping de-energized state 2: Dynamic braking stop, keeping de-energized state	0	-	Real-time	" H02_en.05" on page 145

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.06	2002-07h	Stop mode at No. 2 fault	-5: Stop at zero speed, keeping dynamic braking state -4: Stop at emergency stop torque, keeping dynamic braking state -3: Stop based on ramp 2, keeping dynamic braking state -2: Stop based on ramp 1, keeping dynamic braking state -1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Stop based on ramp 1, keeping de-energized state 2: Stop based on ramp 2, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 4: Dynamic braking stop, keeping de-energized state	2	-	Real-time	" H02_en.06" on page 145
H02.07	2002-08h	Stop mode at overtravel	0: Coast to stop, keeping de-energized state 1: Stop at zero speed, keeping position lock state 2: Stop at zero speed, keeping de-energized state 3: Stop based on ramp 2, keeping de-energized state 4: Stop based on ramp 2, keeping position lock state 5: Dynamic braking stop, keeping de-energized state 6: Dynamic braking stop, keeping dynamic braking state 7: Not responding to overtravel	1	-	At stop	" H02_en.07" on page 146
H02.08	2002-09h	Stop mode at No.1 fault	0: Coast to stop, keeping de-energized state 1: Dynamic braking stop, keeping de-energized state 2: Dynamic braking stop, keeping dynamic braking state	2	-	At stop	" H02_en.08" on page 147
H02.09	2002-0Ah	Delay from brake output ON to command received	0 ms–500 ms	250	ms	Real-time	" H02_en.09" on page 147

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.10	2002-0Bh	Delay from brake output OFF to motor de-energized	50 ms–1000 ms	150	ms	Real-time	*" H02_en.10" on page 147*
H02.11	2002-0Ch	Motor speed threshold at brake output OFF in rotation state	20 rpm to 3000 rpm	30	RPM	Real-time	*" H02_en.11" on page 148*
H02.12	2002-0Dh	Delay from S-ON OFF to brake output OFF in rotation state	1 ms–65535 ms	500	ms	Real-time	*" H02_en.12" on page 148*
H02.15	2002-10h	LED Alarm Display	0: Output alarm information immediately 1: Not output alarm information	0	-	Real-time	*" H02_en.15" on page 148*
H02.16	2002-11h	Brake enable switch	0: OFF 1: ON	0	-	Real-time	*" H02_en.16" on page 148*
H02.17	2002-12h	Stop mode upon main circuit power failure	0: Keep current action 1: Stop upon fault as defined by H02.06 2: Stop at S-ON OFF as defined by H02.05 3: Stop quickly as defined by H02.18	2	-	Real-time	*" H02_en.17" on page 149*
H02.18	2002-13h	Quick stop mode	0: Coast to stop, keeping de-energized state 1: Stop by ramp 1, keeping de-energized state 2: Stop by ramp 2, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 5: Stop by ramp 1, keeping position lock state 6: Stop by ramp 2, keeping position lock state 7: Stop at emergency stop torque, keeping position lock state	2	-	Real-time	*" H02_en.18" on page 149*
H02.21	2002-16h	Permissible minimum resistance of braking resistor	1Ω to 1000Ω	40	Ω	Unchangeable	*" H02_en.21" on page 150*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.22	2002-17h	Power of built-in braking resistor	0W–65535W	50	W	Unchangeable	" H02_en.22" on page 150
H02.23	2002-18h	Resistance of built-in braking resistor	0Ω to 65535Ω	50	Ω	Unchangeable	" H02_en.23" on page 150
H02.24	2002-19h	Resistor heat dissipation coefficient	10% to 100%	30	%	Real-time	" H02_en.24" on page 151
H02.25	2002-1Ah	Braking resistor type	0: Built-in 1: External, natural cooling 2: External, forced air cooling 3: No resistor needed	3	-	Real-time	" H02_en.25" on page 151
H02.26	2002-1Bh	Power of external braking resistor	1 W–65535W	40	W	Real-time	" H02_en.26" on page 152
H02.27	2002-1Ch	Resistance of external braking resistor	15Ω to 1000Ω	50	Ω	Real-time	" H02_en.27" on page 152
H02.28	2002-1Dh	Parameters Initialization	0: Parameters in group H02 and above initialized 1: Parameters in group H00, H02 and above initialized 2: All parameters initialized (default values used for model-related parameters)	0	-	At stop	" H02_en.28" on page 152
H02.30	2002-1Fh	User password	0–65535	0	-	Real-time	" H02_en.30" on page 153
H02.31	2002-20h	System parameter initialization	0: No operation 1: Restore default settings 2: Clear fault records	0	-	At stop	" H02_en.31" on page 153
H02.32	2002-21h	Selection of parameters in group H0b	0–99	50	-	Real-time	" H02_en.32" on page 153
H02.35	2002-24h	Keypad data update frequency	0 Hz–20 Hz	0	Hz	Real-time	" H02_en.35" on page 154
H02.38	2002-27h	Overload time of external resistor	0s to 200s	40	s	Real-time	" H02_en.38" on page 154

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.41	2002-2Ah	Manufacturer password	0–65535	0	-	Real-time	*" H02_en.41" on page 154*
H02.47	2002-30h	Delay time from power cable breakage to brake OFF	0 ms–1000 ms	10	ms	Real-time	*" H02_en.47" on page 155*

1.4 H03 Terminal Input Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H03.00	2003-01h	DI function allocation 1 (activated upon power-on)	0: Corresponding to null 1: Corresponding to FunIN.1 2: Corresponding to FunIN.2 4: Corresponding to FunIN.3 8: Corresponding to FunIN.4 16: Corresponding to FunIN.5 32: Corresponding to FunIN.6 64: Corresponding to FunIN.7 128: Corresponding to FunIN.8 256: Corresponding to FunIN.9 512: Corresponding to FunIN.10 1024: Corresponding to FunIN.11 2048: Corresponding to FunIN.12 4096: Corresponding to FunIN.13 8192: Corresponding to FunIN.14 16384: Corresponding to FunIN.15 32768: Corresponding to FunIN.16	0	-	Real-time	*" H03_en.00" on page 155*
H03.01	2003-02h	DI function allocation 2 (activated upon power-on)	0: Corresponding to null 1: Corresponding to FunIN.17 2: Corresponding to FunIN.18 4: Corresponding to FunIN.19 8: Corresponding to FunIN.20 16: Corresponding to FunIN.21 32: Corresponding to FunIN.22 64: Corresponding to FunIN.23 128: Corresponding to FunIN.24 256: Corresponding to FunIN.25 512: Corresponding to FunIN.26 1024: Corresponding to FunIN.27 2048: Corresponding to FunIN.28 4096: Corresponding to FunIN.29 16384: Corresponding to FunIN.31 32768: Corresponding to FunIN.32	0	-	Real-time	*" H03_en.01" on page 156*
H03.02	2003-03h	DI1 function	See *" H03_en.02" on page 156* for details.	14	-	Real-time	*" H03_en.02" on page 156*
H03.03	2003-04h	DI1 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.03" on page 158*
H03.04	2003-05h	DI2 function	See H03.02.	15	-	Real-time	*" H03_en.04" on page 158*
H03.05	2003-06h	DI2 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.05" on page 159*
H03.06	2003-07h	DI3 function	See H03.02.	13	-	Real-time	*" H03_en.06" on page 159*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H03.07	2003-08h	DI3 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.07" on page 159*
H03.08	2003-09h	DI4 function	See H03.02.	2	-	Real-time	*" H03_en.08" on page 159*
H03.09	2003-0Ah	DI4 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.09" on page 160*
H03.10	2003-0Bh	DI5 function	See H03.02.	1	-	Real-time	*" H03_en.10" on page 160*
H03.11	2003-0Ch	DI5 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.11" on page 160*
H03.12	2003-0Dh	DI6 function	See H03.02.	0	-	Real-time	*" H03_en.12" on page 161*
H03.13	2003-0Eh	DI6 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.13" on page 161*
H03.14	2003-0Fh	DI7 function	See H03.02.	45	-	Real-time	*" H03_en.14" on page 161*
H03.15	2003-10h	DI7 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.15" on page 161*
H03.16	2003-11h	DI8 function	See H03.02.	31	-	Real-time	*" H03_en.16" on page 162*
H03.17	2003-12h	DI8 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H03_en.17" on page 162*
H03.34	2003-23h	DI function allocation 3 (activated upon power-on)	0: Corresponding to null 1: Corresponding to FunIN.33 2: Corresponding to FunIN.34 4: Corresponding to FunIN.35 8: Corresponding to FunIN.36 16: Corresponding to FunIN.37 32: Corresponding to FunIN.38 64: Corresponding to FunIN.39 128: Corresponding to FunIN.40 256: Corresponding to FunIN.41 512: Corresponding to FunIN.42 1024: Corresponding to FunIN.43 2048: Corresponding to FunIN.44 4096: Corresponding to FunIN.45 8192: Corresponding to FunIN.46 16384: Corresponding to FunIN.47 32768: Corresponding to FunIN.48	0	-	Real-time	*" H03_en.34" on page 162*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H03.35	2003-24h	DI function allocation 4 (activated upon power-on)	0: Corresponding to null 1: Corresponding to FunIN.49 2: Corresponding to FunIN.50 4: Corresponding to FunIN.51 8: Corresponding to FunIN.52 16: Corresponding to FunIN.53 32: Corresponding to FunIN.54 64: Corresponding to FunIN.55 128: Corresponding to FunIN.56 256: Corresponding to FunIN.57 512: Corresponding to FunIN.58 1024: Corresponding to FunIN.59 2048: Corresponding to FunIN.60 4096: Corresponding to FunIN.61 8192: Corresponding to FunIN.62 16384: Corresponding to FunIN.63	0	-	Real-time	*" H03_en.35" on page 163*
H03.50	2003-33h	Voltage-type AI1 offset	-5000 mV–5000 mV	0	mV	Real-time	*" H03_en.50" on page 164*
H03.51	2003-34h	Voltage-type AI1 input filter time constant	0.00 ms–655.35 ms	2.00	ms	Real-time	*" H03_en.51" on page 164*
H03.53	2003-36h	Voltage-type AI1 dead zone	0.0 mV–1000.0 mV	10.0	mV	Real-time	*" H03_en.53" on page 165*
H03.54	2003-37h	Voltage-type AI1 zero drift	-500.0 mV–500.0 mV	0.0	mV	Real-time	*" H03_en.54" on page 165*
H03.55	2003-38h	Voltage-type AI2 offset	-5000 mV–5000 mV	0	mV	Real-time	*" H03_en.55" on page 165*
H03.56	2003-39h	Voltage-type AI2 input filter time constant	0.00 ms–655.35 ms	2.00	ms	Real-time	*" H03_en.56" on page 166*
H03.58	2003-3Bh	Voltage-type AI2 dead zone	0.0 mV–1000.0 mV	10.0	mV	Real-time	*" H03_en.58" on page 166*
H03.59	2003-3Ch	Voltage-type AI2 zero drift	-500.0 mV–500.0 mV	0.0	mV	Real-time	*" H03_en.59" on page 166*
H03.60	2003-3Dh	DI1 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.60" on page 167*
H03.61	2003-3Eh	DI2 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.61" on page 167*
H03.62	2003-3Fh	DI3 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.62" on page 167*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H03.63	2003-40h	DI4 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.63" on page 167*
H03.64	2003-41h	DI5 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.64" on page 168*
H03.65	2003-42h	DI6 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.65" on page 168*
H03.66	2003-43h	DI7 fitter time	0.00 ms–500.00 ms	0.00	ms	Real-time	*" H03_en.66" on page 168*
H03.67	2003-44h	DI8 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*" H03_en.67" on page 169*
H03.80	2003-51h	Speed corresponding to analog 10 V	0 rpm to 10000 rpm	3000	RPM	At stop	*" H03_en.80" on page 169*
H03.81	2003-52h	Torque corresponding to analog 10 V	0.00–8.00	1.00	-	At stop	*" H03_en.81" on page 169*

1.5 H04 Terminal Output Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H04.00	2004-01h	DO1 function	See *" H04_en.00" on page 169* for details.	1	-	Real-time	*" H04_en.00" on page 169*
H04.01	2004-02h	DO1 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H04_en.01" on page 170*
H04.02	2004-03h	DO2 function	See H04.00.	9	-	Real-time	*" H04_en.02" on page 171*
H04.03	2004-04h	DO2 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H04_en.03" on page 171*
H04.04	2004-05h	DO3 function	See H04.00.	0	-	Real-time	*" H04_en.04" on page 171*
H04.05	2004-06h	DO3 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H04_en.05" on page 171*
H04.06	2004-07h	DO4 function	See H04.00.	11	-	Real-time	*" H04_en.06" on page 172*
H04.07	2004-08h	DO4 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H04_en.07" on page 172*
H04.08	2004-09h	DO5 function	See H04.00.	16	-	Real-time	*" H04_en.08" on page 172*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H04.09	2004-0Ah	DO5 logic selection	0: Normally open 1: Closed	0	-	Real-time	" H04_en.09" on page 173
H04.22	2004-17h	DO source selection	bit0: DO1 0: DO1 function output 1: bit0 of H31.04 bit1: DO2 0: DO2 function output 1: bit1 of H31.04 bit2: DO3 0: DO3 function output 1: bit2 of H31.04 bit3: DO4 0: DO4 function output 1: bit3 of H31.04 bit4: DO5 0: DO5 function output 1: bit4 of H31.04	0	-	Real-time	" H04_en.22" on page 173
H04.23	2004-18h	Communication-forced DO logic in non-OP status	bit0: DO1 0: Status unchanged 1: No output bit1: DO2 0: Status unchanged 1: No output bit2: DO3 0: Status unchanged 1: No output bit3: DO4 0: Status unchanged 1: No output bit4: DO5 0: Status unchanged 1: No output	0	-	Real-time	" H04_en.23" on page 174
H04.50	2004-33h	AO1 signal selection	0: Motor speed (1 V/1000 rpm) 1: Speed reference (1 V/1000 rpm) 2: Torque reference (1 V/100 x rated torque) 3: Position deviation (0.5 mV/1 reference unit) 4: Position deviation (0.5 mV/1 encoder unit) 5: Position reference speed (1 V/1000 rpm) 6: Positioning completed 8: AI1 voltage 9: AI2 voltage 10: Defined by H31.05	0	-	Real-time	" H04_en.50" on page 174

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H04.51	2004-34h	AO1 offset voltage	-10000 mV–10000 mV	0	mV	Real-time	" H04_en.51" on page 175
H04.52	2004-35h	AO1 ratio	-99.99–99.99	1.00	-	Real-time	" H04_en.52" on page 175

1.6 H05 Position Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.00	2005-01h	Primary position reference source	0: Pulse reference 1: Step reference 2: Multi-position reference	0	-	Real-time	" H05_en.00" on page 176
H05.01	2005-02h	Position pulse reference input terminal	0: Low speed 1: High speed	0	-	At stop	" H05_en.01" on page 176
H05.02	2005-03h	Pulses per revolution	0 PPR to 4294967295 PPR	0	PPR	At stop	" H05_en.02" on page 176
H05.04	2005-05h	First-order low-pass filter time constant	0.0 ms–6553.5 ms	0.0	ms	At stop	" H05_en.04" on page 177
H05.05	2005-06h	Step amount	-9999 to +9999	50	Reference unit	At stop	" H05_en.05" on page 177
H05.06	2005-07h	Moving average filter time constant 1	0.0 ms–128.0 ms	0.0	ms	At stop	" H05_en.06" on page 177
H05.07	2005-08h	Electronic gear ratio 1 (numerator)	1–1073741824	8388608	-	Real-time	" H05_en.07" on page 178
H05.09	2005-0Ah	Electronic gear ratio 1 (denominator)	1–1073741824	10000	-	Real-time	" H05_en.09" on page 178
H05.11	2005-0Ch	Electronic gear ratio 2 (numerator)	1–1073741824	8388608	-	Real-time	" H05_en.11" on page 178

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.13	2005-0Eh	Electronic gear ratio 2 (denominator)	1–1073741824	10000	-	Real-time	*" H05_en.13" on page 179*
H05.15	2005-10h	Pulse reference form	0: Direction + Pulse, positive logic 1: Direction + Pulse, negative logic 2: Phase A + phase B quadrature pulse, quadrupled frequency 3: CW + CCW	0	-	At stop	*" H05_en.15" on page 179*
H05.16	2005-11h	Clear action	0: Position deviation cleared upon S-ON OFF or fault 1: Position deviation cleared upon S-ON OFF or fault 2: Position deviation cleared upon active DI function 35 or non-operational state	0	-	At stop	*" H05_en.16" on page 181*
H05.17	2005-12h	Number of encoder frequency-division pulses	0 PPR to 4194303 PPR	2500	PPR	At stop	*" H05_en.17" on page 181*
H05.19	2005-14h	Speed feedforward control	0: No speed feedforward 1: Internal speed feedforward 2: H05.72 3: Zero phase	1	-	At stop	*" H05_en.19" on page 182*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.20	2005-15h	Condition for positioning completed signal output	0: When absolute value of position deviation is smaller than the value of H05.21, a positioning completion ON signal is output. 1: When filtered position command is 0 and absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. 2: When unfiltered position command is 0 and absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. 3: When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. Thereafter, when the position command is 0, a positioning completion ON signal is output within the positioning holding time H0560. After the positioning holding time H0560 elapsed, the output of the positioning completion signal is determined according to the unfiltered position command and the absolute value of the position deviation. 4: When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. Thereafter, when the position command is 0, a positioning completion ON signal is output within the positioning holding time H0560. After the positioning holding time H0560 elapsed, the output of the positioning completion signal is determined according to the filtered position command and the absolute value of the position deviation.	0	-	Real-time	*" H05_en.20" on page 182*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.20	2005-15h	Condition for positioning completed signal output	5: When the unfiltered position command is 0, the zero-speed signal is ON and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. 6: When the filtered position command is 0, the zero-speed signal is ON and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. 7: When the unfiltered position command is 0, positioning completion evaluation starts after the delay time H05.60 elapses. When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. 8: When the filtered position command is 0, positioning completion evaluation starts after the delay time H05.60 elapses. When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. 9: When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, positioning completion evaluation starts after the delay time H05.60 elapses. When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.	0	-	Real-time	*" H05_en.20" on page 182*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.20	2005-15h	Condition for positioning completed signal output	10: When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, positioning completion evaluation starts after the delay time H05.60 elapses. When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.	0	-	Real-time	*" H05_en.20" on page 182*
H05.21	2005-16h	Threshold of positioning completed	1 to 65535	46976	Encoder unit	Real-time	*" H05_en.21" on page 184*
H05.22	2005-17h	Proximity threshold	1 to 65535	65535	Encoder unit	Real-time	*" H05_en.22" on page 184*
H05.24	2005-19h	Interrupt positioning displacement	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H05_en.24" on page 185*
H05.26	2005-1Bh	Constant operating speed in interrupt positioning	0 rpm to 10000 rpm	200	RPM	Real-time	*" H05_en.26" on page 185*
H05.27	2005-1Ch	Acc./Dec. time of interrupt positioning	0 ms–65535 ms	10	ms	Real-time	*" H05_en.27" on page 185*
H05.29	2005-1Eh	Interruption fixed length unlock	0: Disabled 1: Enabled	1	-	Real-time	*" H05_en.29" on page 186*
H05.30	2005-1Fh	Homing enable selection	0: Disabled 1: Homing enabled through the HomingStart signal input from DI 2: Electrical homing enabled through the HomingStart signal input from DI 3: Homing started immediately upon power-on 4: Homing executed immediately 5: Electrical homing started 6: Current position as home 8: D-triggered position as home	0	-	Real-time	*" H05_en.30" on page 186*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.31	2005-20h	Homing mode	0: Forward, home switch as deceleration point and home 1: Reverse, home switch as deceleration point and home 2: Forward, Z signal as deceleration point and home 3: Reverse, motor Z signal as deceleration point and home 4: Forward, home switch as deceleration point and Z signal as home 5: Reverse, home switch as deceleration point and Z signal as home 6: Forward, positive limit switch as deceleration point and home 7: Reverse, negative limit switch as deceleration point and home 8: Forward, positive limit switch as deceleration point and Z signal as home 9: Reverse, negative limit switch as deceleration point and Z signal as home 10: Forward, mechanical limit position as deceleration point and home 11: Reverse, mechanical limit position as deceleration point and home 12: Forward, mechanical limit position as deceleration point and Z signal as home 13: Reverse, mechanical limit position as deceleration point and Z signal as home 14: Forward single-turn homing 15: Reverse single-turn homing 16: Nearby single-turn homing	0	-	Real-time	" H05_en.31" on page 186
H05.32	2005-21h	Speed of high-speed search for home switch signal	0 RPM to 3000 RPM	100	RPM	Real-time	" H05_en.32" on page 187

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.33	2005-22h	Speed of low-speed search for home switch signal	0 rpm to 1000 rpm	10	RPM	Real-time	" H05_en.33" on page 187
H05.34	2005-23h	Acceleration/ Deceleration time during homing	0 ms–1000 ms	1000	ms	Real-time	" H05_en.34" on page 188
H05.35	2005-24h	Home search time limit	0–65535	10000	-	Real-time	" H05_en.35" on page 188
H05.36	2005-25h	Mechanical home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	" H05_en.36" on page 188
H05.38	2005-27h	Frequency-division output source	0: Encoder frequency-division output 1: Pulse reference synchronous output 2: Frequency-division output inhibited 4: H31.01 reference frequency output	0	-	Real-time	" H05_en.38" on page 189
H05.39	2005-28h	Electronic gear ratio switchover condition	0: Switchover after position reference is kept 0 for 2.5 ms 1: Switched in real time	0	-	At stop	" H05_en.39" on page 189
H05.40	2005-29h	Mechanical home offset and action upon overtravel	0: H05.36 as the coordinate after homing, reverse homing applied after homing triggered again on overtravel 1: H05.36 as the relative offset after homing, reverse homing applied after homing triggered again on overtravel 2: H05.36 as the coordinate after homing, reverse homing auto-applied on overtravel 3: H05.36 as the relative offset after homing, reverse homing auto-applied on overtravel	0	-	Real-time	" H05_en.40" on page 190

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.41	2005-2Ah	Z pulse output polarity	bit0: Frequency-division Z output polarity 0: Positive (high level upon active Z pulse) 1: Negative (low level upon active Z pulse) bit1: OCZ output polarity 0: Positive (high level upon active Z pulse) 1: Negative (low level upon active Z pulse) bit2: Inner loop probe Z signal source 0: Motor Z signal 1: Frequency-division output Z signal	1	-	At stop	*" H05_en.41" on page 190*
H05.43	2005-2Ch	Position pulse edge	0: Rising edge-triggered 1: Falling edge-triggered	0	-	Real-time	*" H05_en.43" on page 192*
H05.44	2005-2Dh	Numerator of frequency-division output reduction ratio	1–16383	1	-	At stop	*" H05_en.44" on page 192*
H05.45	2005-2Eh	Denominator of frequency-division output reduction ratio	1–8191	1	-	At stop	*" H05_en.45" on page 192*
H05.46	2005-2Fh	DI selection of multi-turn frequency-division Z starting point	0: No selection 1: DI1 2: DI2 3: DI3 4: DI4 5: DI5 6: DI6 7: DI7 8: DI8	0	-	Real-time	*" H05_en.46" on page 193*
H05.47	2005-30h	Frequency-division Z pulse width	0 us to 400 us	0	us	Real-time	*" H05_en.47" on page 193*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.48	2005-31h	Frequency-division output dead zone setting threshold	0–255	0	-	Real-time	" H05_en.48" on page 193
H05.50	2005-33h	Mechanical gear ratio in absolute position rotation mode (numerator)	1–65535	1	-	At stop	" H05_en.50" on page 194
H05.51	2005-34h	Mechanical gear ratio in absolute position rotation mode (denominator)	1–65535	1	-	At stop	" H05_en.51" on page 194
H05.52	2005-35h	Pulses per revolution of the load in absolute position rotation mode (low 32 bits)	0 to 4294967295	0	Encoder unit	At stop	" H05_en.52" on page 194
H05.54	2005-37h	Pulses per revolution of the load in absolute position rotation mode (high 32 bits)	0 to 4294967295	0	Encoder unit	At stop	" H05_en.54" on page 195
H05.58	2005-3Bh	Torque threshold in homing upon hit-and-stop	0.0% to 400.0%	100.0	%	Real-time	" H05_en.58" on page 195
H05.59	2005-3Ch	Positioning window time	0 ms–30000 ms	0	ms	Real-time	" H05_en.59" on page 195
H05.60	2005-3Dh	Hold time of positioning completed	0 ms–30000 ms	0	ms	Real-time	" H05_en.60" on page 195

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.66	2005-43h	Homing time unit	0: 1 ms 1: 10 ms 2: 100 ms	2	-	At stop	" H05_en.66" on page 196
H05.71	2005-48h	Motor Z signal width	1 ms–100 ms	4	ms	Real-time	" H05_en.71" on page 197
H05.72	2005-49h	External speed feedforward source selection	0: 60B1 1: AI1 2: AI2	1	-	Real-time	" H05_en.72" on page 197

1.7 H06 Speed Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.00	2006-01h	Source of main speed reference A	0: Digital setting (H06.03) 1: AI1 2: AI2	0	-	At stop	" H06_en.00" on page 197
H06.01	2006-02h	Source of auxiliary speed reference B	0: Digital setting (H06.03) 1: AI1 2: AI2 5: Multi-speed reference	1	-	At stop	" H06_en.01" on page 198
H06.02	2006-03h	Speed reference source	0: Source of main speed reference A 1: Source of auxiliary speed reference B 2: A+B 3: Switched between A and B 4: Communication	0	-	At stop	" H06_en.02" on page 198
H06.03	2006-04h	Speed reference set through keypad	-10000 rpm to +10000 rpm	200	RPM	Real-time	" H06_en.03" on page 199
H06.04	2006-05h	DI jog speed reference	0 rpm to 10000 rpm	150	RPM	Real-time	" H06_en.04" on page 199
H06.05	2006-06h	Acc. ramp time of speed reference	0 ms–65535 ms	0	ms	Real-time	" H06_en.05" on page 200
H06.06	2006-07h	Dec. ramp time of speed reference	0 ms–65535 ms	0	ms	Real-time	" H06_en.06" on page 200

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.07	2006-08h	Maximum speed limit	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.07" on page 200
H06.08	2006-09h	Forward speed threshold	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.08" on page 201
H06.09	2006-0Ah	Reverse speed threshold	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.09" on page 201
H06.10	2006-0Bh	Deceleration unit in emergency stop	0: Multiplied by 1 1: Multiplied by 10 2: Multiplied by 100	0	-	At stop	" H06_en.10" on page 201
H06.11	2006-0Ch	Torque feedforward control	0: No torque feedforward 1: Internal torque feedforward	1	-	Real-time	" H06_en.11" on page 202
H06.12	2006-0Dh	Acceleration ramp time of jog speed	0 ms–65535 ms	10	ms	Real-time	" H06_en.12" on page 202
H06.13	2006-0Eh	Speed feedforward smoothing filter	0us to 65535us	0	us	Real-time	" H06_en.13" on page 202
H06.15	2006-10h	Zero clamp speed threshold	0 rpm to 10000 rpm	10	RPM	Real-time	" H06_en.15" on page 202
H06.16	2006-11h	Threshold of TGON (motor rotation) signal	0 rpm to 1000 rpm	20	RPM	Real-time	" H06_en.16" on page 203
H06.17	2006-12h	Threshold of V-Cmp (speed matching) signal	0 RPM –100 RPM	10	RPM	Real-time	" H06_en.17" on page 203
H06.18	2006-13h	Threshold of speed reach signal	20 rpm to 10000 rpm	1000	RPM	Real-time	" H06_en.18" on page 203
H06.19	2006-14h	Threshold of zero speed output signal	1 rpm to 10000 rpm	10	RPM	Real-time	" H06_en.19" on page 203
H06.40	2006-29h	Ramp 1 deceleration time	0 ms–65535 ms	0	ms	Real-time	" H06_en.40" on page 204

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.41	2006-2Ah	Ramp 2 deceleration time	0 ms–65535 ms	0	ms	Real-time	" H06_en.41" on page 204
H06.50	2006-33h	Speed S-curve enable switch	0: Disabled 1: Enabled	1	-	At stop	" H06_en.50" on page 204
H06.51	2006-34h	Increasing acceleration 1 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.51" on page 205
H06.52	2006-35h	Decreasing acceleration 1 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.52" on page 205
H06.53	2006-36h	Decreasing deceleration 1 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.53" on page 205
H06.54	2006-37h	Decreasing acceleration 1 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.54" on page 205
H06.55	2006-38h	Increasing acceleration 2 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.55" on page 206
H06.56	2006-39h	Decreasing acceleration 2 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.56" on page 206

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.57	2006-3Ah	Decreasing deceleration 2 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.57" on page 206*
H06.58	2006-3Bh	Decreasing acceleration 2 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.58" on page 207*
H06.59	2006-3Ch	Increasing acceleration 3 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.59" on page 207*
H06.60	2006-3Dh	Decreasing acceleration 3 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.60" on page 207*
H06.61	2006-3Eh	Decreasing deceleration 3 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.61" on page 208*
H06.62	2006-3Fh	Decreasing acceleration 3 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.62" on page 208*
H06.63	2006-40h	Increasing acceleration 4 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.63" on page 208*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.64	2006-41h	Decreasing acceleration 4 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.64" on page 209
H06.65	2006-42h	Decreasing deceleration 4 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.65" on page 209
H06.66	2006-43h	Decreasing acceleration 4 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.66" on page 209
H06.67	2006-44h	Increasing acceleration 5 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.67" on page 210
H06.68	2006-45h	Decreasing acceleration 5 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.68" on page 210
H06.69	2006-46h	Decreasing deceleration 5 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.69" on page 210
H06.70	2006-47h	Decreasing acceleration 5 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.70" on page 211

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.71	2006-48h	Increasing acceleration 6 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.71" on page 211*
H06.72	2006-49h	Decreasing acceleration 6 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.72" on page 211*
H06.73	2006-4Ah	Decreasing deceleration 6 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.73" on page 212*
H06.74	2006-4Bh	Decreasing acceleration 6 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.74" on page 212*
H06.75	2006-4Ch	Increasing acceleration 7 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.75" on page 212*
H06.76	2006-4Dh	Decreasing acceleration 7 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.76" on page 213*
H06.77	2006-4Eh	Decreasing deceleration 7 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.77" on page 213*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.78	2006-4Fh	Decreasing acceleration 7 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.78" on page 213
H06.79	2006-50h	Increasing acceleration 8 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.79" on page 214
H06.80	2006-51h	Decreasing acceleration 8 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.80" on page 214
H06.81	2006-52h	Decreasing deceleration 8 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.81" on page 214
H06.82	2006-53h	Decreasing acceleration 8 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.82" on page 215

1.8 H07 Torque Control Parameters

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H07.00	2007-01h	Source of main torque reference A	0: Keypad (H07.03) 1: AI1 2: AI2	0	-	At stop	" H07_en.00" on page 215
H07.01	2007-02h	Source of auxiliary torque reference B	0: Keypad (H07.03) 1: AI1 2: AI2	1	-	At stop	" H07_en.01" on page 215

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H07.02	2007-03h	Torque reference source	0: Source of main torque reference A 1: Source of auxiliary torque reference B 2: Source of A+B 3: Switched between A and B 4: Communication	0	-	At stop	" H07_en.02" on page 216
H07.03	2007-04h	Torque reference set through keypad	-400.0% to 400.0%	0.0	%	Real-time	" H07_en.03" on page 216
H07.05	2007-06h	Torque reference filter time constant 1	0.00 ms–30.00 ms	0.50	ms	Real-time	" H07_en.05" on page 217
H07.06	2007-07h	Torque reference filter time constant 2	0.00 ms–30.00 ms	0.27	ms	Real-time	" H07_en.06" on page 217
H07.07	2007-08h	Torque Limit source	0: Positive/Negative internal torque limit 1: Internal or external limit as defined by DI 2: T_LMT 3: T_LMT or external limit as defined by DI (FunIN.16 or FunIN.17) 4: T_LMT or internal limit (FunIN.16 or FunIN.17) as defined by DI	0	-	Real-time	" H07_en.07" on page 217
H07.08	2007-09h	T-LMT selection	1: AI1 2: AI2	1	-	Real-time	" H07_en.08" on page 218
H07.09	2007-0Ah	Positive internal torque limit	0.0% to 400.0%	350.0	%	Real-time	" H07_en.09" on page 218
H07.10	2007-0Bh	Negative internal torque limit	0.0% to 400.0%	350.0	%	Real-time	" H07_en.10" on page 218
H07.11	2007-0Ch	Positive external torque limit	0.0% to 400.0%	350.0	%	Real-time	" H07_en.11" on page 218
H07.12	2007-0Dh	Negative external torque limit	0.0% to 400.0%	350.0	%	Real-time	" H07_en.12" on page 219
H07.15	2007-10h	Emergency-stop torque	0.0% to 400.0%	100.0	%	Real-time	" H07_en.15" on page 219

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H07.17	2007-12h	Speed limit source	0: Internal speed limit 1: V-LMT 2: H07.19 or H07.20 as defined by DI	0	-	Real-time	" H07_en.17" on page 219
H07.18	2007-13h	V-LMT selection	1: AI1 2: AI2	1	-	Real-time	" H07_en.18" on page 220
H07.19	2007-14h	Positive speed limit/ Speed limit 1 in torque control	0 rpm to 10000 rpm	3000	RPM	Real-time	" H07_en.19" on page 220
H07.20	2007-15h	Negative speed limit/ Speed limit 2 in torque control	0 rpm to 10000 rpm	3000	RPM	Real-time	" H07_en.20" on page 220
H07.21	2007-16h	Torque reach base value	0.0% to 400.0%	0.0	%	Real-time	" H07_en.21" on page 220
H07.22	2007-17h	Torque reach valid value	0.0% to 400.0%	20.0	%	Real-time	" H07_en.22" on page 221
H07.23	2007-18h	Torque reach invalid value	0.0% to 400.0%	10.0	%	Real-time	" H07_en.23" on page 221
H07.24	2007-19h	Field weakening depth	60% to 115%	115	%	Real-time	" H07_en.24" on page 221
H07.25	2007-1Ah	Max. permissible demagnetizing current	0% to 300%	100	%	Real-time	" H07_en.25" on page 221
H07.26	2007-1Bh	Field weakening selection	0: Disabled 1: Enabled	0	-	At stop	" H07_en.26" on page 222
H07.27	2007-1Ch	Flux weakening gain	0.001 Hz–1.000 Hz	0.030	Hz	Real-time	" H07_en.27" on page 222
H07.28	2007-1Dh	Speed of flux weakening point	0–65535	0	-	Unchangeable	" H07_en.28" on page 222
H07.35	2007-24h	Torque non-standard feature enable	bit0: Motor output correction enable bit1: Shield compensation data enable	0	-	At stop	" H07_en.35" on page 223

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H07.36	2007-25h	Time constant of low-pass filter 2	0.00 ms–10.00 ms	0.00	ms	Real-time	" H07_en.36" on page 223
H07.37	2007-26h	Torque reference filter selection	0: First-order filter 1: Biquad filter	0	-	Real-time	" H07_en.37" on page 223
H07.38	2007-27h	Biquad filter attenuation ratio	0–50	16	-	Real-time	" H07_en.38" on page 224
H07.40	2007-29h	Speed limit threshold in torque control mode	0 ms–300 ms	10	ms	Real-time	" H07_en.40" on page 224
H07.42	2007-2Bh	Biquad low pass filter damping coefficient	0.001–10.000	1.000	-	Real-time	" H07_en.42" on page 224

1.9 H08 Gain Parameters

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H08.00	2008-01h	Speed loop gain	0.1 Hz–2000.0 Hz	40.0	Hz	Real-time	" H08_en.00" on page 224
H08.01	2008-02h	Speed loop integral time constant	0.15 ms–512.00 ms	19.89	ms	Real-time	" H08_en.01" on page 225
H08.02	2008-03h	Position loop gain	0.1 Hz–2000.0 Hz	64.0	Hz	Real-time	" H08_en.02" on page 225
H08.03	2008-04h	2nd speed loop gain	0.1 Hz–2000.0 Hz	75.0	Hz	Real-time	" H08_en.03" on page 226
H08.04	2008-05h	2nd speed loop integral time constant	0.15 ms–512.00 ms	10.61	ms	Real-time	" H08_en.04" on page 226
H08.05	2008-06h	2nd position loop gain	0.1 Hz–2000.0 Hz	120.0	Hz	Real-time	" H08_en.05" on page 226
H08.08	2008-09h	2nd gain mode setting	0: Fixed to the 1st gain, switched between P and PI as defined by bit26 of external 60FEh 1: Switched between the 1st and 2nd gain sets as defined by H08.09	1	-	Real-time	" H08_en.08" on page 226

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H08.09	2008-0Ah	Gain switchover condition	0: Fixed to the 1st gain set (PS) 1: Switched as defined by bit26 of 60FEh 2: Torque reference too large (PS) 3: Speed reference too large (PS) 4: Speed reference change rate too large (PS) 5: Speed reference low/high speed threshold (PS) 6: Position deviation too large (P) 7: Position reference available (P) 8: Positioning unfinished (P) 9: Actual speed (P) 10: Position reference + Actual speed (P)	0	-	Real-time	*" H08_en.09" on page 227*
H08.10	2008-0Bh	Gain switchover delay	0.0 ms–1000.0 ms	5.0	ms	Real-time	*" H08_en.10" on page 229*
H08.11	2008-0Ch	Gain switchover level	0–20000	50	-	Real-time	*" H08_en.11" on page 229*
H08.12	2008-0Dh	Gain switchover hysteresis	0–20000	30	-	Real-time	*" H08_en.12" on page 230*
H08.13	2008-0Eh	Position gain switchover time	0.0 ms–1000.0 ms	3.0	ms	Real-time	*" H08_en.13" on page 230*
H08.15	2008-10h	Load moment of inertia ratio	0.00–120.00	1.00	-	Real-time	*" H08_en.15" on page 230*
H08.17	2008-12h	Zero phase delay	0.0 ms–4.0 ms	0.0	ms	Real-time	*" H08_en.17" on page 231*
H08.18	2008-13h	Time constant of speed feedforward filter	0.00 ms–64.00 ms	0.50	ms	Real-time	*" H08_en.18" on page 231*
H08.19	2008-14h	Speed feedforward gain	0.0% to 100.0%	0.0	%	Real-time	*" H08_en.19" on page 231*
H08.20	2008-15h	Torque feedforward filter time constant	0.00 ms–64.00 ms	0.50	ms	Real-time	*" H08_en.20" on page 232*
H08.21	2008-16h	Torque feedforward gain	0.0% to 300.0%	0.0	%	Real-time	*" H08_en.21" on page 232*

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H08.22	2008-17h	Speed feedback filtering option	0: Inhibited 1: 2 times 2: 4 times 3: 8 times 4: 16 times	0	-	At stop	" H08_en.22" on page 233
H08.23	2008-18h	Cutoff frequency of speed feedback low-pass filter	100 Hz–8000 Hz	8000	Hz	Real-time	" H08_en.23" on page 233
H08.24	2008-19h	PDFF control coefficient	0.0% to 200.0%	100.0	%	Real-time	" H08_en.24" on page 233
H08.27	2008-1Ch	Speed observer cutoff frequency	50 Hz–600 Hz	170	Hz	Real-time	" H08_en.27" on page 234
H08.28	2008-1Dh	Speed observer inertia correction coefficient	1% to 1600%	100	%	Real-time	" H08_en.28" on page 234
H08.29	2008-1Eh	Speed observer filter time	0.00 ms–10.00 ms	0.80	ms	Real-time	" H08_en.29" on page 235
H08.31	2008-20h	Disturbance cutoff frequency	1 Hz–4000 Hz	600	Hz	Real-time	" H08_en.31" on page 235
H08.32	2008-21h	Disturbance compensation gain	0% to 100%	0	%	Real-time	" H08_en.32" on page 235
H08.33	2008-22h	Disturbance observer inertia correction coefficient	1% to 1600%	100	%	Real-time	" H08_en.33" on page 235
H08.37	2008-26h	Phase modulation for medium-frequency jitter suppression 2	-90° to 90°	0	°	Real-time	" H08_en.37" on page 236
H08.38	2008-27h	Medium-frequency suppression 2 frequency	0 Hz–1000 Hz	0	Hz	Real-time	" H08_en.38" on page 236

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H08.39	2008-28h	Compensation gain of medium-frequency jitter suppression 2	0% to 300%	0	%	Real-time	" H08_en.39" on page 236
H08.40	2008-29h	Speed observer selection	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.40" on page 237
H08.42	2008-2Bh	Model control selection	0: Disabled 1: Enabled 2: Reserved	0	-	Real-time	" H08_en.42" on page 237
H08.43	2008-2Ch	Model gain	0.1–2000.0	40.0	-	Real-time	" H08_en.43" on page 237
H08.46	2008-2Fh	Feedforward value	0.0–102.4	95.0	-	Real-time	" H08_en.46" on page 238
H08.53	2008-36h	Medium- and low-frequency jitter suppression frequency 3	0.0 Hz–300.0 Hz	0.0	Hz	Real-time	" H08_en.53" on page 238
H08.54	2008-37h	Medium- and low-frequency jitter suppression compensation 3	0% to 200%	0	%	Real-time	" H08_en.54" on page 238
H08.56	2008-39h	Medium- and low-frequency jitter suppression phase modulation 3	0% to 600%	100	%	Real-time	" H08_en.56" on page 238
H08.59	2008-3Ch	Medium- and low-frequency jitter suppression frequency 4	0.0 Hz–300.0 Hz	0.0	Hz	Real-time	" H08_en.59" on page 239

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H08.60	2008-3Dh	Medium- and low-frequency jitter suppression compensation 4	0% to 200%	0	%	Real-time	" H08_en.60" on page 239
H08.61	2008-3Eh	Medium- and low-frequency jitter suppression phase modulation 4	0% to 600%	100	%	Real-time	" H08_en.61" on page 239
H08.62	2008-3Fh	Position loop integral time constant	0.15–512.00	512.00	-	Real-time	" H08_en.62" on page 240
H08.63	2008-40h	2nd position loop integral time constant	0.15–512.00	512.00	-	Real-time	" H08_en.63" on page 240
H08.64	2008-41h	Speed observer feedback source	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.64" on page 240
H08.65	2008-42h	Zero deviation control selection	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.65" on page 240
H08.66	2008-43h	Zero deviation control position average filter	0.0 ms–320.0 ms	5.0	ms	Real-time	" H08_en.66" on page 241
H08.68	2008-45h	Speed feedforward of zero deviation control	0.0% to 100.0%	100.0	%	Real-time	" H08_en.68" on page 241

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H08.69	2008-46h	Torque feedforward of zero deviation control	0.0% to 100.0%	100.0	%	Real-time	" H08_en.69" on page 241
H08.90	2008-5Bh	Encoder scale spacing ripple suppressor enable	0: Inhibited 1: 1st group activated only-adaptive mode 2: 1st group activated only-hysteresis mode 3: Two groups activated-adaptive mode 4: Two groups activated-hysteresis mode	0	-	Real-time	" H08_en.90" on page 242

1.10 H09 Auto-tuning Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.00	2009-01h	Auto-adjustment mode	0: Disabled, manual gain tuning required 1: Enabled, gain parameters generated automatically based on the stiffness level 2: Positioning mode, gain parameters generated automatically based on the stiffness level 3: Interpolation mode+Inertia auto-tuning 4: Normal mode+Inertia auto-tuning 6: Quick positioning mode+Inertia auto-tuning	4	-	Real-time	" H09_en.00" on page 242
H09.01	2009-02h	Stiffness level selection	0–41	15	-	Real-time	" H09_en.01" on page 243

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.02	2009-03h	Adaptive notch mode	0: Adaptive notch no longer updated 1: One adaptive notch activated (3rd notch) 2: Two adaptive notches activated (3rd and 4th notches) 3: Resonance point tested only (displayed in H09.24) 4: Adaptive notch cleared, values of 3rd and 4th notches restored to default	3	-	Real-time	*" H09_en.02" on page 243*
H09.03	2009-04h	Online inertia auto-tuning mode	0: Disabled 1: Enabled, changing slowly 2: Enabled, changing normally 3: Enabled, changing quickly	2	-	Real-time	*" H09_en.03" on page 244*
H09.05	2009-06h	Offline inertia auto-tuning mode	0: Bi-directional 1: Unidirectional	0	-	At stop	*" H09_en.05" on page 244*
H09.06	2009-07h	Max. speed of inertia auto-tuning	100 RPM to 1000 RPM	500	RPM	At stop	*" H09_en.06" on page 244*
H09.07	2009-08h	Time constant for accelerating to max. speed during inertia auto-tuning	20 ms–800 ms	125	ms	At stop	*" H09_en.07" on page 245*
H09.08	2009-09h	Interval time after an individual inertia auto-tuning	50 ms–10000 ms	800	ms	At stop	*" H09_en.08" on page 245*
H09.09	2009-0Ah	Number of motor revolutions per inertia auto-tuning	0.00–100.00	1.00	-	Real-time	*" H09_en.09" on page 245*
H09.11	2009-0Ch	Vibration threshold	0.0% to 100.0%	5.0	%	Real-time	*" H09_en.11" on page 246*
H09.12	2009-0Dh	Frequency of the 1st notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.12" on page 246*
H09.13	2009-0Eh	Width level of the 1st notch	0–20	2	-	Real-time	*" H09_en.13" on page 246*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.14	2009-0Fh	Depth level of the 1st notch	0–99	0	-	Real-time	*" H09_en.14" on page 246*
H09.15	2009-10h	Frequency of the 2nd notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.15" on page 247*
H09.16	2009-11h	Width level of the 2nd notch	0–20	2	-	Real-time	*" H09_en.16" on page 247*
H09.17	2009-12h	Depth level of the 2nd notch	0–99	0	-	Real-time	*" H09_en.17" on page 247*
H09.18	2009-13h	Frequency of the 3rd notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.18" on page 248*
H09.19	2009-14h	Width level of the 3rd notch	0–20	2	-	Real-time	*" H09_en.19" on page 248*
H09.20	2009-15h	Depth level of the 3rd notch	0–99	0	-	Real-time	*" H09_en.20" on page 248*
H09.21	2009-16h	Frequency of the 4th notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.21" on page 248*
H09.22	2009-17h	Width level of the 4th notch	0–20	2	-	Real-time	*" H09_en.22" on page 249*
H09.23	2009-18h	Depth level of the 4th notch	0–99	0	-	Real-time	*" H09_en.23" on page 249*
H09.24	2009-19h	Auto-tuned resonance frequency	0 Hz–5000 Hz	0	Hz	Unchangeable	*" H09_en.24" on page 249*
H09.32	2009-21h	Gravity compensation value	-100.0% to 100.0%	0.0	%	Real-time	*" H09_en.32" on page 250*
H09.33	2009-22h	Positive friction compensation value	0.0% to 100.0%	0.0	%	Real-time	*" H09_en.33" on page 250*
H09.34	2009-23h	Negative friction compensation value	-100.0% to 0.0%	0.0	%	Real-time	*" H09_en.34" on page 250*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.35	2009-24h	Friction compensation speed	0.0–20.0	2.0	-	Real-time	" H09_en.35" on page 250
H09.36	2009-25h	Friction compensation speed	0: Slow mode+Speed reference 1: Slow mode+Model speed 2: Slow mode+Speed feedback 3: Slow mode+Observe speed 16: Quick mode +Speed reference 17: Quick mode +Model speed 18: Quick mode +Speed feedback 19: Quick mode+Observe speed	0	-	Real-time	" H09_en.36" on page 251
H09.37	2009-26h	Vibration monitoring time	0–65535	300	-	Real-time	" H09_en.37" on page 251
H09.38	2009-27h	Frequency of low-frequency resonance suppression 1 at the mechanical end	1.0 Hz–100.0 Hz	100.0	Hz	Real-time	" H09_en.38" on page 251
H09.39	2009-28h	Low-frequency resonance suppression 1 at the mechanical end	0–3	2	-	At stop	" H09_en.39" on page 252
H09.44	2009-2Dh	Frequency of low-frequency resonance suppression 2 at mechanical load end	0.0–100.0	0.0	-	Real-time	" H09_en.44" on page 252
H09.45	2009-2Eh	Responsiveness of low-frequency resonance suppression 2 at mechanical load end	0.01–5.00	1.00	-	Real-time	" H09_en.45" on page 252

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.47	2009-30h	Width of low-frequency resonance suppression 2 at mechanical load end	0.00–2.00	1.00	-	Real-time	" H09_en.47" on page 253
H09.49	2009-32h	Frequency of low-frequency resonance suppression 3 at mechanical load end	0.0–100.0	0.0	-	Real-time	" H09_en.49" on page 253
H09.50	2009-33h	Responsiveness of low-frequency resonance suppression 3 at mechanical load end	0.01–5.00	1.00	-	Real-time	" H09_en.50" on page 253
H09.52	2009-35h	Width of low-frequency resonance suppression 3 at mechanical load end	0.00–2.00	1.00	-	Real-time	" H09_en.52" on page 253
H09.54	2009-37h	Resonance detection torque threshold	0.0% to 300.0%	50.0	%	Real-time	" H09_en.54" on page 254
H09.56	2009-39h	Max. overshoot allowed by ETune	0–65535	2936	-	Real-time	" H09_en.56" on page 254
H09.57	2009-3Ah	STune resonance suppression switchover frequency	0 Hz–4000 Hz	900	Hz	Real-time	" H09_en.57" on page 254

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.58	2009-3Bh	STune resonance suppression reset selection	0: Disabled 1: Enabled	0	-	Real-time	" H09_en.58" on page 255
H09.71	2009-48h	Starting frequency	0 Hz–8000 Hz	15	Hz	Real-time	" H09_en.71" on page 255
H09.72	2009-49h	End frequency	0 Hz–8000 Hz	8000	Hz	Real-time	" H09_en.72" on page 255
H09.73	2009-4Ah	Frequency subdivision	0–500	50	-	Real-time	" H09_en.73" on page 255
H09.74	2009-4Bh	Excitation amplitude	0.0% to 400.0%	15.0	%	Real-time	" H09_en.74" on page 256
H09.75	2009-4Ch	Starting frequency 2	0 Hz–8000 Hz	500	Hz	Real-time	" H09_en.75" on page 256
H09.76	2009-4Dh	Frequency subdivision 2	0–1000	500	-	Real-time	" H09_en.76" on page 256
H09.77	2009-4Eh	Biquad filter mode	0: Disabled 1: First-order low-pass 2: Second-order low-pass 3: Notch 4: Lead-lag 5: User-defined	0	-	Real-time	" H09_en.77" on page 256
H09.78	2009-4Fh	Biquad filter numerator frequency	0 Hz–16000 Hz	8000	Hz	Real-time	" H09_en.78" on page 257
H09.79	2009-50h	Biquad filter numerator damping coefficient	0.001–10.000	1.000	-	Real-time	" H09_en.79" on page 257
H09.80	2009-51h	Biquad filter denominator frequency	0 Hz–16000 Hz	8000	Hz	Real-time	" H09_en.80" on page 257
H09.81	2009-52h	Biquad filter denominator damping coefficient	0.001–10.000	1.000	-	Real-time	" H09_en.81" on page 258

1.11 H0A Fault and Protection Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.00	200A-01h	Power input phase loss and failure protection	0: Enable 1: Disable	0	-	Real-time	*" H0A_en.00" on page 258*
H0A.01	200A-02h	Absolute position limit	0: Disabled 1: Enabled 2: Enabled after homing	0	-	Real-time	*" H0A_en.01" on page 258*
H0A.04	200A-05h	Motor overload protection gain	50–300	100	-	Real-time	*" H0A_en.04" on page 259*
H0A.08	200A-09h	Overspeed threshold	0rpm to 20000rpm	0	RPM	Real-time	*" H0A_en.08" on page 259*
H0A.09	200A-0Ah	Max. pulse input frequency in position control	100 kHz–16000 kHz	16000	kHz	At stop	*" H0A_en.09" on page 260*
H0A.10	200A-0Bh	Threshold of excessive local position deviation	0 to 4294967295	27486951	Encoder unit	Real-time	*" H0A_en.10" on page 260*
H0A.12	200A-0Dh	Runaway protection enable	0: Disable 1: Enable	1	-	Real-time	*" H0A_en.12" on page 260*
H0A.13	200A-0Eh	Angle auto-tuning mode	0: pre-positioning 1: Inching 6: Static hall 8: Closed-loop pre-positioning 9: Position locking	0	-	At stop	*" H0A_en.13" on page 261*
H0A.17	200A-12h	Reference pulse selection	0: Pulse unit 1: Reference unit	0	-	At stop	*" H0A_en.17" on page 261*
H0A.18	200A-13h	IGBT over-temperature threshold	120°C–175°C	140	°C	Real-time	*" H0A_en.18" on page 261*
H0A.19	200A-14h	Filter time constant of touch probe 1	0.00us–6.30us	2.00	us	Real-time	*" H0A_en.19" on page 262*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.20	200A-15h	Filter time constant of touch probe 2	0.00us–6.30us	2.00	us	Real-time	" H0A_en.20" on page 262
H0A.21	200A-16h	STO function display selection	0–7	0	-	Real-time	" H0A_en.21" on page 262
H0A.23	200A-18h	TZ signal filter time	0–31	15	25ns	At stop	" H0A_en.23" on page 263
H0A.24	200A-19h	Filter time constant of low-speed pulse input terminal	0–255	30	25ns	At stop	" H0A_en.24" on page 263
H0A.25	200A-1Ah	Speed display DO low-pass filter time	0 ms–5000 ms	0	ms	At stop	" H0A_en.25" on page 263
H0A.26	200A-1Bh	Motor overload detection	0: Show motor overload alarm (E909.0) and fault (E620.0) 1: Hide motor overload alarm (E909.0) and fault (E620.0)	0	-	Real-time	" H0A_en.26" on page 264
H0A.27	200A-1Ch	Average filter time for speed display DO	0 ms–100 ms	50	ms	At stop	" H0A_en.27" on page 264
H0A.29	200A-1Eh	Fully closed-loop encoder (ABZ) filter time	bit0: Fully closed loop encoder (ABZ) pulse signal filtering time bit8–bit15: Fully closed loop encoder (ABZ) wire breakage filter time	4111	25ns	At stop	" H0A_en.29" on page 264
H0A.30	200A-1Fh	Filter time constant of high-speed pulse input terminal	0 ns–255 ns	2	ns	At stop	" H0A_en.30" on page 265
H0A.32	200A-21h	Time threshold for locked motor overheat protection	10 ms–65535 ms	200	ms	Real-time	" H0A_en.32" on page 265
H0A.33	200A-22h	Locked motor overheat protection	0: Disabled 1: Enabled	1	-	Real-time	" H0A_en.33" on page 265

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.36	200A-25h	Encoder multi-turn overflow fault selection	0: Not hide 1: Hide	0	-	Real-time	*" H0A_en.36" on page 266*
H0A.40	200A-29h	Compensation function selection	bit0: Overtravel compensation 0: Enabled 1: Disabled bit1: Touch probe rising edge compensation 0: Disabled 1: Enabled bit2: Touch probe falling edge compensation 0: Disabled 1: Enabled bit3: Touch probe scheme 0: New scheme 1: Old scheme (same as SV660N) bit4: Probe 2 separate compensation time enable 0: Disabled 1: Enabled	6	-	At stop	*" H0A_en.40" on page 266*
H0A.41	200A-2Ah	Forward position of software position limit	-2147483648 to 2147483647	2147483647	Encoder unit	At stop	*" H0A_en.41" on page 267*
H0A.43	200A-2Ch	Reverse position of software position limit	-2147483648 to 2147483647	-2147483648	Encoder unit	At stop	*" H0A_en.43" on page 268*
H0A.49	200A-32h	Braking resistor overtemperature threshold	100°C–175°C	140	°C	Real-time	*" H0A_en.49" on page 268*
H0A.50	200A-33h	Encoder communication fault tolerance threshold	0–31	31	-	Real-time	*" H0A_en.50" on page 268*
H0A.51	200A-34h	Phase loss detection filter times	3–36	20	55ms	Real-time	*" H0A_en.51" on page 268*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.52	200A-35h	Encoder temperature protection threshold	0°C–175°C	120	°C	Real-time	*" H0A_en.52" on page 269*
H0A.53	200A-36h	Probe DI ON compensation time	-3000–3000	200	25ns	Real-time	*" H0A_en.53" on page 269*
H0A.54	200A-37h	Probe DI OFF compensation time	-3000–3000	1512	25ns	Real-time	*" H0A_en.54" on page 269*
H0A.55	200A-38h	Runaway current threshold	100.0% to 400.0%	200.0	%	Real-time	*" H0A_en.55" on page 270*
H0A.56	200A-39h	Fault reset delay	0 ms–60000 ms	10000	ms	Real-time	*" H0A_en.56" on page 270*
H0A.57	200A-3Ah	Runaway speed threshold	1 rpm to 1000 rpm	50	RPM	Real-time	*" H0A_en.57" on page 270*
H0A.58	200A-3Bh	Runaway speed filter time	0.1 ms–100.0 ms	2.0	ms	Real-time	*" H0A_en.58" on page 270*
H0A.59	200A-3Ch	Runaway protection detection time	10 ms–1000 ms	30	ms	Real-time	*" H0A_en.59" on page 271*
H0A.60	200A-3Dh	Black box function mode	0: Disable 1: Any fault 2: Designated fault 3: Triggered based on designated condition	1	-	Real-time	*" H0A_en.60" on page 271*
H0A.61	200A-3Eh	Designated fault code	0.0–6553.5	0.0	-	Real-time	*" H0A_en.61" on page 271*
H0A.62	200A-3Fh	Trigger source	0–25	0	-	Real-time	*" H0A_en.62" on page 272*
H0A.63	200A-40h	Trigger level	-2147483648–2147483647	0	-	Real-time	*" H0A_en.63" on page 272*
H0A.65	200A-42h	Trigger level	0: Rising edge 1: Equal 2: Falling edge 3: Edge-triggered	0	-	Real-time	*" H0A_en.65" on page 272*
H0A.66	200A-43h	Trigger position	0% to 100%	75	%	Real-time	*" H0A_en.66" on page 272*
H0A.67	200A-44h	Sampling frequency	0: Current loop 1: Position loop 2: Main cycle	0	-	Real-time	*" H0A_en.67" on page 273*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.70	200A-47h	Overspeed threshold 2	0rpm to 20000rpm	0	RPM	Real-time	" H0A_en.70" on page 273
H0A.71	200A-48h	Internal function switch	0–65535	4098	-	Real-time	" H0A_en.71" on page 273
H0A.72	200A-49h	Maximum stop time in ramp-to-stop	0 ms–65535 ms	10000	ms	At stop	" H0A_en.72" on page 274
H0A.73	200A-4Ah	STO 24 V disconnection filter time	1 ms–5 ms	1	ms	Real-time	" H0A_en.73" on page 275
H0A.74	200A-4Bh	Filter time for two inconsistent STO channels	1 ms–1000 ms	100	ms	Real-time	" H0A_en.74" on page 275
H0A.75	200A-4Ch	Servo OFF delay after STO triggered	0 ms–25 ms	20	ms	Real-time	" H0A_en.75" on page 275
H0A.90	200A-5Bh	Speed display low-pass filter time	0 ms–100 ms	0	ms	At stop	" H0A_en.90" on page 276
H0A.91	200A-5Ch	Moving average filter time for torque display values	0 ms–100 ms	0	ms	At stop	" H0A_en.91" on page 276
H0A.92	200A-5Dh	Moving average filter time for position display values	0 ms–100 ms	0	ms	At stop	" H0A_en.92" on page 276

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.93	200A-5Eh	Low-pass filter time for voltage display values	0 ms–250 ms	0	ms	At stop	" H0A_en.93" on page 276
H0A.94	200A-5Fh	Low-pass filter time for thermal display values	0 ms–250 ms	0	ms	At stop	" H0A_en.94" on page 277

1.12 H0b Monitoring Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.00	200b-01h	Motor speed actual value	-32767rpm to 32767rpm	0	RPM	Unchangeable	" H0b_en.00" on page 277
H0b.01	200b-02h	Speed reference	-32767rpm to 32767rpm	0	RPM	Unchangeable	" H0b_en.01" on page 277
H0b.02	200b-03h	Internal torque reference	-500.0% to 500.0%	0.0	%	Unchangeable	" H0b_en.02" on page 278
H0b.03	200b-04h	Input (DI) signal monitoring	0–65535	0	-	Unchangeable	" H0b_en.03" on page 278
H0b.05	200b-06h	Output (DO) signal monitoring	0–65535	0	-	Unchangeable	" H0b_en.05" on page 278
H0b.07	200b-08h	Absolute position counter	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.07" on page 278
H0b.09	200b-0Ah	Mechanical angle	0.0° to 360.0°	0.0	°	Unchangeable	" H0b_en.09" on page 279
H0b.10	200b-0Bh	Electrical angle	0.0° to 360.0°	0.0	°	Unchangeable	" H0b_en.10" on page 279
H0b.12	200b-0Dh	Average load ratio	0.0% to 800.0%	0.0	%	Unchangeable	" H0b_en.12" on page 280

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.13	200b-0Eh	Input reference counter	-2147483648p to 2147483647p	0	p	Unchangeable	*" H0b_en.13" on page 280*
H0b.15	200b-10h	Position following error (encoder unit)	-2147483648p to 2147483647p	0	p	Unchangeable	*" H0b_en.15" on page 280*
H0b.17	200b-12h	Feedback pulse counter	-2147483648p to 2147483647p	0	p	Unchangeable	*" H0b_en.17" on page 281*
H0b.19	200b-14h	Total power-on time	0.0s–429496729.5s	0.0	s	Unchangeable	*" H0b_en.19" on page 281*
H0b.21	200b-16h	Displayed AI1 voltage	-12.00 V–12.00 V	0.00	V	Unchangeable	*" H0b_en.21" on page 281*
H0b.22	200b-17h	Displayed AI2 voltage	-12.00 V–12.00 V	0.00	V	Unchangeable	*" H0b_en.22" on page 282*
H0b.24	200b-19h	Phase current RMS value	0.0 A–6553.5 A	0.0	A	Unchangeable	*" H0b_en.24" on page 282*
H0b.25	200b-1Ah	Angle obtained upon voltage injection auto-tuning	0.0° to 360.0°	0.0	°	Unchangeable	*" H0b_en.25" on page 282*
H0b.26	200b-1Bh	Bus voltage	0.0 V–6553.5 V	0.0	V	Unchangeable	*" H0b_en.26" on page 282*
H0b.27	200b-1Ch	Module temperature	-20°C–200°C	0	°C	Unchangeable	*" H0b_en.27" on page 283*
H0b.28	200b-1Dh	Absolute encoder fault information given by FPGA	0–65535	0	-	Unchangeable	*" H0b_en.28" on page 283*
H0b.29	200b-1Eh	Axis status information given by FPGA	0–65535	0	-	Unchangeable	*" H0b_en.29" on page 283*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.30	200b-1Fh	Axis fault information given by FPGA	0–65535	0	-	Unchangeable	*" H0b_en.30" on page 284*
H0b.31	200b-20h	Encoder fault information	0–65535	0	-	Unchangeable	*" H0b_en.31" on page 284*
H0b.33	200b-22h	Fault log	0: Present fault 1: Last fault 2: 2nd to last fault 3: 3rd to last fault 4: 4th to last fault 5: 5th to last fault 6: 6th to last fault 7: 7th to last fault 8: 8th to last fault 9: 9th to last fault 10: 10th to last fault 11: 11th to last fault 12: 12th to last fault 13: 13th to last fault 14: 14th to last fault 15: 15th to last fault 16: 16th to last fault 17: 17th to last fault 18: 18th to last fault 19: 19th to last fault	0	-	Real-time	*" H0b_en.33" on page 284*
H0b.34	200b-23h	Fault code of the selected fault	0–65535	0	-	Unchangeable	*" H0b_en.34" on page 285*
H0b.35	200b-24h	Timestamp of the selected fault	0.0s–429496729.5s	0.0	s	Unchangeable	*" H0b_en.35" on page 285*
H0b.37	200b-26h	Motor speed upon occurrence of the selected fault	-32767rpm to 32767rpm	0	RPM	Unchangeable	*" H0b_en.37" on page 286*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.38	200b-27h	Motor phase U current upon occurrence of the selected fault	-3276.7 A–3276.7 A	0.0	A	Unchangeable	" H0b_en.38" on page 286
H0b.39	200b-28h	Motor phase V current upon occurrence of the selected fault	-3276.7 A–3276.7 A	0.0	A	Unchangeable	" H0b_en.39" on page 286
H0b.40	200b-29h	Bus voltage upon occurrence of the selected fault	0.0 V–6553.5 V	0.0	V	Unchangeable	" H0b_en.40" on page 286
H0b.41	200b-2Ah	Input terminal state on selected fault	0–65535	0	-	Unchangeable	" H0b_en.41" on page 287
H0b.43	200b-2Ch	Output terminal status upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.43" on page 287
H0b.45	200b-2Eh	Internal fault code	0–65535	0	-	Unchangeable	" H0b_en.45" on page 287
H0b.46	200b-2Fh	Absolute encoder fault information given by FPGA upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.46" on page 288

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.47	200b-30h	System status information given by FPGA upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.47" on page 288
H0b.48	200b-31h	System fault information given by FPGA upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.48" on page 288
H0b.49	200b-32h	Encoder fault information upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.49" on page 288
H0b.51	200b-34h	Internal fault code upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.51" on page 289
H0b.52	200b-35h	FPGA timeout fault standard bit upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.52" on page 289
H0b.53	200b-36h	Position following error (reference unit)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.53" on page 289

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.55	200b-38h	Motor speed actual value	-2147483648.0rpm to 2147483647.0rpm	0.0	RPM	Unchangeable	" H0b_en.55" on page 290
H0b.57	200b-3Ah	Control circuit bus voltage	0.0 V–6553.5 V	0.0	V	Unchangeable	" H0b_en.57" on page 290
H0b.58	200b-3Bh	Mechanical absolute position (low 32 bits)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.58" on page 290
H0b.60	200b-3Dh	Mechanical absolute position (high 32 bits)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.60" on page 290
H0b.63	200b-40h	NotRdy state	0: Normal 1: Control circuit error 2: Main circuit power input error 3: Bus undervoltage 4: Soft start failed 5: Encoder initialization undone 6: Short circuit to ground failed 7: Others 9: Fully closed-loop encoder initialization not completed	0	-	Unchangeable	" H0b_en.63" on page 291
H0b.64	200b-41h	Real-time input position reference counter	-2147483648 to 2147483647	0	Reference unit	Unchangeable	" H0b_en.64" on page 291
H0b.66	200b-43h	Encoder temperature	-32768°C–32767°C	0	°C	Unchangeable	" H0b_en.66" on page 292
H0b.67	200b-44h	Load rate of braking resistor	0.0% to 200.0%	0.0	%	Unchangeable	" H0b_en.67" on page 292
H0b.70	200b-47h	Number of absolute encoder revolutions	-32768Rev to 32767Rev	0	Rev	Unchangeable	" H0b_en.70" on page 292
H0b.71	200b-48h	Single-turn position fed back by the absolute encoder	0p to 2147483647p	0	p	Unchangeable	" H0b_en.71" on page 293

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.74	200b-4Bh	System fault information given by FPGA	0–65535	0	-	Unchangeable	" H0b_en.74" on page 293
H0b.77	200b-4Eh	Encoder position (low 32 bits)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.77" on page 293
H0b.79	200b-50h	Encoder position (high 32 bits)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.79" on page 293
H0b.81	200b-52h	Single-turn position of the rotary load (low 32 bits)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.81" on page 294
H0b.83	200b-54h	Single-turn position of the rotary load (high 32 bits)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.83" on page 294
H0b.85	200b-56h	Single-turn position of the rotary load (reference unit)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.85" on page 294
H0b.87	200b-58h	IGBT junction temperature	0–200	0	-	Unchangeable	" H0b_en.87" on page 295
H0b.90	200b-5Bh	Group No. of the abnormal parameter	0–65535	0	-	Unchangeable	" H0b_en.90" on page 295
H0b.91	200b-5Ch	Offset within the group of the abnormal parameter	0–65535	0	-	Unchangeable	" H0b_en.91" on page 295
H0b.93	200b-5Eh	Closed loop state	0: Half closed loop 1: Fully closed loop	0	-	Unchangeable	" H0b_en.93" on page 295
H0b.94	200b-5Fh	Individual power-on time	0.0s–429496729.5s	0.0	s	Unchangeable	" H0b_en.94" on page 296

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.96	200b-61h	Individual power-on time upon occurrence of the selected fault	0.0s–429496729.5s	0.0	s	Unchangeable	" H0b_en.96" on page 296
H0b.98	200b-63h	Dynamic braking resistor load rate	0.0% to 200.0%	0.0	%	Unchangeable	" H0b_en.98" on page 296

1.13 H0C Fault and Protection Parameters 2

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0C.53	200C-36h	Probe DI ON compensation time 2	-3000–3000	200	25ns	Real-time	" H0C_en.53" on page 296
H0C.54	200C-37h	Probe DI OFF compensation time 2	-3000–3000	1512	25ns	Real-time	" H0C_en.54" on page 297
H0C.71	200C-48h	Internal function switch	0–65535	0	-	Real-time	" H0C_en.71" on page 297

1.14 H0d Auxiliary Function Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0d.00	200d-01h	Software Reset	0: No operation 1: Enable	0	-	At stop	" H0d_en.00" on page 297
H0d.01	200d-02h	Fault Reset	0: No operation 1: Enable	0	-	At stop	" H0d_en.01" on page 298
H0d.02	200d-03h	Inertia auto-tuning enable	0–65	0	-	Real-time	" H0d_en.02" on page 298
H0d.04	200d-05h	Read/write in encoder ROM	0: No operation 1: Write ROM 2: Read ROM 3: ROM failure	0	-	At stop	" H0d_en.04" on page 298

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0d.05	200d-06h	Emergency stop	0: No operation 1: Emergency stop	0	-	Real-time	" H0d_en.05" on page 299
H0d.06	200d-07h	Current loop auto-tuning test	0: No operation 1: Enable current loop auto-tuning 2: Enable current loop step test (static) 3: Enable current loop step test	0	-	At stop	" H0d_en.06" on page 299
H0d.10	200d-0Bh	Analog channel auto adjusting	0: No operation 1: Adjusted through AI1 2: Adjusted through AI2	0	-	At stop	" H0d_en.10" on page 300
H0d.12	200d-0Dh	Phase U/V current balance correction	0: Disabled 1: Enabled	0	-	At stop	" H0d_en.12" on page 300
H0d.17	200d-12h	Forced DI/DO enable switch	bit0: Forced DI enable switch 0: Disabled 1: Enabled bit1: Forced DO enable switch 0: Disabled 1: Enabled	0	-	Real-time	" H0d_en.17" on page 300
H0d.18	200d-13h	Forced DI value	0–255	255	-	Real-time	" H0d_en.18" on page 301
H0d.19	200d-14h	Forced DO value	0–31	0	-	Real-time	" H0d_en.19" on page 301
H0d.20	200d-15h	Absolute encoder reset	0: No operation 1: Reset 2: Reset the fault and multi-turn data	0	-	At stop	" H0d_en.20" on page 301
H0d.23	200d-18h	Motor cogging torque ripple auto-tuning enable	0: No auto-tuning 1: Enabled	0	-	At stop	" H0d_en.23" on page 302
H0d.29	200d-1Eh	Motor parameter auto-tuning	0: No operation 1: Enabled	0	-	At stop	" H0d_en.29" on page 302

1.15 H0E Communication Function Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.00	200E-01h	Node address	1–127	1	-	At stop	" H0E_en.00" on page 302
H0E.01	200E-02h	Save objects written through communication to e2prom	0: Not save 1: Save parameters 2: Save object dictionaries 3: Save parameters and object dictionaries 4: Save object dictionaries written before communication (OP) 255: Determine through H0E03 and H0E04	1	-	Real-time	" H0E_en.01" on page 303
H0E.03	200E-04h	Save objects written through software (commissioning protocol) to e2prom	0: Do not save 1: Save	1	-	Real-time	" H0E_en.03" on page 303
H0E.04	200E-05h	Save objects written through communication to e2prom (excluding commissioning protocol)	0: Do not save 1: Save	0	-	Real-time	" H0E_en.04" on page 303
H0E.07	200E-08h	Object dictionary unit selection	0: Reference unit system (p/s, p/s2) 1: User unit system (0.01 RPM, ms)	0	-	At stop	" H0E_en.07" on page 304
H0E.10	200E-0Bh	CAN selection	0: Pulse/Axis control command 1: Enhanced axis control command 2: CANopen	0	-	At stop	" H0E_en.10" on page 304
H0E.11	200E-0Ch	CAN baud rate	0: 20 kbps 1: 50 kbps 2: 100 kbps 3: 125 kbps 4: 250 kbps 5: 500 kbps 6: 1 Mbps 1 Mbps - non-standard	5	-	At stop	" H0E_en.11" on page 305

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.12	200E-0Dh	Excessive IP position command increment count	1–30	20	-	Real-time	" H0E_en.12" on page 305
H0E.13	200E-0Eh	CANopen sync period error limit	0: 1/4 1: 1/2 2: 3/4 3: 1 4: 2 5: Disabled	0	-	Real-time	" H0E_en.13" on page 305
H0E.14	200E-0Fh	CANopen communication state	0–9	0	-	Unchangeable	" H0E_en.14" on page 306
H0E.17	200E-12h	Get the count of received NMT frames with incorrect length	0–65535	0	-	Unchangeable	" H0E_en.17" on page 306
H0E.18	200E-13h	Get the count of received NMT frames with incorrect command	0–65535	0	-	Unchangeable	" H0E_en.18" on page 306
H0E.19	200E-14h	Get received heartbeat frames of wrong length	0–65535	0	-	Unchangeable	" H0E_en.19" on page 307
H0E.80	200E-51h	Modbus baud rate	0: 300 bps 1: 600 bps 2: 1200 bps 3: 2400 bps 4: 4800 bps 5: 9600 bps 6: 19200 bps 7: 38400 bps 8: 57600 bps 9: 115200 bps	9	-	Real-time	" H0E_en.80" on page 307
H0E.81	200E-52h	Modbus data format	0: No parity, 2 stop bits (N-2) 1: Even parity, 1 stop bit (E-1) 2: Odd parity, 1 stop bit (O-1) 3: No parity, 1 stop bit (N-1)	3	-	Real-time	" H0E_en.81" on page 307

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.82	200E-53h	Modbus response delay	0 ms–20 ms	0	ms	Real-time	" H0E_en.82" on page 308
H0E.83	200E-54h	Modbus communication timeout	0 ms–600 ms	0	ms	Real-time	" H0E_en.83" on page 308
H0E.84	200E-55h	Sequence of Modbus communication data bits	0: High bits before low bits 1: Low bits before high bits	1	-	Real-time	" H0E_en.84" on page 308
H0E.90	200E-5Bh	Communication version	0.00–655.35	0.00	-	Unchangeable	" H0E_en.90" on page 309
H0E.97	200E-62h	Communication monitoring parameter 1	0–65535	0	-	Real-time	" H0E_en.97" on page 309
H0E.98	200E-63h	Communication monitoring parameter 2	0–65535	0	-	Real-time	" H0E_en.98" on page 309

1.16 H0F Fully Closed-loop Parameters

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H0F.00	200F-01h	Encoder feedback mode	0: Internal encoder feedback 1: External encoder feedback 2: Inner/Outer loop switchover	0	-	Real-time	" H0F_en.00" on page 310
H0F.01	200F-02h	External encoder usage mode	0: Standard operating direction 1: Reverse operating direction	0	-	Real-time	" H0F_en.01" on page 310
H0F.04	200F-05h	External encoder pulses per revolution	1–2147483647	10000	-	At stop	" H0F_en.04" on page 311
H0F.08	200F-09h	Excessive deviation threshold in compound control mode	0–2147483647	1000	-	Real-time	" H0F_en.08" on page 312

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H0F.10	200F-0Bh	Clear deviation in compound control mode	0 Rev to 100 Rev	1	Rev	Real-time	*" H0F_en.10" on page 312*
H0F.13	200F-0Eh	Compound vibration suppression filter time	0.0 ms–6553.5 ms	0.0	ms	At stop	*" H0F_en.13" on page 312*
H0F.16	200F-11h	Pulse deviation display in compound control mode	-2147483648 to 2147483647	0	Encoder unit	Unchangeable	*" H0F_en.16" on page 313*
H0F.18	200F-13h	Internal position pulse feedback display	-2147483648 to 2147483647	0	Encoder unit	Unchangeable	*" H0F_en.18" on page 313*
H0F.20	200F-15h	External position pulse feedback display	-2147483648 to 2147483647	0	Encoder unit	Unchangeable	*" H0F_en.20" on page 313*
H0F.22	200F-17h	External encoder phase Z detection invalid (quadrature pulse feedback)	0: Detected 1: Not detected	0	-	Real-time	*" H0F_en.22" on page 314*
H0F.25	200F-1Ah	Set the source of touch probe Z signal in fully closed-loop mode.	0: Motor Z signal 1: External feedback Z signal	0	-	Real-time	*" H0F_en.25" on page 314*

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H0F.45	200F-2Eh	Positioning completed/ Position deviation threshold in fully closed-loop mode	0: Threshold scaled to outer loop unit 1: Same threshold used for inner and outer loops	0	-	At stop	" H0F_en.45" on page 314
H0F.46	200F-2Fh	Fully closed-loop speed feedback selection	0: Internal encoder feedback 1: External encoder feedback	0	-	At stop	" H0F_en.46" on page 315

1.17 H11 Multi-Position Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.00	2011-01h	Multi-position running mode	0: Single run (number of displacements selected in H11.01) 1: Cyclic operation (number of displacement selected in H11.01) 2: DI-based operation (selected by DI) 3: Sequential operation 5: Axis-controlled continuous operation	1	-	At stop	" H11_en.00" on page 315
H11.01	2011-02h	Number of displacement references in multi-position mode	1–16	1	-	At stop	" H11_en.01" on page 319
H11.02	2011-03h	Starting displacement No. after pause	0: Continue to execute the unexecuted displacements 1: Start from displacement 1	0	-	At stop	" H11_en.02" on page 319
H11.03	2011-04h	Interval time unit	0: ms 1: s	0	-	At stop	" H11_en.03" on page 320
H11.04	2011-05h	Displacement reference type	0: Relative displacement reference 1: Absolute displacement reference	0	-	Real-time	" H11_en.04" on page 320

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.05	2011-06h	Starting displacement No. in sequential operation	0–16	0	-	At stop	*" H11_en.05" on page 321*
H11.09	2011-0Ah	Deceleration upon axis control OFF	0 ms–65535 ms	65535	ms	Real-time	*" H11_en.09" on page 321*
H11.10	2011-0Bh	Starting speed of displacement 1	0 RPM to 6000 RPM	0	RPM	Real-time	*" H11_en.10" on page 321*
H11.11	2011-0Ch	Stop speed of displacement 1	0 RPM to 6000 RPM	0	RPM	Real-time	*" H11_en.11" on page 322*
H11.12	2011-0Dh	Displacement 1	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.12" on page 322*
H11.14	2011-0Fh	Max. speed of displacement 1	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.14" on page 322*
H11.15	2011-10h	Acc/Dec time of displacement 1	0 ms–65535 ms	10	ms	Real-time	*" H11_en.15" on page 323*
H11.16	2011-11h	Interval time after displacement 1	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.16" on page 323*
H11.17	2011-12h	Displacement 2	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.17" on page 324*
H11.19	2011-14h	Max. speed of displacement 2	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.19" on page 324*
H11.20	2011-15h	Acc/Dec time of displacement 2	0 ms–65535 ms	10	ms	Real-time	*" H11_en.20" on page 324*
H11.21	2011-16h	Interval time after displacement 2	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.21" on page 324*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.22	2011-17h	Displacement 3	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.22" on page 325
H11.24	2011-19h	Max. speed of displacement 3	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.24" on page 325
H11.25	2011-1Ah	Acc/Dec time of displacement 3	0 ms–65535 ms	10	ms	Real-time	" H11_en.25" on page 325
H11.26	2011-1Bh	Interval time after displacement 3	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.26" on page 325
H11.27	2011-1Ch	Displacement 4	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.27" on page 326
H11.29	2011-1Eh	Max. speed of displacement 4	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.29" on page 326
H11.30	2011-1Fh	Acc/Dec time of displacement 4	0 ms–65535 ms	10	ms	Real-time	" H11_en.30" on page 326
H11.31	2011-20h	Interval time after displacement 4	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.31" on page 326
H11.32	2011-21h	Displacement 5	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.32" on page 327
H11.34	2011-23h	Max. speed of displacement 5	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.34" on page 327
H11.35	2011-24h	Acc/Dec time of displacement 5	0 ms–65535 ms	10	ms	Real-time	" H11_en.35" on page 327
H11.36	2011-25h	Interval time after displacement 5	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.36" on page 328

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.37	2011-26h	Displacement 6	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.37" on page 328
H11.39	2011-28h	Max. speed of displacement 6	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.39" on page 328
H11.40	2011-29h	Acc/Dec time of displacement 6	0 ms–65535 ms	10	ms	Real-time	" H11_en.40" on page 328
H11.41	2011-2Ah	Interval time after displacement 6	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.41" on page 329
H11.42	2011-2Bh	Displacement 7	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.42" on page 329
H11.44	2011-2Dh	Max. speed of displacement 7	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.44" on page 329
H11.45	2011-2Eh	Acc/Dec time of displacement 7	0 ms–65535 ms	10	ms	Real-time	" H11_en.45" on page 329
H11.46	2011-2Fh	Interval time after displacement 7	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.46" on page 330
H11.47	2011-30h	Displacement 8	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.47" on page 330
H11.49	2011-32h	Max. speed of displacement 8	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.49" on page 330
H11.50	2011-33h	Acc/Dec time of displacement 8	0 ms–65535 ms	10	ms	Real-time	" H11_en.50" on page 331
H11.51	2011-34h	Interval time after displacement 8	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.51" on page 331

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.52	2011-35h	Displacement 9	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.52" on page 331
H11.54	2011-37h	Max. speed of displacement 9	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.54" on page 331
H11.55	2011-38h	Acc/Dec time of displacement 9	0 ms–65535 ms	10	ms	Real-time	" H11_en.55" on page 332
H11.56	2011-39h	Interval time after displacement 9	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.56" on page 332
H11.57	2011-3Ah	Displacement 10	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.57" on page 332
H11.59	2011-3Ch	Max. speed of displacement 10	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.59" on page 332
H11.60	2011-3Dh	Acc/Dec time of displacement 10	0 ms–65535 ms	10	ms	Real-time	" H11_en.60" on page 333
H11.61	2011-3Eh	Interval time after displacement 10	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.61" on page 333
H11.62	2011-3Fh	Displacement 11	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.62" on page 333
H11.64	2011-41h	Max. speed of displacement 11	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.64" on page 334
H11.65	2011-42h	Acc/Dec time of displacement 11	0 ms–65535 ms	10	ms	Real-time	" H11_en.65" on page 334
H11.66	2011-43h	Interval time after displacement 11	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.66" on page 334

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.67	2011-44h	Displacement 12	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.67" on page 334
H11.69	2011-46h	Max. speed of displacement 12	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.69" on page 335
H11.70	2011-47h	Acc/Dec time of displacement 12	0 ms–65535 ms	10	ms	Real-time	" H11_en.70" on page 335
H11.71	2011-48h	Interval time after displacement 12	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.71" on page 335
H11.72	2011-49h	Displacement 13	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.72" on page 335
H11.74	2011-4Bh	Max. speed of displacement 13	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.74" on page 336
H11.75	2011-4Ch	Acc/Dec time of displacement 13	0 ms–65535 ms	10	ms	Real-time	" H11_en.75" on page 336
H11.76	2011-4Dh	Interval time after displacement 13	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.76" on page 336
H11.77	2011-4Eh	Displacement 14	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.77" on page 337
H11.79	2011-50h	Max. speed of displacement 14	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.79" on page 337
H11.80	2011-51h	Acc/Dec time of displacement 14	0 ms–65535 ms	10	ms	Real-time	" H11_en.80" on page 337
H11.81	2011-52h	Interval time after displacement 14	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.81" on page 337

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.82	2011-53h	Displacement 15	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.82" on page 338
H11.84	2011-55h	Max. speed of displacement 15	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.84" on page 338
H11.85	2011-56h	Acc/Dec time of displacement 15	0 ms–65535 ms	10	ms	Real-time	" H11_en.85" on page 338
H11.86	2011-57h	Interval time after displacement 15	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.86" on page 338
H11.87	2011-58h	Displacement 16	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.87" on page 339
H11.89	2011-5Ah	Max. speed of displacement 16	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.89" on page 339
H11.90	2011-5Bh	Acc/Dec time of displacement 16	0 ms–65535 ms	10	ms	Real-time	" H11_en.90" on page 339
H11.91	2011-5Ch	Interval time after displacement 16	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.91" on page 339

1.18 H12 Multi-Speed Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.00	2012-01h	Multi-speed operation mode	0: Individual operation (number of speeds selected in H12.01) 1: Cyclic operation (number of speeds selected in H12.01) 2: DI-based operation	1	-	At stop	*"H12_en.00" on page 340*
H12.01	2012-02h	Number of speed references in multi-speed mode	1–16	16	-	At stop	*"H12_en.01" on page 341*
H12.02	2012-03h	Operating time unit	0: s 1: min	0	-	At stop	*"H12_en.02" on page 342*
H12.03	2012-04h	Acceleration time 1	0 ms–65535 ms	10	ms	Real-time	*"H12_en.03" on page 342*
H12.04	2012-05h	Deceleration time 1	0 ms–65535 ms	10	ms	Real-time	*"H12_en.04" on page 343*
H12.05	2012-06h	Acceleration time 2	0 ms–65535 ms	50	ms	Real-time	*"H12_en.05" on page 343*
H12.06	2012-07h	Deceleration time 2	0 ms–65535 ms	50	ms	Real-time	*"H12_en.06" on page 343*
H12.07	2012-08h	Acceleration time 3	0 ms–65535 ms	100	ms	Real-time	*"H12_en.07" on page 344*
H12.08	2012-09h	Deceleration time 3	0 ms–65535 ms	100	ms	Real-time	*"H12_en.08" on page 344*
H12.09	2012-0Ah	Acceleration time 4	0 ms–65535 ms	150	ms	Real-time	*"H12_en.09" on page 344*
H12.10	2012-0Bh	Deceleration time 4	0 ms–65535 ms	150	ms	Real-time	*"H12_en.10" on page 345*
H12.20	2012-15h	1st speed reference	-10000 RPM to +10000 RPM	0	RPM	Real-time	*"H12_en.20" on page 345*
H12.21	2012-16h	Operating time of speed 1	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.21" on page 345*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.22	2012-17h	1st speed rise/drop and curve smoothing parameter time	bit0-bit7: Speed rise and drop time 0: Zero acc and dec time 1: Acc and dec time 1 2: Acc and dec time 2 3: Acc and dec time 3 4: Acc and dec time 4 bit8-bit15: S curve smoothing parameter 1: Smoothing parameter 1 2: Smoothing parameter 2 3: Smoothing parameter 3 4: Smoothing parameter 4 5: Smoothing parameter 5 6: Smoothing parameter 6 7: Smoothing parameter 7 8: Smoothing parameter 8	256	-	Real-time	*"H12_en.22" on page 346*
H12.23	2012-18h	Reference 2	-10000 RPM to +10000 RPM	100	RPM	Real-time	*"H12_en.23" on page 348*
H12.24	2012-19h	Operating time of speed 2	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.24" on page 348*
H12.25	2012-1Ah	2nd speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*"H12_en.25" on page 348*
H12.26	2012-1Bh	Reference 3	-10000 RPM to +10000 RPM	300	RPM	Real-time	*"H12_en.26" on page 349*
H12.27	2012-1Ch	Operating time of speed 3	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.27" on page 349*
H12.28	2012-1Dh	3nd speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*"H12_en.28" on page 349*
H12.29	2012-1Eh	Reference 4	-10000 RPM to +10000 RPM	500	RPM	Real-time	*"H12_en.29" on page 349*
H12.30	2012-1Fh	Operating time of speed 4	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.30" on page 350*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.31	2012-20h	4th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.31" on page 350
H12.32	2012-21h	Reference 5	-10000 RPM to +10000 RPM	700	RPM	Real-time	"H12_en.32" on page 350
H12.33	2012-22h	Operating time of speed 5	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.33" on page 350
H12.34	2012-23h	5th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.34" on page 351
H12.35	2012-24h	Reference 6	-10000 RPM to +10000 RPM	900	RPM	Real-time	"H12_en.35" on page 351
H12.36	2012-25h	Operating time of speed 6	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.36" on page 351
H12.37	2012-26h	6th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.37" on page 352
H12.38	2012-27h	Reference 7	-10000 RPM to +10000 RPM	600	RPM	Real-time	"H12_en.38" on page 352
H12.39	2012-28h	Operating time of speed 7	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.39" on page 352
H12.40	2012-29h	7th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.40" on page 352
H12.41	2012-2Ah	Reference 8	-10000 RPM to +10000 RPM	300	RPM	Real-time	"H12_en.41" on page 353

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.42	2012-2Bh	Operating time of speed 8	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.42" on page 353
H12.43	2012-2Ch	8th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.43" on page 353
H12.44	2012-2Dh	Reference 9	-10000 RPM to +10000 RPM	100	RPM	Real-time	"H12_en.44" on page 353
H12.45	2012-2Eh	Operating time of speed 9	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.45" on page 354
H12.46	2012-2Fh	9th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.46" on page 354
H12.47	2012-30h	Reference 10	-10000 RPM to +10000 RPM	-100	RPM	Real-time	"H12_en.47" on page 354
H12.48	2012-31h	Operating time of speed 10	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.48" on page 355
H12.49	2012-32h	10th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.49" on page 355
H12.50	2012-33h	Reference 11	-10000 RPM to +10000 RPM	-300	RPM	Real-time	"H12_en.50" on page 355
H12.51	2012-34h	Operating time of speed 11	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.51" on page 355
H12.52	2012-35h	11th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.52" on page 356

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.53	2012-36h	Reference 12	-10000 RPM to +10000 RPM	-500	RPM	Real-time	*"H12_en.53" on page 356*
H12.54	2012-37h	Operating time of speed 12	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.54" on page 356*
H12.55	2012-38h	12th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*"H12_en.55" on page 356*
H12.56	2012-39h	Reference 13	-10000 RPM to +10000 RPM	-700	RPM	Real-time	*"H12_en.56" on page 357*
H12.57	2012-3Ah	Operating time of speed 13	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.57" on page 357*
H12.58	2012-3Bh	13th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*"H12_en.58" on page 357*
H12.59	2012-3Ch	Reference 14	-10000 RPM to +10000 RPM	-900	RPM	Real-time	*"H12_en.59" on page 357*
H12.60	2012-3Dh	Operating time of speed 14	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.60" on page 358*
H12.61	2012-3Eh	14th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*"H12_en.61" on page 358*
H12.62	2012-3Fh	Reference 15	-10000 RPM to +10000 RPM	-600	RPM	Real-time	*"H12_en.62" on page 358*
H12.63	2012-40h	Operating time of speed 15	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.63" on page 359*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.64	2012-41h	15th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.64" on page 359
H12.65	2012-42h	Reference 16	-10000 RPM to +10000 RPM	-300	RPM	Real-time	"H12_en.65" on page 359
H12.66	2012-43h	Operating time of speed 16	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.66" on page 359
H12.67	2012-44h	16th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.67" on page 360

1.19 H17 Virtual DI/DO Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.90	2017-5Bh	Communication VDI enable	0: Disabled 1: Enabled	0	-	At stop	"H17_en.90" on page 360
H17.91	2017-5Ch	VDI default value after power-on	bit0: VDI1 bit1: VDI2 bit2: VDI3 bit3: VDI4 bit4: VDI5 bit5: VDI6 bit6: VDI7 bit7: VDI8 bit8: VDI9 bit9: VDI10 bit10: VDI11 bit11: VDI12 bit12: VDI13 bit13: VDI14 bit14: VDI15 bit15: VDI16	0	-	Real-time	"H17_en.91" on page 360

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.00	2017-01h	VDI1 function	See *" H17_en.00" on page 361* for details.	0	-	Real-time	*" H17_en.00" on page 361*
H17.01	2017-02h	VDI1 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.01" on page 363*
H17.02	2017-03h	VDI2 function	See H17.00.	0	-	Real-time	*" H17_en.02" on page 363*
H17.03	2017-04h	VDI2 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.03" on page 364*
H17.04	2017-05h	VDI3 function	See H17.00.	0	-	Real-time	*" H17_en.04" on page 364*
H17.05	2017-06h	VDI3 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.05" on page 364*
H17.06	2017-07h	VDI4 function	See H17.00.	0	-	Real-time	*" H17_en.06" on page 364*
H17.07	2017-08h	VDI4 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.07" on page 365*
H17.08	2017-09h	VDI5 function	See H17.00.	0	-	Real-time	*" H17_en.08" on page 365*
H17.09	2017-0Ah	VDI5 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.09" on page 365*
H17.10	2017-0Bh	VDI6 function	See H17.00.	0	-	Real-time	*" H17_en.10" on page 365*
H17.11	2017-0Ch	VDI6 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.11" on page 366*
H17.12	2017-0Dh	VDI7 function	See H17.00.	0	-	Real-time	*" H17_en.12" on page 366*
H17.13	2017-0Eh	VDI7 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.13" on page 366*
H17.14	2017-0Fh	VDI8 function	See H17.00.	0	-	Real-time	*" H17_en.14" on page 367*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.15	2017-10h	VDI8 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.15" on page 367*
H17.16	2017-11h	VDI9 function	See H17.00.	0	-	Real-time	*" H17_en.16" on page 367*
H17.17	2017-12h	VDI9 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.17" on page 367*
H17.18	2017-13h	VDI10 function	See H17.00.	0	-	Real-time	*" H17_en.18" on page 368*
H17.19	2017-14h	VDI10 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.19" on page 368*
H17.20	2017-15h	VDI11 function	See H17.00.	0	-	Real-time	*" H17_en.20" on page 368*
H17.21	2017-16h	VDI11 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.21" on page 368*
H17.22	2017-17h	VDI12 function	See H17.00.	0	-	Real-time	*" H17_en.22" on page 369*
H17.23	2017-18h	VDI12 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.23" on page 369*
H17.24	2017-19h	VDI13 function	See H17.00.	0	-	Real-time	*" H17_en.24" on page 369*
H17.25	2017-1Ah	VDI13 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.25" on page 370*
H17.26	2017-1Bh	VDI14 function	See H17.00.	0	-	Real-time	*" H17_en.26" on page 370*
H17.27	2017-1Ch	VDI14 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.27" on page 370*
H17.28	2017-1Dh	VDI15 function	See H17.00.	0	-	Real-time	*" H17_en.28" on page 370*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.29	2017-1Eh	VDI15 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.29" on page 371*
H17.30	2017-1Fh	VDI16 function	See H17.00.	0	-	Real-time	*" H17_en.30" on page 371*
H17.31	2017-20h	VDI16 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.31" on page 371*
H17.92	2017-5Dh	Communication VDO enable	0: Disabled 1: Enabled	0	-	At stop	*" H17_en.92" on page 371*
H17.93	2017-5Eh	VDO default value after power-on	bit0: VDO1 bit1: VDO2 bit2: VDO3 bit3: VDO4 bit4: VDO5 bit5: VDO6 bit6: VDO7 bit7: VDO8 bit8: VDO9 bit9: VDO10 bit10: VDO11 bit11: VDO12 bit12: VDO13 bit13: VDO14 bit14: VDO15 bit15: VDO16	0	-	At stop	*" H17_en.93" on page 372*
H17.32	2017-21h	VDO virtual level	0–65535	0	-	Unchangeable	*" H17_en.32" on page 373*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.33	2017-22h	VDO1 function	0: No function 1: Servo ready 2: Motor rotation signal 3: Zero speed signal 4: Speed matching signal 5: Positioning completed 6: Positioning near 7: Torque limited signal 8: Speed limited signal 9: Braking 10: Warning 11: Fault 15: Interrupt positioning completed 16: Homing completed 17: Electrical homing completed 18: Torque reached signal 19: Speed reached signal 21: Enable completed 22: Internal command completed 23: Writing next command allowed 24: Internal motion completed 26: Closed-loop state 30: Warning or fault output 32: EDM output	0	-	Real-time	" H17_en.33" on page 373
H17.34	2017-23h	VDO1 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.34" on page 374
H17.35	2017-24h	VDO2 function	See H17.33.	0	-	Real-time	" H17_en.35" on page 374
H17.36	2017-25h	VDO2 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.36" on page 374
H17.37	2017-26h	VDO3 function	See H17.33.	0	-	Real-time	" H17_en.37" on page 374
H17.38	2017-27h	VDO3 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.38" on page 375
H17.39	2017-28h	VDO4 function	See H17.33.	0	-	Real-time	" H17_en.39" on page 375
H17.40	2017-29h	VDO4 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.40" on page 375
H17.41	2017-2Ah	VDO5 function	See H17.33.	0	-	Real-time	" H17_en.41" on page 376

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.42	2017-2Bh	VDO5 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.42" on page 376*
H17.43	2017-2Ch	VDO6 function	See H17.33.	0	-	Real-time	*" H17_en.43" on page 376*
H17.44	2017-2Dh	VDO6 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.44" on page 376*
H17.45	2017-2Eh	VDO7 function	See H17.33.	0	-	Real-time	*" H17_en.45" on page 377*
H17.46	2017-2Fh	VDO7 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.46" on page 377*
H17.47	2017-30h	VDO8 function	See H17.33.	0	-	Real-time	*" H17_en.47" on page 377*
H17.48	2017-31h	VDO8 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.48" on page 377*
H17.49	2017-32h	VDO9 function	See H17.33.	0	-	Real-time	*" H17_en.49" on page 378*
H17.50	2017-33h	VDO9 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.50" on page 378*
H17.51	2017-34h	VDO10 function	See H17.33.	0	-	Real-time	*" H17_en.51" on page 378*
H17.52	2017-35h	VDO10 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.52" on page 379*
H17.53	2017-36h	VDO11 function	See H17.33.	0	-	Real-time	*" H17_en.53" on page 379*
H17.54	2017-37h	VDO11 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.54" on page 379*
H17.55	2017-38h	VDO12 function	See H17.33.	0	-	Real-time	*" H17_en.55" on page 379*
H17.56	2017-39h	VDO12 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.56" on page 380*
H17.57	2017-3Ah	VDO13 function	See H17.33.	0	-	Real-time	*" H17_en.57" on page 380*
H17.58	2017-3Bh	VDO13 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*" H17_en.58" on page 380*
H17.59	2017-3Ch	VDO14 function	See H17.33.	0	-	Real-time	*" H17_en.59" on page 380*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.60	2017-3Dh	VDO14 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.60" on page 381
H17.61	2017-3Eh	VDO15 function	See H17.33.	0	-	Real-time	" H17_en.61" on page 381
H17.62	2017-3Fh	VDO15 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.62" on page 381
H17.63	2017-40h	VDO16 function	See H17.33.	0	-	Real-time	" H17_en.63" on page 382
H17.64	2017-41h	VDO16 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	" H17_en.64" on page 382

1.20 H18 Position Comparison Output Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H18.00	2018-01h	Position comparison output selection	0: Disable 1: Enable (rising edge-triggered)	0	-	Real-time	" H18_en.00" on page 382
H18.01	2018-02h	Position comparison output feedback source	0: Motor encoder feedback 1: Fully closed-loop position feedback	0	-	Real-time	" H18_en.01" on page 382
H18.02	2018-03h	Position comparison resolution	0: 24-bit 1: 23-bit 2: 22-bit 3: 21-bit 4: 20-bit 5: 19-bit 6: 18-bit 7: 17-bit	1	-	Real-time	" H18_en.02" on page 383
H18.03	2018-04h	Position comparison mode	0: Individual comparison mode 1: Cyclic comparison mode 2: Fixed cyclic comparison mode	0	-	Real-time	" H18_en.03" on page 383
H18.04	2018-05h	Current position as zero	0: Disable 1: Enable (rising edge-triggered)	0	-	Real-time	" H18_en.04" on page 384

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H18.05	2018-06h	Position comparison output width	0.1 ms–204.7 ms	0.1	ms	Real-time	*" H18_en.05" on page 384*
H18.06	2018-07h	Position comparison output ABZ port polarity	Bit 0: OCZ output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic Bit 1: Z port output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic bit2: A/B output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic	0	-	Real-time	*" H18_en.06" on page 384*
H18.07	2018-08h	Position comparison start point	0–40	0	-	Real-time	*" H18_en.07" on page 385*
H18.08	2018-09h	Position comparison end point	0–40	0	-	Real-time	*" H18_en.08" on page 385*
H18.09	2018-0Ah	Current state of position comparison	0–1024	0	-	Unchangeable	*" H18_en.09" on page 385*
H18.10	2018-0Bh	Real-time position of position comparison	-2147483648–2147483647	0	-	Unchangeable	*" H18_en.10" on page 386*
H18.12	2018-0Dh	Zero offset of position comparison	-2147483648–2147483647	0	-	Real-time	*" H18_en.12" on page 386*
H18.14	2018-0Fh	Position comparison output delay compensation	–12.00 µs to +12.00 µs	0.00	us	Real-time	*" H18_en.14" on page 386*
H18.15	2018-10h	Fixed cyclic comparison	1–65535	1	-	Real-time	*" H18_en.15" on page 386*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H18.16	2018-11h	ABZ output function setting	bit0: OCZ output function 0: Frequency-division output 1: Position comparison bit1: Z port output function 0: Frequency-division output 1: Position comparison bit2: A/B port output function 0: Frequency-division output 1: Position comparison	0	-	Real-time	*" H18_en.16" on page 387*
H18.17	2018-12h	Number of fixed mode cycles	0–65535	0	-	Unchangeable	*" H18_en.17" on page 387*

1.21 H19 Target Position Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.00	2019-01h	Target value of position comparison 1	-2147483648–2147483647	0	-	Real-time	*" H19_en.00" on page 388*
H19.02	2019-03h	Attribute value of position comparison 1	bit0: Current position changes from "less than" to "more than" the comparison point bit1: Current position changes from "more than" to "less than" the comparison point bit2: Reserved bit3: Reserved bit4: Reserved bit5: Reserved bit6: Reserved bit7: DO1 output bit8: DO2 output bit9: DO3 output bit10: DO4 output bit11: DO5 output bit12: Frequency-division A output bit13: Frequency-division B output bit14: Frequency-division Z output bit15: Frequency-division OCZ output	0	-	Real-time	*" H19_en.02" on page 388*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.03	2019-04h	Target value of position comparison 2	-2147483648–2147483647	0	-	Real-time	*" H19_en.03" on page 389*
H19.05	2019-06h	Attribute value of position comparison 2	See H19.02.	0	-	Real-time	*" H19_en.05" on page 389*
H19.06	2019-07h	Target value of position comparison 3	-2147483648–2147483647	0	-	Real-time	*" H19_en.06" on page 389*
H19.08	2019-09h	Attribute value of position comparison 3	See H19.02.	0	-	Real-time	*" H19_en.08" on page 389*
H19.09	2019-0Ah	Target value of position comparison 4	-2147483648–2147483647	0	-	Real-time	*" H19_en.09" on page 390*
H19.11	2019-0Ch	Attribute value of position comparison 4	See H19.02.	0	-	Real-time	*" H19_en.11" on page 390*
H19.12	2019-0Dh	Target value of position comparison 5	-2147483648–2147483647	0	-	Real-time	*" H19_en.12" on page 390*
H19.14	2019-0Fh	Attribute value of position comparison 5	See H19.02.	0	-	Real-time	*" H19_en.14" on page 390*
H19.15	2019-10h	Target value of position comparison 6	-2147483648–2147483647	0	-	Real-time	*" H19_en.15" on page 391*
H19.17	2019-12h	Attribute value of position comparison 6	See H19.02.	0	-	Real-time	*" H19_en.17" on page 391*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.18	2019-13h	Target value of position comparison 7	-2147483648–2147483647	0	-	Real-time	*" H19_en.18" on page 391*
H19.20	2019-15h	Attribute value of position comparison 7	See H19.02.	0	-	Real-time	*" H19_en.20" on page 391*
H19.21	2019-16h	Target value of position comparison 8	-2147483648–2147483647	0	-	Real-time	*" H19_en.21" on page 392*
H19.23	2019-18h	Attribute value of position comparison 8	See H19.02.	0	-	Real-time	*" H19_en.23" on page 392*
H19.24	2019-19h	Target value of position comparison 9	-2147483648–2147483647	0	-	Real-time	*" H19_en.24" on page 392*
H19.26	2019-1Bh	Attribute value of position comparison 9	See H19.02.	0	-	Real-time	*" H19_en.26" on page 393*
H19.27	2019-1Ch	Target value of position comparison 10	-2147483648–2147483647	0	-	Real-time	*" H19_en.27" on page 393*
H19.29	2019-1Eh	Attribute value of position comparison 10	See H19.02.	0	-	Real-time	*" H19_en.29" on page 393*
H19.30	2019-1Fh	Target value of position comparison 11	-2147483648–2147483647	0	-	Real-time	*" H19_en.30" on page 393*
H19.32	2019-21h	Attribute value of position comparison 11	See H19.02.	0	-	Real-time	*" H19_en.32" on page 394*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.33	2019-22h	Target value of position comparison 12	-2147483648–2147483647	0	-	Real-time	*" H19_en.33" on page 394*
H19.35	2019-24h	Attribute value of position comparison 12	See H19.02.	0	-	Real-time	*" H19_en.35" on page 394*
H19.36	2019-25h	Target value of position comparison 13	-2147483648–2147483647	0	-	Real-time	*" H19_en.36" on page 394*
H19.38	2019-27h	Attribute value of position comparison 13	See H19.02.	0	-	Real-time	*" H19_en.38" on page 395*
H19.39	2019-28h	Target value of position comparison 14	-2147483648–2147483647	0	-	Real-time	*" H19_en.39" on page 395*
H19.41	2019-2Ah	Attribute value of position comparison 14	See H19.02.	0	-	Real-time	*" H19_en.41" on page 395*
H19.42	2019-2Bh	Target value of position comparison 15	-2147483648–2147483647	0	-	Real-time	*" H19_en.42" on page 395*
H19.44	2019-2Dh	Attribute value of position comparison 15	See H19.02.	0	-	Real-time	*" H19_en.44" on page 396*
H19.45	2019-2Eh	Target value of position comparison 16	-2147483648–2147483647	0	-	Real-time	*" H19_en.45" on page 396*
H19.47	2019-30h	Attribute value of position comparison 16	See H19.02.	0	-	Real-time	*" H19_en.47" on page 396*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.48	2019-31h	Target value of position comparison 17	-2147483648–2147483647	0	-	Real-time	*" H19_en.48" on page 397*
H19.50	2019-33h	Attribute value of position comparison 17	See H19.02.	0	-	Real-time	*" H19_en.50" on page 397*
H19.51	2019-34h	Target value of position comparison 18	-2147483648–2147483647	0	-	Real-time	*" H19_en.51" on page 397*
H19.53	2019-36h	Attribute value of position comparison 18	See H19.02.	0	-	Real-time	*" H19_en.53" on page 397*
H19.54	2019-37h	Target value of position comparison 19	-2147483648–2147483647	0	-	Real-time	*" H19_en.54" on page 398*
H19.56	2019-39h	Attribute value of position comparison 19	See H19.02.	0	-	Real-time	*" H19_en.56" on page 398*
H19.57	2019-3Ah	Target value of position comparison 20	-2147483648–2147483647	0	-	Real-time	*" H19_en.57" on page 398*
H19.59	2019-3Ch	Attribute value of position comparison 20	See H19.02.	0	-	Real-time	*" H19_en.59" on page 398*
H19.60	2019-3Dh	Target value of position comparison 21	-2147483648–2147483647	0	-	Real-time	*" H19_en.60" on page 399*
H19.62	2019-3Fh	Attribute value of position comparison 21	See H19.02.	0	-	Real-time	*" H19_en.62" on page 399*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.63	2019-40h	Target value of position comparison 22	-2147483648–2147483647	0	-	Real-time	*" H19_en.63" on page 399*
H19.65	2019-42h	Attribute value of position comparison 22	See H19.02.	0	-	Real-time	*" H19_en.65" on page 399*
H19.66	2019-43h	Target value of position comparison 23	-2147483648–2147483647	0	-	Real-time	*" H19_en.66" on page 400*
H19.68	2019-45h	Attribute value of position comparison 23	See H19.02.	0	-	Real-time	*" H19_en.68" on page 400*
H19.69	2019-46h	Target value of position comparison 24	-2147483648–2147483647	0	-	Real-time	*" H19_en.69" on page 400*
H19.71	2019-48h	Attribute value of position comparison 24	See H19.02.	0	-	Real-time	*" H19_en.71" on page 401*
H19.72	2019-49h	Target value of position comparison 25	-2147483648–2147483647	0	-	Real-time	*" H19_en.72" on page 401*
H19.74	2019-4Bh	Attribute value of position comparison 25	See H19.02.	0	-	Real-time	*" H19_en.74" on page 401*
H19.75	2019-4Ch	Target value of position comparison 26	-2147483648–2147483647	0	-	Real-time	*" H19_en.75" on page 401*
H19.77	2019-4Eh	Attribute value of position comparison 26	See H19.02.	0	-	Real-time	*" H19_en.77" on page 402*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.78	2019-4Fh	Target value of position comparison 27	-2147483648–2147483647	0	-	Real-time	*" H19_en.78" on page 402*
H19.80	2019-51h	Attribute value of position comparison 27	See H19.02.	0	-	Real-time	*" H19_en.80" on page 402*
H19.81	2019-52h	Target value of position comparison 28	-2147483648–2147483647	0	-	Real-time	*" H19_en.81" on page 402*
H19.83	2019-54h	Attribute value of position comparison 28	See H19.02.	0	-	Real-time	*" H19_en.83" on page 403*
H19.84	2019-55h	Target value of position comparison 29	-2147483648–2147483647	0	-	Real-time	*" H19_en.84" on page 403*
H19.86	2019-57h	Attribute value of position comparison 29	See H19.02.	0	-	Real-time	*" H19_en.86" on page 403*
H19.87	2019-58h	Target value of position comparison 30	-2147483648–2147483647	0	-	Real-time	*" H19_en.87" on page 403*
H19.89	2019-5Ah	Attribute value of position comparison 30	See H19.02.	0	-	Real-time	*" H19_en.89" on page 404*
H19.90	2019-5Bh	Target value of position comparison 31	-2147483648–2147483647	0	-	Real-time	*" H19_en.90" on page 404*
H19.92	2019-5Dh	Attribute value of position comparison 31	See H19.02.	0	-	Real-time	*" H19_en.92" on page 404*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.93	2019-5Eh	Target value of position comparison 32	-2147483648–2147483647	0	-	Real-time	*" H19_en.93" on page 405*
H19.95	2019-60h	Attribute value of position comparison 32	See H19.02.	0	-	Real-time	*" H19_en.95" on page 405*
H19.96	2019-61h	Target value of position comparison 33	-2147483648–2147483647	0	-	Real-time	*" H19_en.96" on page 405*
H19.98	2019-63h	Attribute value of position comparison 33	See H19.02.	0	-	Real-time	*" H19_en.98" on page 405*
H19.99	2019-64h	Target value of position comparison 34	-2147483648–2147483647	0	-	Real-time	*" H19_en.99" on page 406*
H19.101	2019-66h	Attribute value of position comparison 34	See H19.02.	0	-	Real-time	*" H19_en.101" on page 406*
H19.102	2019-67h	Target value of position comparison 35	-2147483648–2147483647	0	-	Real-time	*" H19_en.102" on page 406*
H19.104	2019-69h	Attribute value of position comparison 35	See H19.02.	0	-	Real-time	*" H19_en.104" on page 406*
H19.105	2019-6Ah	Target value of position comparison 36	-2147483648–2147483647	0	-	Real-time	*" H19_en.105" on page 407*
H19.107	2019-6Ch	Attribute value of position comparison 36	See H19.02.	0	-	Real-time	*" H19_en.107" on page 407*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.108	2019-6Dh	Target value of position comparison 37	-2147483648–2147483647	0	-	Real-time	*" H19_en.108" on page 407*
H19.110	2019-6Fh	Attribute value of position comparison 37	See H19.02.	0	-	Real-time	*" H19_en.110" on page 407*
H19.111	2019-70h	Target value of position comparison 38	-2147483648–2147483647	0	-	Real-time	*" H19_en.111" on page 408*
H19.113	2019-72h	Attribute value of position comparison 38	See H19.02.	0	-	Real-time	*" H19_en.113" on page 408*
H19.114	2019-73h	Target value of position comparison 39	-2147483648–2147483647	0	-	Real-time	*" H19_en.114" on page 408*
H19.116	2019-75h	Attribute value of position comparison 39	See H19.02.	0	-	Real-time	*" H19_en.116" on page 409*
H19.117	2019-76h	Target value of position comparison 40	-2147483648–2147483647	0	-	Real-time	*" H19_en.117" on page 409*
H19.119	2019-78h	Attribute value of position comparison 40	See H19.02.	0	-	Real-time	*" H19_en.119" on page 409*

1.22 H1F Software Tool Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H1F.90	201F-5Bh	DI function state 1 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.90" on page 409*
H1F.91	201F-5Ch	DI function state 2 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.91" on page 410*
H1F.92	201F-5Dh	DI function state 3 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.92" on page 410*
H1F.93	201F-5Eh	DI function state 4 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.93" on page 411*
H1F.94	201F-5Fh	DO function state 1 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.94" on page 411*
H1F.95	201F-60h	DO function state 2 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.95" on page 411*
H1F.96	201F-61h	DO function state 3 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.96" on page 412*
H1F.97	201F-62h	DO function state 4 read through communication	0–65535	0	-	Unchangeable	*" H1F_en.97" on page 412*

1.23 H21 Current Loop Gain Switchover Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H21.00	2021-01h	Current loop gain switchover	0: No operation 1: Enabled	0	-	Real-time	*" H21_en.00" on page 412*

1.24 H22 Process Segment Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.00	2022-01h	Process segment command trigger	0–1000	0	-	Real-time	*" H22_en.00" on page 413*
H22.01	2022-02h	Process segment triggered by the event rising edge	0–65535	0	-	Real-time	*" H22_en.01" on page 413*
H22.02	2022-03h	Process segment triggered by the event falling edge	0–65535	0	-	Real-time	*" H22_en.02" on page 414*
H22.03	2022-04h	Acceleration/ Deceleration time upon technology segment pause	0: Acceleration/Deceleration time 1: Acceleration/Deceleration time 1 2: Acceleration/Deceleration time 2 3: Acceleration/Deceleration time 3 4: Acceleration/Deceleration time 4 5: Acceleration/Deceleration time 5 6: Acceleration/Deceleration time 6 7: Acceleration/Deceleration time 7	0	-	Real-time	*" H22_en.03" on page 415*
H22.04	2022-05h	Positive software position limit	-2147483648 to 2147483647	2147483647	Reference unit	Real-time	*" H22_en.04" on page 416*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.06	2022-07h	Negative software position limit	-2147483648 to 2147483647	-2147483648	Reference unit	Real-time	" H22_en.06" on page 416
H22.08	2022-09h	Process segment number	0–65535	0	-	Unchangeable	" H22_en.08" on page 416
H22.09	2022-0Ah	Process segment function switch	0–65535	0	-	At stop	" H22_en.09" on page 416
H22.19	2022-14h	Target speed	0.1 rpm to 6000.0 rpm	50.0	RPM	Real-time	" H22_en.19" on page 417
H22.20	2022-15h	Target speed 1	0.1 rpm to 6000.0 rpm	200.0	RPM	Real-time	" H22_en.20" on page 417
H22.21	2022-16h	Target speed 2	0.1 rpm to 6000.0 rpm	500.0	RPM	Real-time	" H22_en.21" on page 417
H22.22	2022-17h	Target speed 3	0.1 rpm to 6000.0 rpm	1000.0	RPM	Real-time	" H22_en.22" on page 418
H22.23	2022-18h	Target speed 4	0.1 rpm to 6000.0 rpm	1500.0	RPM	Real-time	" H22_en.23" on page 418
H22.24	2022-19h	Target speed 5	0.1 rpm to 6000.0 rpm	2000.0	RPM	Real-time	" H22_en.24" on page 418
H22.25	2022-1Ah	Target speed 6	0.1 rpm to 6000.0 rpm	2500.0	RPM	Real-time	" H22_en.25" on page 418
H22.26	2022-1Bh	Target speed 7	0.1 rpm to 6000.0 rpm	3000.0	RPM	Real-time	" H22_en.26" on page 419
H22.35	2022-24h	Accel/Decel time	0 ms–65535 ms	50	ms	Real-time	" H22_en.35" on page 419
H22.36	2022-25h	Acceleration/ Deceleration time 1	0 ms–65535 ms	200	ms	Real-time	" H22_en.36" on page 419
H22.37	2022-26h	Acceleration/ Deceleration time 2	0 ms–65535 ms	500	ms	Real-time	" H22_en.37" on page 420
H22.38	2022-27h	Acceleration/ Deceleration time 3	0 ms–65535 ms	1000	ms	Real-time	" H22_en.38" on page 420
H22.39	2022-28h	Acceleration/ Deceleration time 4	0 ms–65535 ms	1500	ms	Real-time	" H22_en.39" on page 420

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.40	2022-29h	Acceleration/ Deceleration time 5	0 ms–65535 ms	2000	ms	Real-time	" H22_en.40" on page 420
H22.41	2022-2Ah	Acceleration/ Deceleration time 6	0 ms–65535 ms	2500	ms	Real-time	" H22_en.41" on page 421
H22.42	2022-2Bh	Acceleration/ Deceleration time 7	0 ms–65535 ms	3000	ms	Real-time	" H22_en.42" on page 421
H22.51	2022-34h	Delay after completion of the process segment	0 ms–65535 ms	0	ms	Real-time	" H22_en.51" on page 421
H22.52	2022-35h	Delay time 1 after completion of the process segment	0 ms–65535 ms	50	ms	Real-time	" H22_en.52" on page 422
H22.53	2022-36h	Delay time 2 after completion of the process segment	0 ms–65535 ms	200	ms	Real-time	" H22_en.53" on page 422
H22.54	2022-37h	Delay time 3 after completion of the process segment	0 ms–65535 ms	500	ms	Real-time	" H22_en.54" on page 422
H22.55	2022-38h	Delay time 4 after completion of the process segment	0 ms–65535 ms	1000	ms	Real-time	" H22_en.55" on page 422

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.56	2022-39h	Delay time 5 after completion of the process segment	0 ms–65535 ms	1500	ms	Real-time	" H22_en.56" on page 423
H22.57	2022-3Ah	Delay time 6 after completion of the process segment	0 ms–65535 ms	2000	ms	Real-time	" H22_en.57" on page 423
H22.58	2022-3Bh	Delay time 7 after completion of the process segment	0 ms–65535 ms	3000	ms	Real-time	" H22_en.58" on page 423
H22.70	2022-47h	Homing mode	-32768–32767	-2	-	Real-time	" H22_en.70" on page 423
H22.71	2022-48h	Speed of high-speed search for home switch signal	0 RPM to 3000 RPM	100	RPM	Real-time	" H22_en.71" on page 424
H22.72	2022-49h	Speed of low-speed search for home switch signal	0 rpm to 1000 rpm	10	RPM	Real-time	" H22_en.72" on page 424
H22.73	2022-4Ah	Acceleration/ Deceleration time during homing	0 ms–1000 ms	1000	ms	Real-time	" H22_en.73" on page 424
H22.74	2022-4Bh	Home search time limit	0 ms–65535 ms	10000	ms	Real-time	" H22_en.74" on page 425
H22.75	2022-4Ch	Mechanical home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	" H22_en.75" on page 425
H22.79	2022-50h	Relative/ Absolute homing	0–65535	0	-	Real-time	" H22_en.79" on page 425

1.25 H23 Process Segment Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H23.00	2023-01h	Definition of homing	0–4294967295	0	-	Real-time	" H23_en.00" on page 426
H23.02	2023-03h	Homing data	-2147483648–2147483647	0	-	Real-time	" H23_en.02" on page 426
H23.04	2023-05h	Definition of process segment 1	0–4294967295	0	-	Real-time	" H23_en.04" on page 426
H23.06	2023-07h	Data of process segment 1	-2147483648–2147483647	0	-	Real-time	" H23_en.06" on page 427
H23.08	2023-09h	Definition of process segment 2	0–4294967295	0	-	Real-time	" H23_en.08" on page 427
H23.10	2023-0Bh	Data of process segment 2	-2147483648–2147483647	0	-	Real-time	" H23_en.10" on page 427
H23.12	2023-0Dh	Definition of process segment 3	0–4294967295	0	-	Real-time	" H23_en.12" on page 428
H23.14	2023-0Fh	Data of process segment 3	-2147483648–2147483647	0	-	Real-time	" H23_en.14" on page 428
H23.16	2023-11h	Definition of process segment 4	0–4294967295	0	-	Real-time	" H23_en.16" on page 428
H23.18	2023-13h	Data of process segment 4	-2147483648–2147483647	0	-	Real-time	" H23_en.18" on page 428
H23.20	2023-15h	Definition of process segment 5	0–4294967295	0	-	Real-time	" H23_en.20" on page 429
H23.22	2023-17h	Data of process segment 5	-2147483648–2147483647	0	-	Real-time	" H23_en.22" on page 429
H23.24	2023-19h	Definition of process segment 6	0–4294967295	0	-	Real-time	" H23_en.24" on page 429
H23.26	2023-1Bh	Data of process segment 6	-2147483648–2147483647	0	-	Real-time	" H23_en.26" on page 430

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H23.28	2023-1Dh	Definition of process segment 7	0–4294967295	0	-	Real-time	" H23_en.28" on page 430
H23.30	2023-1Fh	Data of process segment 7	-2147483648–2147483647	0	-	Real-time	" H23_en.30" on page 430
H23.32	2023-21h	Definition of process segment 8	0–4294967295	0	-	Real-time	" H23_en.32" on page 430
H23.34	2023-23h	Data of process segment 8	-2147483648–2147483647	0	-	Real-time	" H23_en.34" on page 431
H23.36	2023-25h	Definition of process segment 9	0–4294967295	0	-	Real-time	" H23_en.36" on page 431
H23.38	2023-27h	Data of process segment 9	-2147483648–2147483647	0	-	Real-time	" H23_en.38" on page 431
H23.40	2023-29h	Definition of process segment 10	0–4294967295	0	-	Real-time	" H23_en.40" on page 431
H23.42	2023-2Bh	Data of process segment 10	-2147483648–2147483647	0	-	Real-time	" H23_en.42" on page 432
H23.44	2023-2Dh	Definition of process segment 11	0–4294967295	0	-	Real-time	" H23_en.44" on page 432
H23.46	2023-2Fh	Data of process segment 11	-2147483648–2147483647	0	-	Real-time	" H23_en.46" on page 432
H23.48	2023-31h	Definition of process segment 12	0–4294967295	0	-	Real-time	" H23_en.48" on page 433
H23.50	2023-33h	Data of process segment 12	-2147483648–2147483647	0	-	Real-time	" H23_en.50" on page 433
H23.52	2023-35h	Definition of process segment 13	0–4294967295	0	-	Real-time	" H23_en.52" on page 433
H23.54	2023-37h	Data of process segment 13	-2147483648–2147483647	0	-	Real-time	" H23_en.54" on page 433

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H23.56	2023-39h	Definition of process segment 14	0–4294967295	0	-	Real-time	" H23_en.56" on page 434
H23.58	2023-3Bh	Data of process segment 14	-2147483648–2147483647	0	-	Real-time	" H23_en.58" on page 434
H23.60	2023-3Dh	Definition of process segment 15	0–4294967295	0	-	Real-time	" H23_en.60" on page 434
H23.62	2023-3Fh	Data of process segment 15	-2147483648–2147483647	0	-	Real-time	" H23_en.62" on page 434

1.26 H30 Related Variables Read through Communication

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H30.00	2030-01h	Servo state read by communication	0–65535	0	-	Unchangeable	" H30_en.00" on page 435
H30.01	2030-02h	DO function state 1 read through communication	0–65535	0	-	Unchangeable	" H30_en.01" on page 435
H30.02	2030-03h	DO function state 2 read through communication	0–65535	0	-	Unchangeable	" H30_en.02" on page 435
H30.03	2030-04h	Input pulse reference sampling read via communication	0–65535	0	-	Unchangeable	" H30_en.03" on page 436
H30.16	2030-11h	Encoder communication timeout timing	0–65535	0	-	Unchangeable	" H30_en.16" on page 436

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H30.17	2030-12h	Encoder communication CRC error count	0–65535	0	-	Unchangeable	*" H30_en.17" on page 436*
H30.18	2030-13h	Encoder communication frame stop bit error count	0–65535	0	-	Unchangeable	*" H30_en.18" on page 437*

1.27 H31 References Set through Communication

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H31.00	2031-01h	VDI virtual level set through communication	0–65535	0	-	Real-time	*" H31_en.00" on page 437*
H31.01	2031-02h	Frequency-division output frequency set through communication	0 Hz–16000000 Hz	0	Hz	Real-time	*" H31_en.01" on page 437*
H31.04	2031-05h	DO state set through communication	0–65535	0	-	Real-time	*" H31_en.04" on page 438*
H31.05	2031-06h	AO set through communication	-10000 mV–10000 mV	0	mV	Real-time	*" H31_en.05" on page 438*
H31.09	2031-0Ah	Speed reference set via communication	-9999.000rpm to 9999.000rpm	0.000	RPM	Real-time	*" H31_en.09" on page 438*
H31.11	2031-0Ch	Torque reference set via communication	-100.000% to 100.000%	0.000	%	Real-time	*" H31_en.11" on page 438*

1.28 H32 Direct Drive Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.00	2032-01h	Encoder interpolator mismatch alarm (E124)	0: Disabled 1: Enabled	1	-	At stop	" H32_en.00" on page 439
H32.02	2032-03h	Angle auto-tuning upon power-on	0: Disabled 1: Enabled	0	-	At stop	" H32_en.02" on page 439
H32.03	2032-04h	Angle auto-tuning switch controlled by control word	0: Disabled 1: Control word 6 2: Control word 7	0	-	At stop	" H32_en.03" on page 439
H32.04	2032-05h	Angle auto-tuning state	bit0: bit7 of 6041 bit1: E602.9	0	-	At stop	" H32_en.04" on page 440
H32.05	2032-06h	Pre-positioning retract selection	0: Disabled 1: Enabled	0	-	At stop	" H32_en.05" on page 440
H32.06	2032-07h	Position feedback	0: Disabled 1: Enabled	0	-	At stop	" H32_en.06" on page 440
H32.07	2032-08h	Incremental homing method	0: Z Signal short circuit 1: Only first short circuit	1	-	At stop	" H32_en.07" on page 441
H32.08	2032-09h	Homing signal width	100–65535	800	-	At stop	" H32_en.08" on page 441
H32.10	2032-0Bh	Max. reference current in angle auto-tuning through inching	10.0% to 300.0%	100.0	%	At stop	" H32_en.10" on page 441
H32.13	2032-0Eh	Motor operation threshold (ROT/DDR) in angle auto-tuning through inching	0.001deg to 20.000deg	0.200	deg	At stop	" H32_en.13" on page 442

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.14	2032-0Fh	Motor standstill threshold (ROT/DDR) in angle auto-tuning through inching	0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]	1.0	[mm/s]/[rpm]	At stop	" H32_en.14" on page 442
H32.15	2032-10h	Motor operation threshold (DDL) in angle auto-tuning through inching	0.001 millimeters–20.000 millimeters	0.200	mm	At stop	" H32_en.15" on page 442
H32.16	2032-11h	Motor standstill threshold (DDL) in angle auto-tuning through inching	0.1 mm/s–100.0 mm/s	1.0	mm/s	At stop	" H32_en.16" on page 443
H32.18	2032-13h	Motor standstill threshold for inching angle auto-tuning	0.1s to 10.0s	0.5	s	At stop	" H32_en.18" on page 443
H32.20	2032-15h	Max. reference current in angle auto-tuning through pre-positioning (closed-loop)	10.0% to 300.0%	100.0	%	At stop	" H32_en.20" on page 443

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.22	2032-17h	Electrical angle reference in angle auto-tuning through pre-positioning (closed-loop)	0.0deg to 360.0deg	0.0	deg	At stop	" H32_en.22" on page 443
H32.23	2032-18h	Electrical angle reference change range in angle auto-tuning through pre-positioning (closed-loop)	10.0deg to 170.0deg	90.0	deg	At stop	" H32_en.23" on page 444
H32.24	2032-19h	Motor stop threshold (ROT/DDR) in angle auto-tuning through pre-positioning (closed-loop)	0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]	1.0	[mm/s]/[rpm]	At stop	" H32_en.24" on page 444
H32.25	2032-1Ah	Motor stop threshold (DDL) in angle auto-tuning through pre-positioning (closed-loop)	0.1 mm/s–100.0 mm/s	1.0	mm/s	At stop	" H32_en.25" on page 444
H32.26	2032-1Bh	Damping in angle auto-tuning through pre-positioning (closed-loop)	0.00[N/(m/s)]/[N·m/rpm]–655.35[N/(m/s)]/[N·m/rpm]	0.00	[N/(m/s)]/[N·m/rpm]	At stop	" H32_en.26" on page 445

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.29	2032-1Eh	Motor standstill threshold for close-loop pre-positioning angle auto-tuning	0.1s to 10.0s	0.5	s	At stop	*" H32_en.29" on page 445*
H32.30	2032-1Fh	Max. reference current in angle auto-tuning through position lock	10.0% to 300.0%	100.0	%	At stop	*" H32_en.30" on page 445*
H32.33	2032-22h	Motor operation threshold (ROT/DDR) in angle auto-tuning through position lock	0.001deg to 20.000deg	0.200	deg	At stop	*" H32_en.33" on page 446*
H32.34	2032-23h	Motor standstill threshold (ROT/DDR) in angle auto-tuning through position lock	0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]	1.0	[mm/s]/[rpm]	At stop	*" H32_en.34" on page 446*
H32.35	2032-24h	Motor operation threshold (DDL) in angle auto-tuning through position lock	0.001 millimeters–20.000 millimeters	0.200	mm	At stop	*" H32_en.35" on page 446*
H32.36	2032-25h	Motor standstill threshold (DDL) in angle auto-tuning through position lock	0.1 mm/s–100.0 mm/s	1.0	mm/s	At stop	*" H32_en.36" on page 447*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.37	2032-26h	Angle gain in angle auto-tuning through position lock	0deg/(p/s)–10000deg/(p/s)	1000	deg/(p/s)	At stop	" H32_en.37" on page 447
H32.38	2032-27h	Inertia ratio in angle auto-tuning through position lock	0.00–120.00	0.00	-	At stop	" H32_en.38" on page 447
H32.39	2032-28h	Gain class in angle auto-tuning through position lock	4level to 31level	16	level	At stop	" H32_en.39" on page 448
H32.40	2032-29h	Left/Right limit function	1. Left limit being positive 2. Left limit being negative	0	-	Real-time	" H32_en.40" on page 448
H32.41	2032-2Ah	Angle auto-tuning delay upon power-on	0 ms–65535 ms	3	ms	Real-time	" H32_en.41" on page 448
H32.53	2032-36h	Motor standstill threshold for position lock angle auto-tuning	0.1s to 10.0s	0.5	s	At stop	" H32_en.53" on page 449
H32.54	2032-37h	Hall auto-tuning selection	0–65535	0	-	At stop	" H32_en.54" on page 449
H32.55	2032-38h	Hall signal UVW manual adjustment	0–7	0	-	At stop	" H32_en.55" on page 449
H32.56	2032-39h	UVW filter time of Hall signal	0 ms–10 ms	5	ms	Real-time	" H32_en.56" on page 449
H32.57	2032-3Ah	Hall closed-loop locked-rotor speed	0[mm/s]/[rpm]–65535[mm/s]/[rpm]	2	[mm/s]/[rpm]	At stop	" H32_en.57" on page 450
H32.58	2032-3Bh	Hall closed-loop locked-rotor current	0.0% to 300.0%	120.0	%	At stop	" H32_en.58" on page 450

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.59	2032-3Ch	Hall closed-loop locked-rotor window time	0 ms–2000 ms	10	ms	At stop	" H32_en.59" on page 450
H32.60	2032-3Dh	Hall closed-loop inertia ratio	0.00–120.00	0.00	-	At stop	" H32_en.60" on page 451
H32.61	2032-3Eh	Hall closed-loop rigidity	4–31	16	-	At stop	" H32_en.61" on page 451
H32.62	2032-3Fh	Electrical angle save flag	0–65535	0	-	Real-time	" H32_en.62" on page 451
H32.63	2032-40h	Hall1 electric angle	0–65535	0	-	At stop	" H32_en.63" on page 451
H32.64	2032-41h	Hall2 electric angle	0–65535	0	-	At stop	" H32_en.64" on page 452
H32.65	2032-42h	Hall3 electric angle	0–65535	0	-	At stop	" H32_en.65" on page 452
H32.66	2032-43h	Hall4 electric angle	0–65535	0	-	At stop	" H32_en.66" on page 452
H32.67	2032-44h	Hall5 electric angle	0–65535	0	-	At stop	" H32_en.67" on page 452
H32.68	2032-45h	Hall6 electric angle	0–65535	0	-	At stop	" H32_en.68" on page 453
H32.70	2032-47h	Motor overload protection mode	0: Internal motor overload curve 1: External motor overload curve 2: Current limit overload protection 3: Hide motor overload protection	0	-	At stop	" H32_en.70" on page 453
H32.73	2032-4Ah	Thermal threshold current of overload current limit	100.0% to 750.0%	115.0	%	At stop	" H32_en.73" on page 453
H32.74	2032-4Bh	Peak current of overload current limit	100.0% to 750.0%	300.0	%	At stop	" H32_en.74" on page 454
H32.75	2032-4Ch	Max. current duration of overload protection	0.01s to 655.35s	1.00	s	At stop	" H32_en.75" on page 454
H32.76	2032-4Dh	Current limit time constant of overload protection	0.01–655.35	1.00	-	At stop	" H32_en.76" on page 454

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.77	2032-4Eh	Current limit alarm threshold of overload protection	0.0% to 750.0%	0.0	%	At stop	*" H32_en.77" on page 455*
H32.78	2032-4Fh	Current limit fault threshold of overload protection	0.0% to 750.0%	0.0	%	At stop	*" H32_en.78" on page 455*
H32.79	2032-50h	Thermal threshold current of overload	100.0% to 750.0%	115.0	%	At stop	*" H32_en.79" on page 455*
H32.80	2032-51h	Thermal current interval of overload	0.1% to 204.8%	6.4	%	At stop	*" H32_en.80" on page 455*
H32.81	2032-52h	Overload heat dissipation current interval	0.1% to 204.8%	6.4	%	At stop	*" H32_en.81" on page 456*
H32.82	2032-53h	Length of overload heat dissipation curve	1–200	1	-	At stop	*" H32_en.82" on page 456*
H32.83	2032-54h	Length of overload heat dissipation curve	1–200	1	-	At stop	*" H32_en.83" on page 456*

1.29 H33 Compensation Parameters

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.00	0x3300	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.00" on page 457
H33.01	0x3301	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.01" on page 457
H33.02	0x3302	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.02" on page 457
H33.03	0x3303	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.03" on page 457
H33.04	0x3304	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.04" on page 458
H33.05	0x3305	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.05" on page 458
H33.06	0x3306	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.06" on page 458
H33.07	0x3307	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.07" on page 458
H33.08	0x3308	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.08" on page 459
H33.09	0x3309	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.09" on page 459
H33.10	0x330A	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.10" on page 459
H33.11	0x330B	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.11" on page 460
H33.12	0x330C	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.12" on page 460
H33.13	0x330D	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.13" on page 460

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.14	0x330E	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.14" on page 460
H33.15	0x330F	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.15" on page 461
H33.16	0x3310	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.16" on page 461
H33.17	0x3311	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.17" on page 461
H33.18	0x3312	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.18" on page 461
H33.19	0x3313	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.19" on page 462
H33.20	0x3314	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.20" on page 462
H33.21	0x3315	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.21" on page 462
H33.22	0x3316	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.22" on page 462
H33.23	0x3317	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.23" on page 463
H33.24	0x3318	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.24" on page 463
H33.25	0x3319	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.25" on page 463
H33.26	0x331A	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.26" on page 464
H33.27	0x331B	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.27" on page 464

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.28	0x331C	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.28" on page 464
H33.29	0x331D	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.29" on page 464
H33.30	0x331E	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.30" on page 465
H33.31	0x331F	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.31" on page 465
H33.32	0x3320	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.32" on page 465
H33.33	0x3321	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.33" on page 465
H33.34	0x3322	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.34" on page 466
H33.35	0x3323	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.35" on page 466
H33.36	0x3324	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.36" on page 466
H33.37	0x3325	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.37" on page 466
H33.38	0x3326	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.38" on page 467
H33.39	0x3327	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.39" on page 467
H33.40	0x3328	Current Compensation BUFFER group number	0–65535	0	-	At stop	" H33_en.40" on page 467
H33.41	0x3329	Compensation data sum	0–32767	0	-	At stop	" H33_en.41" on page 468

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.44	0x332C	Data command	0–1	1	-	At stop	" H33_en.44" on page 468
H33.45	0x332D	Data storage position	0: Servo RAM 1: Servo FLASH 2: Encoder FLASH	1	-	At stop	" H33_en.45" on page 468
H33.46	0x332E	Data clear	0–3	0	-	At stop	" H33_en.46" on page 468
H33.47	0x332F	Software tool write status	0–2	0	-	At stop	" H33_en.47" on page 469
H33.48	0x3330	Servo read status	0–65535	0	-	Unchangeable	" H33_en.48" on page 469
H33.49	0x3331	Software tool read status	0–2	0	-	At stop	" H33_en.49" on page 469
H33.50	0x3332	Servo write status	0–2	0	-	Unchangeable	" H33_en.50" on page 469
H33.51	0x3333	Data transmission completed flag	0–1	0	-	At stop	" H33_en.51" on page 470
H33.52	0x3334	Servo data transfer completed flag	0–1	0	-	At stop	" H33_en.52" on page 470
H33.60	0x333C	Accuracy compensation function	0–1	0	-	At stop	" H33_en.60" on page 470
H33.61	0x333D	Accuracy compensation sum	0count to 65535count	0	count	At stop	" H33_en.61" on page 470

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.62	0x333E	Starting offset address of accuracy compensation	-21474836.48[mm]/[deg]–2147483647[mm]/[deg]	0.00	[mm]/[deg]	At stop	" H33_en.62" on page 471
H33.64	0x3340	Accuracy compensation data interval	-327.67[mm]/[deg]–327.67[mm]/[deg]	0.00	[mm]/[deg]	At stop	" H33_en.64" on page 471
H33.65	0x3341	Accuracy compensation dial phase sequence	0–65535	0	-	At stop	" H33_en.65" on page 471
H33.66	0x3342	Accuracy compensation dial reference direction	0–1	0	-	At stop	" H33_en.66" on page 472
H33.67	0x3343	Servo homing completed	0–65535	0	-	Unchangeable	" H33_en.67" on page 472
H33.68	0x3344	Current acting index of accuracy compensation	0–65535	0	-	Unchangeable	" H33_en.68" on page 472
H33.69	0x3345	Forced homing start	0–1	0	-	At stop	" H33_en.69" on page 472
H33.70	0x3346	Forced homing mode	-32768–32767	-2	-	At stop	" H33_en.70" on page 473
H33.71	0x3347	Forced homing at low speed	0[mm/s]/[rpm]–1000[mm/s]/[rpm]	10	[mm/s]/[rpm]	At stop	" H33_en.71" on page 473

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.72	0x3348	Single-turn absolute position of accuracy compensation home of absolute encoder	0p to 4294967295p	0	p	At stop	" H33_en.72" on page 473
H33.74	0x334A	Min.pulse width of frequency-division output accuracy compensation	2count to 7count	3	count	At stop	" H33_en.74" on page 473
H33.75	0x334B	Accuracy compensation data unit	0: [um]/[arcsec] 1: [mm]/[mrad]	0	-	At stop	" H33_en.75" on page 474
H33.81	0x3351	Motor cogging torque ripple compensation sum	0count to 65535count	2000	count	At stop	" H33_en.81" on page 474

1.30 List of 1000h Object Dictionary

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1005h	1005h	SYNC message COB-ID	128–4294967295	128	-	Real-time	" 1005h" on page 474
1006h	1006h	Synchronization cycle	0us to 2147483647us	0	us	Real-time	" 1006h" on page 475
100Ch	100Ch	Node guarding time	0 ms–65535 ms	0	ms	Real-time	" 100Ch" on page 475
100dh	100dh	Life factor	0–255	0	-	Real-time	" 100dh" on page 475

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1014h	1014h	Emergency message COB-ID	0–4294967295	128	-	Real-time	*" 1014h" on page 476*
1016.01h	1016-01h	Consumer heartbeat time 1	0–2147483647	0	-	Real-time	*" 1016_en.01h" on page 476*
1016.02h	1016-02h	Consumer heartbeat time 2	0–2147483647	0	-	Real-time	*" 1016_en.02h" on page 476*
1016.03h	1016-03h	Consumer heartbeat time 3	0–2147483647	0	-	Real-time	*" 1016_en.03h" on page 477*
1016.04h	1016-04h	Consumer heartbeat time 4	0–2147483647	0	-	Real-time	*" 1016_en.04h" on page 477*
1016.05h	1016-05h	Consumer heartbeat time 5	0–2147483647	0	-	Real-time	*" 1016_en.05h" on page 477*
1017h	1017h	Producer heartbeat time	0 ms–65535 ms	0	ms	Real-time	*" 1017h" on page 477*
1400.01h	1400-01h	COB-ID of RPDO1	0–4294967295	512	-	Real-time	*" 1400_en.01h" on page 478*
1400.02h	1400-02h	Transmission type of RPDO1	0–255	255	-	Real-time	*" 1400_en.02h" on page 478*
1401.01h	1401-01h	COB-ID of RPDO2	0–4294967295	768	-	Real-time	*" 1401_en.01h" on page 479*
1401.02h	1401-02h	Transmission type of RPDO2	0–255	255	-	Real-time	*" 1401_en.02h" on page 479*
1402.01h	1402-01h	COB-ID of RPDO3	0–4294967295	2147484672	-	Real-time	*" 1402_en.01h" on page 479*
1402.02h	1402-02h	Transmission type of RPDO3	0–255	255	-	Real-time	*" 1402_en.02h" on page 479*
1403.01h	1403-01h	COB-ID of RPDO4	0–4294967295	2147484928	-	Real-time	*" 1403_en.01h" on page 480*
1403.02h	1403-02h	Transmission type of RPDO4	0–255	255	-	Real-time	*" 1403_en.02h" on page 480*
1600.00h	1600-00h	Number of valid mapped objects in RPDO1	0–8	3	-	Real-time	*" 1600_en.00h" on page 480*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1600.01h	1600-01h	Mapped object 1 in RPDO1	0–2147483647	1614807056	-	Real-time	"1600_en.01h" on page 480
1600.02h	1600-02h	Mapped object 2 in RPDO1	0–2147483647	1627324448	-	Real-time	"1600_en.02h" on page 481
1600.03h	1600-03h	Mapped object 3 in RPDO1	0–2147483647	1616904200	-	Real-time	"1600_en.03h" on page 481
1600.04h	1600-04h	Mapped object 4 in RPDO1	0–2147483647	0	-	Real-time	"1600_en.04h" on page 481
1600.05h	1600-05h	Mapped object 5 in RPDO1	0–2147483647	0	-	Real-time	"1600_en.05h" on page 482
1600.06h	1600-06h	Mapped object 6 in RPDO1	0–2147483647	0	-	Real-time	"1600_en.06h" on page 482
1600.07h	1600-07h	Mapped object 7 in RPDO1	0–2147483647	0	-	Real-time	"1600_en.07h" on page 482
1600.08h	1600-08h	Mapped object 8 in RPDO1	0–2147483647	0	-	Real-time	"1600_en.08h" on page 482
1601.00h	1601-00h	Number of valid mapped objects in RPDO2	0–8	2	-	Real-time	"1601_en.00h" on page 483
1601.01h	1601-01h	Mapped object 1 in RPDO2	0–2147483647	1618608160	-	Real-time	"1601_en.01h" on page 483
1601.02h	1601-02h	Mapped object 2 in RPDO2	0–2147483647	1619066912	-	Real-time	"1601_en.02h" on page 483
1601.03h	1601-03h	Mapped object 3 in RPDO2	0–2147483647	0	-	Real-time	"1601_en.03h" on page 484
1601.04h	1601-04h	Mapped object 4 in RPDO2	0–2147483647	0	-	Real-time	"1601_en.04h" on page 484
1601.05h	1601-05h	Mapped object 5 in RPDO2	0–2147483647	0	-	Real-time	"1601_en.05h" on page 484

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1601.06h	1601-06h	Mapped object 6 in RPDO2	0–2147483647	0	-	Real-time	" 1601_en.06h" on page 485
1601.07h	1601-07h	Mapped object 7 in RPDO2	0–2147483647	0	-	Real-time	" 1601_en.07h" on page 485
1601.08h	1601-08h	Mapped object 8 in RPDO2	0–2147483647	0	-	Real-time	" 1601_en.08h" on page 485
1602.00h	1602-00h	Number of valid mapped objects in RPDO3	0–8	0	-	Real-time	" 1602_en.00h" on page 485
1602.01h	1602-01h	Mapped object 1 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.01h" on page 486
1602.02h	1602-02h	Mapped object 2 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.02h" on page 486
1602.03h	1602-03h	Mapped object 3 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.03h" on page 486
1602.04h	1602-04h	Mapped object 4 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.04h" on page 487
1602.05h	1602-05h	Mapped object 5 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.05h" on page 487
1602.06h	1602-06h	Mapped object 6 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.06h" on page 487
1602.07h	1602-07h	Mapped object 7 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.07h" on page 487
1602.08h	1602-08h	Mapped object 8 in RPDO3	0–2147483647	0	-	Real-time	" 1602_en.08h" on page 488
1603.00h	1603-00h	Number of valid mapped objects in RPDO4	0–8	0	-	Real-time	" 1603_en.00h" on page 488
1603.01h	1603-01h	Mapped object 1 in RPDO4	0–2147483647	0	-	Real-time	" 1603_en.01h" on page 488

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1603.02h	1603-02h	Mapped object 2 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.02h" on page 489*
1603.03h	1603-03h	Mapped object 3 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.03h" on page 489*
1603.04h	1603-04h	Mapped object 4 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.04h" on page 489*
1603.05h	1603-05h	Mapped object 5 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.05h" on page 489*
1603.06h	1603-06h	Mapped object 6 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.06h" on page 490*
1603.07h	1603-07h	Mapped object 7 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.07h" on page 490*
1603.08h	1603-08h	Mapped object 8 in RPDO4	0–2147483647	0	-	Real-time	*" 1603_en.08h" on page 490*
1800.01h	1800-01h	COB-ID of TPDO1	0–4294967295	1073742208	-	Real-time	*" 1800_en.01h" on page 491*
1800.02h	1800-02h	Transmission type of TPDO1	0–255	255	-	Real-time	*" 1800_en.02h" on page 491*
1800.03h	1800-03h	Inhibit time of TPDO1	0–65535	500	100us	Real-time	*" 1800_en.03h" on page 491*
1800.05h	1800-05h	Event counter of TPDO1	0 ms–65535 ms	0	ms	Real-time	*" 1800_en.05h" on page 492*
1801.01h	1801-01h	COB-ID of TPDO2	0–4294967295	1073742464	-	Real-time	*" 1801_en.01h" on page 492*
1801.02h	1801-02h	Transmission type of TPDO2	0–255	255	-	Real-time	*" 1801_en.02h" on page 492*
1801.03h	1801-03h	Inhibit time of TPDO2	0–65535	500	100us	Real-time	*" 1801_en.03h" on page 493*
1801.05h	1801-05h	Event counter of TPDO2	0 ms–65535 ms	0	ms	Real-time	*" 1801_en.05h" on page 493*
1802.01h	1802-01h	COB-ID of TPDO3	0–4294967295	3221226368	-	Real-time	*" 1802_en.01h" on page 493*
1802.02h	1802-02h	Transmission type of TPDO3	0–255	255	-	Real-time	*" 1802_en.02h" on page 493*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1802.03h	1802-03h	Inhibit time of TPDO3	0–65535	500	100us	Real-time	*" 1802_en.03h" on page 494*
1802.05h	1802-05h	Event counter of TPDO3	0 ms–65535 ms	0	ms	Real-time	*" 1802_en.05h" on page 494*
1803.01h	1803-01h	COB-ID of TPDO4	0–4294967295	3221226624	-	Real-time	*" 1803_en.01h" on page 494*
1803.02h	1803-02h	Transmission type of TPDO4	0–255	255	-	Real-time	*" 1803_en.02h" on page 494*
1803.03h	1803-03h	Inhibit time of TPDO4	0–65535	500	100us	Real-time	*" 1803_en.03h" on page 495*
1803.05h	1803-05h	Event counter of TPDO4	0 ms–65535 ms	0	ms	Real-time	*" 1803_en.05h" on page 495*
1A00.00h	1A00-00h	Number of valid mapped objects in TPDO1	0–8	3	-	Real-time	*" 1A00_en.00h" on page 495*
1A00.01h	1A00-01h	Mapped object 1 in TPDO1	0–2147483647	1614872592	-	Real-time	*" 1A00_en.01h" on page 495*
1A00.02h	1A00-02h	Mapped object 2 in TPDO1	0–2147483647	1627193376	-	Real-time	*" 1A00_en.02h" on page 496*
1A00.03h	1A00-03h	Mapped object 3 in TPDO1	0–2147483647	1616969736	-	Real-time	*" 1A00_en.03h" on page 496*
1A00.04h	1A00-04h	Mapped object 4 in TPDO1	0–2147483647	0	-	Real-time	*" 1A00_en.04h" on page 496*
1A00.05h	1A00-05h	Mapped object 5 in TPDO1	0–2147483647	0	-	Real-time	*" 1A00_en.05h" on page 497*
1A00.06h	1A00-06h	Mapped object 6 in TPDO1	0–2147483647	0	-	Real-time	*" 1A00_en.06h" on page 497*
1A00.07h	1A00-07h	Mapped object 7 in TPDO1	0–2147483647	0	-	Real-time	*" 1A00_en.07h" on page 497*
1A00.08h	1A00-08h	Mapped object 8 in TPDO1	0–2147483647	0	-	Real-time	*" 1A00_en.08h" on page 497*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1A01.00h	1A01-00h	Number of valid mapped objects in TPDO2	0–8	2	-	Real-time	*" 1A01_en.00h" on page 498*
1A01.01h	1A01-01h	Mapped object 1 in TPDO2	0–2147483647	1617166368	-	Real-time	*" 1A01_en.01h" on page 498*
1A01.02h	1A01-02h	Mapped object 2 in TPDO2	0–2147483647	1617690656	-	Real-time	*" 1A01_en.02h" on page 498*
1A01.03h	1A01-03h	Mapped object 3 in TPDO2	0–2147483647	0	-	Real-time	*" 1A01_en.03h" on page 499*
1A01.04h	1A01-04h	Mapped object 4 in TPDO2	0–2147483647	0	-	Real-time	*" 1A01_en.04h" on page 499*
1A01.05h	1A01-05h	Mapped object 5 in TPDO2	0–2147483647	0	-	Real-time	*" 1A01_en.05h" on page 499*
1A01.06h	1A01-06h	Mapped object 6 in TPDO2	0–2147483647	0	-	Real-time	*" 1A01_en.06h" on page 500*
1A01.07h	1A01-07h	Mapped object 7 in TPDO2	0–2147483647	0	-	Real-time	*" 1A01_en.07h" on page 500*
1A01.08h	1A01-08h	Mapped object 8 in TPDO2	0–2147483647	0	-	Real-time	*" 1A01_en.08h" on page 500*
1A02.00h	1A02-00h	Number of valid mapped objects in TPDO3	0–8	0	-	Real-time	*" 1A02_en.00h" on page 500*
1A02.01h	1A02-01h	Mapped object 1 in TPDO3	0–2147483647	0	-	Real-time	*" 1A02_en.01h" on page 501*
1A02.02h	1A02-02h	Mapped object 2 in TPDO3	0–2147483647	0	-	Real-time	*" 1A02_en.02h" on page 501*
1A02.03h	1A02-03h	Mapped object 3 in TPDO3	0–2147483647	0	-	Real-time	*" 1A02_en.03h" on page 501*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1A02.04h	1A02-04h	Mapped object 4 in TPDO3	0–2147483647	0	-	Real-time	" 1A02_en.04h" on page 502
1A02.05h	1A02-05h	Mapped object 5 in TPDO3	0–2147483647	0	-	Real-time	" 1A02_en.05h" on page 502
1A02.06h	1A02-06h	Mapped object 6 in TPDO3	0–2147483647	0	-	Real-time	" 1A02_en.06h" on page 502
1A02.07h	1A02-07h	Mapped object 7 in TPDO3	0–2147483647	0	-	Real-time	" 1A02_en.07h" on page 502
1A02.08h	1A02-08h	Mapped object 8 in TPDO3	0–2147483647	0	-	Real-time	" 1A02_en.08h" on page 503
1A03.00h	1A03-00h	Number of valid mapped objects in TPDO4	0–8	0	-	Real-time	" 1A03_en.00h" on page 503
1A03.01h	1A03-01h	Mapped object 1 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.01h" on page 503
1A03.02h	1A03-02h	Mapped object 2 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.02h" on page 504
1A03.03h	1A03-03h	Mapped object 3 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.03h" on page 504
1A03.04h	1A03-04h	Mapped object 4 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.04h" on page 504
1A03.05h	1A03-05h	Mapped object 5 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.05h" on page 504
1A03.06h	1A03-06h	Mapped object 6 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.06h" on page 505
1A03.07h	1A03-07h	Mapped object 7 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.07h" on page 505
1A03.08h	1A03-08h	Mapped object 8 in TPDO4	0–2147483647	0	-	Real-time	" 1A03_en.08h" on page 505

1.31 List of 6000h Object Dictionary

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
603Fh	603Fh	Error code	0–65535	0	-	Unchangeable	"603Fh" on page 506
6040h	6040h	Control word	0–65535	0	-	Real-time	"6040h" on page 506
6041h	6041h	Status word	0–65535	0	-	Unchangeable	"6041h" on page 506
605Ah	605Ah	Quick stop mode	0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state 2: Ramp to stop as defined by 6085h, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 5: Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock state 6: Ramp to stop as defined by 6085h, keeping position lock state 7: Stop at emergency stop torque, keeping position lock state	2	-	Real-time	"605Ah" on page 507
605Ch	605Ch	Stop mode at S-OFF	–4: Ramp to stop as defined by 6085h, keeping dynamic braking state –3: Stop at zero speed, keeping dynamic braking state –2: Ramp to stop as defined by 6084h/ 609Ah, keeping dynamic braking state –1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/ 609Ah, keeping de-energized state 2: Dynamic braking stop, keeping de-energized state	0	-	Real-time	"605Ch" on page 507

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
605Dh	605Dh	Halt mode	1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping position lock state 2: Ramp to stop as defined by 6085h, keeping position lock state 3: Stop at emergency stop torque, keeping position lock state	1	-	Real-time	*" 605Dh" on page 508*
605Eh	605Eh	Stop mode at No. 2 fault	–5: Stop at zero speed, keeping dynamic braking state –4: Stop at emergency stop torque, keeping dynamic braking state –3: Ramp to stop as defined by 6085h, keeping dynamic braking state –2: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping dynamic braking state –1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping de-energized state 2: Ramp to stop as defined by 6085h, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 4: Dynamic braking stop, keeping de-energized state	2	-	Real-time	*" 605Eh" on page 508*
6060h	6060h	Servo drive mode	1: Profile position mode (pp) 3: Profile velocity mode (pv) 4: Profile torque mode (pt) 6: Homing mode (hm) 7: Interpolation mode (ip)	0	-	Real-time	*" 6060h" on page 509*
6061h	6061h	Operation mode display	1: Profile position mode (pp) 3: Profile velocity mode (pv) 4: Profile torque mode (pt) 6: Homing mode (hm) 7: Interpolation mode (ip)	0	-	Unchangeable	*" 6061h" on page 509*
6062h	6062h	Position reference	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*" 6062h" on page 510*
6063h	6063h	Position actual value	–2147483648 to +2147483647	0	Pulse	Unchangeable	*" 6063h" on page 510*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
6064h	6064h	Position actual value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	"6064h" on page 510
6065h	6065h	Following error window	0 to 4294967295	219895614	Reference unit	Real-time	"6065h" on page 511
6066h	6066h	Defines the time lapse to trigger excessive position deviation (EB00.0).	0 ms–65535 ms	0	ms	Real-time	"6066h" on page 511
6067h	6067h	Position window	0 to 4294967295	46976	Reference unit	Real-time	"6067h" on page 511
6068h	6068h	Position window time	0 ms–65535 ms	0	ms	Real-time	"6068h" on page 512
606Ch	606Ch	Actual speed	–2147483648 to +2147483647	0	Reference unit/s	Unchangeable	"606Ch" on page 512
606Dh	606Dh	Velocity window	0 RPM to 65535 RPM	10	RPM	Real-time	"606Dh" on page 512
606Eh	606Eh	Velocity window time	0 ms–65535 ms	0	ms	Real-time	"606Eh" on page 513
606Fh	606Fh	Zero speed signal threshold	0 RPM to 65535 RPM	10	RPM	Real-time	"606Fh" on page 513
6070h	6070h	Velocity threshold time	0 ms–65535 ms	0	ms	Real-time	"6070h" on page 514
6071h	6071h	Target torque	-4000–4000	0	0.001	Real-time	"6071h" on page 514
6072h	6072h	Max. torque reference	0. to 4000.	3500	0.001	Real-time	"6072h" on page 515
6074h	6074h	Torque reference	-4000–4000	0	0.001	Unchangeable	"6074h" on page 515
6077h	6077h	Actual torque	-4000–4000	0	0.001	Unchangeable	"6077h" on page 515
607Ah	607Ah	Target position	-2147483648 to 2147483647	0	Reference unit	Real-time	"607Ah" on page 516

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
607Ch	607Ch	Home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	*"607Ch" on page 516*
607D.01h	607D-01h	Min. position limit	-2147483648 to 2147483647	-2147483648	Reference unit	Real-time	*"607D_en.01h" on page 517*
607D.02h	607D-02h	Max. position limit	-2147483648 to 2147483647	2147483647	Reference unit	Real-time	*"607D_en.02h" on page 517*
607Eh	607Eh	Reference polarity	0–255	0	-	Real-time	*"607Eh" on page 517*
607Fh	607Fh	Max. speed	0 to 4294967295	4294967295	Reference unit/s	Real-time	*"607Fh" on page 518*
6081h	6081h	Profile velocity	0 to 4294967295	111848106	Reference unit/s	Real-time	*"6081h" on page 518*
6083h	6083h	Profile acceleration	0 to 4294967295	4294967295	Reference unit/s^2	Real-time	*"6083h" on page 518*
6084h	6084h	Profile deceleration	0 to 4294967295	4294967295	Reference unit/s^2	Real-time	*"6084h" on page 519*
6085h	6085h	Quick stop deceleration	0 to 4294967295	2147483647	Reference unit/s^2	Real-time	*"6085h" on page 519*
6087h	6087h	Torque slope	0–4294967295	4294967295	0.1%/s	Real-time	*"6087h" on page 520*
6091.01h	6091-01h	Motor resolution	1–4294967295	1	-	At stop	*"6091_en.01h" on page 520*
6091.02h	6091-02h	Shaft resolution	1–4294967295	1	-	At stop	*"6091_en.02h" on page 520*
6098h	6098h	Homing method	-3–35	1	-	Real-time	*"6098h" on page 521*
6099.01h	6099-01h	Speed during search for switch	0 to 4294967295	111848106	Reference unit/s	At stop	*"6099_en.01h" on page 522*
6099.02h	6099-02h	Speed during search for zero	0 to 4294967295	11184810	Reference unit/s	At stop	*"6099_en.02h" on page 522*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
609Ah	609Ah	Homing acceleration	0 to 4294967295	4294967295	Reference unit/s²	Real-time	*"609Ah" on page 523*
60B8h	60B8h	Touch probe function	0–65535	0	-	Real-time	*"60B8h" on page 523*
60B9h	60B9h	Touch probe status	0–65535	0	-	Unchangeable	*"60B9h" on page 524*
60BAh	60BAh	Touch probe 1 positive edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BAh" on page 525*
60BBh	60BBh	Touch probe 1 negative edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BBh" on page 526*
60BCh	60BCh	Touch probe 2 positive edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BCh" on page 526*
60BDh	60BDh	Touch probe 2 negative edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BDh" on page 526*
60C1.01h	60C1-01h	Interpolation displacement	-2147483648 to 2147483647	0	Reference unit	Real-time	*"60C1_en.01h" on page 527*
60C2.01h	60C2-01h	Interpolation time period	1–20	1	-	Real-time	*"60C2_en.01h" on page 527*
60C2.02h	60C2-02h	Interpolation time units	-3–-3	-3	-	Real-time	*"60C2_en.02h" on page 527*
60C5h	60C5h	Max. acceleration	0 to 4294967295	4294967295	Reference unit/s²	Real-time	*"60C5h" on page 528*
60C6h	60C6h	Max. deceleration	0 to 4294967295	4294967295	Reference unit/s²	Real-time	*"60C6h" on page 528*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
60D5h	60D5h	Touch probe 1 positive edge counter	0–65535	0	-	Unchangeable	"60D5h" on page 528
60D6h	60D6h	Touch probe 1 negative edge counter	0–65535	0	-	Unchangeable	"60D6h" on page 528
60D7h	60D7h	Touch probe 2 positive edge counter	0–65535	0	-	Unchangeable	"60D7h" on page 529
60D8h	60D8h	Touch probe 2 negative edge counter	0–65535	0	-	Unchangeable	"60D8h" on page 529
60E0h	60E0h	Positive torque limit	0–4000	3500	0.001	Real-time	"60E0h" on page 529
60E1h	60E1h	Negative torque limit	0–4000	3500	0.001	Real-time	"60E1h" on page 530
60F4h	60F4h	Position deviation	-2147483648 to 2147483647	0	Reference unit	Unchangeable	"60F4h" on page 530
60FCh	60FCh	Position reference	-2147483648p to 2147483647p	0	p	Unchangeable	"60FCh" on page 530
60FDh	60FDh	DI state	0–4294967295	0	-	Unchangeable	"60FDh" on page 530
60FFh	60FFh	PV target velocity	–2147483648 to +2147483647	0	Reference unit/s	Real-time	"60FFh" on page 531
60FE.01h	60FE-01h	Physical output	0–4294967295	0	-	Real-time	"60FE_en.01h" on page 532
60FE.02h	60FE-02h	Bitmask	0–4294967295	0	-	Real-time	"60FE_en.02h" on page 532

2 Description of Parameters [P]

2.1 H00 Servo Motor Parameters

H00.00 Motor SN

Hex:	2000-01h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	14101	Change:	At stop

Value Range:

20000: Linear motor - pulse encoder
14202: Linear motor - Inovance 23-bit encoder
20001: DDR motor - pulse encoder
14201: DDR motor - Inovance communication 23-bit encoder
20002: Rotary motor - pulse encoder
14000: Rotary motor - Inovance communication 20-bit encoder
14101: Rotary motor - Inovance communication 23-bit encoder
14020: Rotary motor - Harmonic 20-bit encoder - 2.5M baud rate
14021: Rotary motor - Harmonic 17-bit encoder - 2.5M baud rate
14022: Rotary motor - Harmonic 17-bit encoder - 4M baud rate
14120: Rotary motor - Nikon 20-bit encoder - 2.5M baud rate
14121: Rotary motor - Nikon 17-bit encoder - 2.5M baud rate
14122: Rotary motor - Nikon 17-bit encoder - 4M baud rate
14130: Rotary motor - TAMAGAWA 17-bit encoder
14131: Rotary motor - TAMAGAWA 23-bit encoder

Description

20000: Linear motor - pulse encoder
14202: Linear motor - Inovance 23-bit encoder
20001: DDR motor - pulse encoder
14201: DDR motor - Inovance communication 23-bit encoder
20002: Rotary motor - pulse encoder
14000: Rotary motor - Inovance communication 20-bit encoder
14101: Rotary motor - Inovance communication 23-bit encoder
14020: Rotary motor - Harmonic 20-bit encoder - 2.5M baud rate
14021: Rotary motor - Harmonic 17-bit encoder - 2.5M baud rate
14022: Rotary motor - Harmonic 17-bit encoder - 4M baud rate
14120: Rotary motor - Nikon 20-bit encoder - 2.5M baud rate
14121: Rotary motor - Nikon 17-bit encoder - 2.5M baud rate
14122: Rotary motor - Nikon 17-bit encoder - 4M baud rate
14130: Rotary motor - TAMAGAWA 17-bit encoder
14131: Rotary motor - TAMAGAWA 23-bit encoder

H00.02 **Customized No.**

Hex:	2000-03h	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	4294967295.00	Data Type:	UInt32
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–4294967295.00

Description

Differentiates the customized MCU software version, which is not applicable to standard models.

H00.04 **Encoder version**

Hex:	2000-05h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–6553.5

Description

Saved in the encoder and used to differentiate the encoder software version.

H00.05 **Serial-type motor code**

Hex:	2000-06h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays the code of the serial-type motor, which is determined by the motor model and unchangeable.

H00.06 **FPGA customized SN**

Hex:	2000-07h	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–655.35

Description

Differentiates the customized FPGA software version, which is not applicable to standard models.

H00.07 STO version

Hex:	2000-08h	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–655.35

Description

Display the software version number of STO function.

H00.08 Bus encoder type

Hex:	2000-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

14100: Multi-turn absolute encoder
Others: Single-turn absolute encoder

H00.40 Motor control type

Hex:	2000-29h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: General-purpose rotary motor (ROT)
1: Direct drive rotary motor (DDR)
2: Direct drive linear motor (DDL)
3: Voice coil motor (VOL)

Description

The motor type supported by the drive.
0: General-purpose rotary motor (ROT)
1: Direct drive rotary motor (DDR)
2: Direct drive linear motor (DDL)
3: Voice coil motor (VOL)

H00.45 Encoder pitch 1

Hex:	2000-2Eh	Effective mode:	Upon the next power-on
Min.:	0.01	Unit:	[mm]/[deg]
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	At stop

Value Range:
0.01[mm]/[deg]–655.35[mm]/[deg]
Description
Defines the encoder pitch characteristics, which should be used together with encoder pitch fluctuation suppressor 1 (see details in H08.90).

H00.46 Encoder pitch 2

Hex:	2000-2Fh	Effective mode:	Upon the next power-on
Min.:	0.01	Unit:	[mm]/[deg]
Max.:	655.35	Data Type:	UInt16
Default:	0.50	Change:	At stop

Value Range:
0.01[mm]/[deg]–655.35[mm]/[deg]
Description
Defines the encoder pitch characteristics, which should be used together with encoder pitch fluctuation suppressor 2 (see details in H08.90).

H00.48 Linear motor pole pitch (N-S)

Hex:	2000-31h	Effective mode:	Upon the next power-on
Min.:	0.00	Unit:	mm
Max.:	655.35	Data Type:	UInt16
Default:	16.00	Change:	At stop

Value Range:
0.00 millimeters–655.35 millimeters
Description
Linear motor pole pitch.

H00.49 **Direct drive motor encoder resolution**

Hex:	2000-32h	Effective mode:	Upon the next power-on
Min.:	0.000	Unit:	um/p
Max.:	65.535	Data Type:	UInt16
Default:	1.000	Change:	At stop

Value Range:

0.000um/p–65.535um/p

Description

Direct drive motor encoder resolution.

H00.55 **Rated torque**

Hex:	2000-38h	Effective mode:	Upon the next power-on
Min.:	0.00	Unit:	[N]/[N·m]
Max.:	42949672.95	Data Type:	UInt32
Default:	2.00	Change:	At stop

Value Range:

0.00[N]/[N·m]–42949672.95[N]/[N·m]

Description

-

H00.57 **Max. torque**

Hex:	2000-3Ah	Effective mode:	Upon the next power-on
Min.:	0.00	Unit:	[N]/[N·m]
Max.:	42949672.95	Data Type:	UInt32
Default:	7.00	Change:	At stop

Value Range:

0.00[N]/[N·m]–42949672.95[N]/[N·m]

Description

-

H00.59 **Encoder counting direction**

Hex:	2000-3Ch	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Forward

1: Reverse

Description
Motor phase sequence:
0: Forward
1: Reverse

2.2 H01 Servo Drive Parameters

H01.00 MCU software version

Hex:	2001-01h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0–6553.5
Description
Displays MCU software version (with one decimal place).

H01.01 FPGA software version

Hex:	2001-02h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0–6553.5
Description
Displays the FPGA software version, with 1 decimal place.

H01.02 Servo drive series No.

Hex:	2001-03h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Display servo drive serial number, with 0 decimal place.

H01.06 **Board software version**

Hex:	2001-07h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–6553.5

Description

Display board software version number, with 1 decimal place.

H01.10 **Drive series No.**

Hex:	2001-0Bh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	3	Change:	At stop

Value Range:

2: S1R6
3: S2R8
5: S5R5
6: S7R6
7: S012
8: S018
9: S022
10: S027
10001: T3R5
10002: T5R4
10003: T8R4
10004: T012
10005: T017
10006: T021
10007: T026

Description

Displays the drive series number, with no decimal place.

H01.11 **DC-AC voltage class**

Hex:	2001-0Ch	Effective mode:	-
Min.:	0	Unit:	V
Max.:	65535	Data Type:	UInt16
Default:	220	Change:	Unchangeable

Value Range:
0 V–65535 V
Description
Display inverter voltage level, with 0 decimal place.

H01.12 Drive rated power

Hex:	2001-0Dh	Effective mode:	-
Min.:	0.00	Unit:	kW
Max.:	10737418.24	Data Type:	UInt32
Default:	0.40	Change:	Unchangeable

Value Range:
0.00 kW–10737418.24kW
Description
Display the rated power of the drive, with 2 decimal places.

H01.14 Max. output power of the drive

Hex:	2001-0Fh	Effective mode:	-
Min.:	0.00	Unit:	kW
Max.:	10737418.24	Data Type:	UInt32
Default:	0.40	Change:	Unchangeable

Value Range:
0.00 kW–10737418.24kW
Description
Displays the maximum output power of the drive, with 2 decimal places.

H01.16 Rated output current of the drive

Hex:	2001-11h	Effective mode:	-
Min.:	0.00	Unit:	A
Max.:	10737418.24	Data Type:	UInt32
Default:	2.80	Change:	Unchangeable

Value Range:
0.00 A–10737418.24 A
Description
Displays the rated output current of the drive, with 2 decimal places.

H01.18 Max. output current of the drive

Hex:	2001-13h	Effective mode:	-

Min.:	0.00	Unit:	A
Max.:	10737418.24	Data Type:	UInt32
Default:	10.10	Change:	Unchangeable

Value Range:

0.00 A–10737418.24 A

Description

Displays the maximum output current of the drive, with 2 decimal places.

H01.40 DC bus overvoltage protection threshold

Hex:	2001-29h	Effective mode:	Real time
Min.:	0	Unit:	V
Max.:	2000	Data Type:	UInt16
Default:	420	Change:	Real-time

Value Range:

0 V–2000 V

Description

Displays DC bus overvoltage protection threshold, with 0 decimal place.

H01.75 Current loop amplification factor

Hex:	2001-4Ch	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00–655.35

Description

Displays current loop amplification coefficient, with 2 decimal places.

H01.88 Junction temperature parameter version 1

Hex:	2001-59h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–6553.5

Description

Displays version 1 of the junction temperature parameter.

H01.89 **Junction temperature parameter version 2**

Hex:	2001-5Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays version 2 of the junction temperature parameter.

2.3 H02 Basic Control Parameters

H02.00 **Control mode**

Hex:	2002-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Speed control mode
1: Position control mode
2: Torque control mode
3: Torque/Speed control mode
4: Speed/Position control mode
5: Torque/Position control mode
6: Torque/Speed/Position compound mode
7: Process segment
8: CANopen mode

Description

0: Speed control mode
1: Position control mode
2: Torque control mode
3: Torque/Speed control mode
4: Speed/Position control mode
5: Torque/Position control mode
6: Torque/Speed/Position compound mode
7: Process segment
8: CANopen mode

H02.01 **Absolute system selection**

Hex:	2002-02h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Incremental mode

1: Absolute position linear mode

2: Absolute position rotation mode

3: Absolute position linear mode (without encoder overflow alarm)

4: Absolute position single-turn mode

Description

Used to set the absolute position function.

H02.02 **Rotation direction selection**

Hex:	2002-03h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

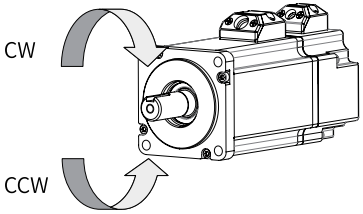
0: Counterclockwise (CCW) as forward direction

1: Clockwise (CW) as forward direction

Description

Defines the forward direction of the motor when viewed from the motor shaft side.

Value	Rotating direction	Remarks
0	Counterclockwise (CCW) as forward direction	Defines the CCW direction as the forward direction when a forward run command is received, indicating the motor rotates in the CCW direction when viewed from the motor shaft side.
1	Counterclockwise (CW) as forward direction	When a forward command is input, the motor rotates in CW direction viewed from the motor shaft side, that is, the motor rotates clockwise.



H02.03 Output pulse phase

Hex:	2002-04h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

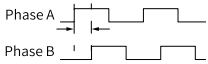
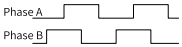
Value Range:

0: Phase A leads phase B

1: Phase A lags behind phase B

Description

Defines the relationship between phase A and phase B on the condition that the motor direction of rotation remains unchanged when pulse output is enabled.

Value	Output pulse phase	Remarks
0	Phase A leads phase B.	Phase A leads phase B by 90° in encoder frequency-division output pulses. 
1	Phase A lags phase B.	Phase A lags phase B by 90° in encoder frequency-division output pulses. 

H02.05 Stop mode at S-ON OFF

Hex:	2002-06h	Effective mode:	At stop
Min.:	-4	Unit:	-
Max.:	2	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-4: Stop based on ramp 2, keeping dynamic braking state
-3: Stop at zero speed, keeping dynamic braking state
-2: Stop based on ramp 1, keeping dynamic braking state
-1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Stop based on ramp 1, keeping de-energized state
2: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the motor for stopping rotating upon S-ON OFF and the motor status after stop.

Note: If the brake is enabled, H02.05 is forced to –4: Ramp to stop as defined by 6085h, keeping dynamic braking state.

H02.06 Stop mode at No. 2 fault

Hex:	2002-07h	Effective mode:	At stop
Min.:	-5	Unit:	-
Max.:	4	Data Type:	Int16
Default:	2	Change:	Real-time

Value Range:

-5: Stop at zero speed, keeping dynamic braking state
-4: Stop at emergency stop torque, keeping dynamic braking state
-3: Stop based on ramp 2, keeping dynamic braking state
-2: Stop based on ramp 1, keeping dynamic braking state
-1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Stop based on ramp 1, keeping de-energized state
2: Stop based on ramp 2, keeping de-energized state
3: Stop at emergency stop torque, keeping de-energized state
4: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when a No. 2 fault occurs.
Note: If the brake is enabled, H02.06 is forced to –3: Ramp to stop as defined by 6085h, keeping dynamic braking state.

H02.07 Stop mode at overtravel

Hex:	2002-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Coast to stop, keeping de-energized state
1: Stop at zero speed, keeping position lock state
2: Stop at zero speed, keeping de-energized state
3: Stop based on ramp 2, keeping de-energized state
4: Stop based on ramp 2, keeping position lock state
5: Dynamic braking stop, keeping de-energized state
6: Dynamic braking stop, keeping dynamic braking state
7: Not responding to overtravel

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when overtravel occurs.
Note: When H02.07 is set to 7 (Not responding to overtravel), some PLC may stop sending position references to stop the drive.
Note: After the brake function is enabled, H02.07 will be forcibly set to "4: Ramp to stop as defined by 6085h, keeping position lock state".

H02.08 **Stop mode at No.1 fault**

Hex:	2002-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0: Coast to stop, keeping de-energized state

1: Dynamic braking stop, keeping de-energized state

2: Dynamic braking stop, keeping dynamic braking state

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when a No. 1 fault occurs.

Note: After the brake function is enabled, H02.08 will be forcibly set to "2: Dynamic braking stop, keeping dynamic braking state".

H02.09 **Delay from brake output ON to command received**

Hex:	2002-0Ah	Effective mode:	At stop
Min.:	0	Unit:	ms
Max.:	500	Data Type:	UInt16
Default:	250	Change:	Real-time

Value Range:

0 ms–500 ms

Description

Defines the delay from the moment the brake output signal is ON to the moment the servo drive starts to receive commands after power-on.

H02.10 **Delay from brake output OFF to motor de-energized**

Hex:	2002-0Bh	Effective mode:	Real time
Min.:	50	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:

50 ms–1000 ms

Description

Defines the delay from the moment brake output is OFF to the moment when the motor at standstill enters the de-energized status.

H02.11 Motor speed threshold at brake output OFF in rotation state

Hex:	2002-0Ch	Effective mode:	Real time
Min.:	20	Unit:	RPM
Max.:	3000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

20 rpm to 3000 rpm

Description

Defines the motor speed threshold when brake (BK) output is OFF in the rotating state.

H02.12 Delay from S-ON OFF to brake output OFF in rotation state

Hex:	2002-0Dh	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:

1 ms–65535 ms

Description

Sets the delay time from BK OFF to S-ON OFF when the motor is in rotating state.

H02.15 LED Alarm Display

Hex:	2002-10h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output alarm information immediately

1: Not output alarm information

Description

Defines whether to switch the keypad to the fault display mode when a No. 3 fault occurs.

H02.16 Brake enable switch

Hex:	2002-11h	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:

0: OFF

1: ON

Description

Turn on or off the brake function.

H02.17 Stop mode upon main circuit power failure

Hex:	2002-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Keep current action

1: Stop upon fault as defined by H02.06

2: Stop at S-ON OFF as defined by H02.05

3: Stop quickly as defined by H02.18

Description

Defines the stop mode of the motor for stopping rotating upon main circuit power failure.

H02.18 Quick stop mode

Hex:	2002-13h	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Coast to stop, keeping de-energized state

1: Stop by ramp 1, keeping de-energized state

2: Stop by ramp 2, keeping de-energized state

3: Stop at emergency stop torque, keeping de-energized state

5: Stop by ramp 1, keeping position lock state

6: Stop by ramp 2, keeping position lock state

7: Stop at emergency stop torque, keeping position lock state

Description

Defines the deceleration mode of the motor for stopping rotating upon quick stop and the motor status after stop.

Note: When the brake function is enabled and the value of H02.18 is lower than 4, the stop mode is forcibly set to "2: Ramp to stop as defined by 6085h, keeping de-energized state".

H02.21 **Permissible minimum resistance of braking resistor**

Hex:	2002-16h	Effective mode:	-
Min.:	1	Unit:	Ω
Max.:	1000	Data Type:	UInt16
Default:	40	Change:	Unchangeable

Value Range:

1Ω to 1000Ω

Description

-

H02.22 **Power of built-in braking resistor**

Hex:	2002-17h	Effective mode:	-
Min.:	0	Unit:	W
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Unchangeable

Value Range:

0W–65535W

Description

The power of the built-in braking resistor is only related to the servo drive model, which is unmodifiable.

H02.23 **Resistance of built-in braking resistor**

Hex:	2002-18h	Effective mode:	-
Min.:	0	Unit:	Ω
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Unchangeable

Value Range:

0Ω to 65535Ω

Description

The resistance of the built-in braking resistor is only related to the servo drive model, which is unmodifiable.

Table 2–1 Specifications of the braking resistor

Servo Drive Model	Specifications of Built-in Braking Resistor			Min. Permissible Resistance of External Braking Resistor (Ω) (H02.21)
	Resistance (Ω)	Power (Pr) (W)	Processing Power (Pa) (W)	
SV670*S1R6I-*INT	-	-	-	40
SV670*S2R8I-*INT	-	-	-	
SV670*S5R5I-*INT	50	50	40	
SV670*S7R6I-*INT	25	80	64	20
SV670*S012I-*INT				15
SV670*S018I-*INT	20	100	80	20
SV670*S022I-*INT				
SV670*S027I-*INT				
SV670*T5R4I-*INT	100	80	64	60
SV670*T8R4I-*INT	50			45
SV670*T012I-*INT				40
SV670*T017I-*INT	35	100	80	35
SV670*T021I-*INT				25
SV670*T026I-*INT				

H02.24 Resistor heat dissipation coefficient

Hex:	2002-19h	Effective mode:	Real time
Min.:	10	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

10% to 100%

Description

Defines the heat dissipation coefficient of the braking resistor, which is applicable to both external and built-in braking resistors.

Defines the heat dissipation coefficient of the braking resistor, which is applicable to both external and built-in braking resistors.

Set this parameter properly according to actual heat dissipation conditions of the resistor.

Recommendations:

Generally, the value of H02.24 cannot exceed 30% for natural cooling.

The value of H02.24 cannot exceed 50% for forced air cooling.

H02.25 Braking resistor type

Hex:	2002-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	3	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:

0: Built-in

1: External, natural cooling

2: External, forced air cooling

3: No resistor needed

Description

Defines the resistor type and the mode of absorbing and releasing the braking energy.

H02.26 Power of external braking resistor

Hex:	2002-1Bh	Effective mode:	Real time
Min.:	1	Unit:	W
Max.:	65535	Data Type:	UInt16
Default:	40	Change:	Real-time

Value Range:

1 W–65535W

Description

Defines the power of external braking resistor.

H02.27 Resistance of external braking resistor

Hex:	2002-1Ch	Effective mode:	Real time
Min.:	15	Unit:	Ω
Max.:	1000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

15Ω to 1000Ω

Description

Defines the resistance of the external braking resistor.

H02.28 Parameters Initialization

Hex:	2002-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Parameters in group H02 and above initialized
1: Parameters in group H00, H02 and above initialized
2: All parameters initialized (default values used for model-related parameters)

Description

Settings of factory restore.
0: Parameters in group H02 and above initialized
1: Parameters in group H00, H02 and above initialized
2: All parameters initialized (default values used for model-related parameters)

H02.30 User password

Hex:	2002-1Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

-

H02.31 System parameter initialization

Hex:	2002-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation
1: Restore default settings
2: Clear fault records

Description

Used to restore default values or clear fault records.

H02.32 Selection of parameters in group H0b

Hex:	2002-21h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0–99

Description

Sets the offset of H0b parameters to be displayed on the operating panel.
For example, the setpoint 0 indicates the value of H0b.00 (Motor speed actual value) is displayed on the keypad.
The setpoint 1 indicates the value of H0b.01 is displayed on the operating panel.

H02.35 Keypad data update frequency

Hex:	2002-24h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 Hz–20 Hz

Description

-

H02.38 Overload time of external resistor

Hex:	2002-27h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	s
Max.:	200	Data Type:	UInt16
Default:	40	Change:	Real-time

Value Range:

0s to 200s

Description

Set the overload time threshold of the external braking resistor.

H02.41 Manufacturer password

Hex:	2002-2Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

-

H02.47 **Delay time from power cable breakage to brake OFF**

Hex:	2002-30h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–1000 ms

Description

Sets the delay time from power cable breakage to brake OFF.

2.4 H03 Terminal Input Parameters

H03.00 **DI function allocation 1 (activated upon power-on)**

Hex:	2003-01h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Corresponding to null
1: Corresponding to FunIN.1
2: Corresponding to FunIN.2
4: Corresponding to FunIN.3
8: Corresponding to FunIN.4
16: Corresponding to FunIN.5
32: Corresponding to FunIN.6
64: Corresponding to FunIN.7
128: Corresponding to FunIN.8
256: Corresponding to FunIN.9
512: Corresponding to FunIN.10
1024: Corresponding to FunIN.11
2048: Corresponding to FunIN.12
4096: Corresponding to FunIN.13
8192: Corresponding to FunIN.14
16384: Corresponding to FunIN.15
32768: Corresponding to FunIN.16

Description

Used to enable a certain DI function (FunIN.1 to FunIN.16) to be activated immediately at next power-on.

H03.01 **DI function allocation 2 (activated upon power-on)**

Hex:	2003-02h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Corresponding to null
1: Corresponding to FunIN.17
2: Corresponding to FunIN.18
4: Corresponding to FunIN.19
8: Corresponding to FunIN.20
16: Corresponding to FunIN.21
32: Corresponding to FunIN.22
64: Corresponding to FunIN.23
128: Corresponding to FunIN.24
256: Corresponding to FunIN.25
512: Corresponding to FunIN.26
1024: Corresponding to FunIN.27
2048: Corresponding to FunIN.28
4096: Corresponding to FunIN.29
16384: Corresponding to FunIN.31
32768: Corresponding to FunIN.32

Description

Used to enable a certain DI function (FunIN.17 to FunIN.32) to be activated immediately at next power-on.

H03.02 **DI1 function**

Hex:	2003-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	14	Change:	Real-time

Value Range:

0: No assignment
1: S-ON
2: Warning reset signal
3: Gain switchover switch
4: Switchover between main and auxiliary commands
5: Multi-reference direction
6: Multi-reference switchover CMD1
7: Multi-reference switchover CMD2
8: Multi-reference switchover CMD3
9: Multi-reference switchover CMD4
10: Mode switchover M1-SEL
11: Mode switchover M2-SEL
12: Zero clamp enable signal
13: Position reference inhibited
14: Positive limit switch
15: Reverse limit switch
16: Positive external torque limit
17: Negative external torque limit
18: Forward jog
19: Reverse jog
20: Step enable
21: Handwheel override signal 1
22: Handwheel override signal 2
23: Hand wheel enable
24: Electronic gear ratio selection
25: Torque reference direction
26: Speed reference direction
27: Position reference direction
28: Multi-position reference enable
29: Interrupt positioning clear
31: Home switch
32: Homing enable
33: Interrupt positioning inhibited
34: Emergency stop
35: Position deviation clear

36: Internal speed limit source
37: Pulse reference inhibited
38: Touch probe 1
39: Touch probe 2
40: Multi-speed enable
41: Current position as home
42: Axis control command executed immediately
43: Axis control command not executed immediately
44: Positioning and command completed signal clear
45: Interrupt positioning enable
46: Process segment enable
47: Process segment command switchover 1
48: Process segment command switchover 2
49: Process segment command switchover 3
50: Process segment command switchover 4
51: Event trigger process segment 1
52: Event trigger process segment 2
53: Event trigger process segment 3
54: Event trigger process segment 4
55: Process segment pause

Description

Defines the function of DI1.

H03.03 DI1 logic selection

Hex:	2003-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open
1: Closed

Description

Used to set the level logic of DI1 when the function assigned to DI is active.

H03.04 DI2 function

Hex:	2003-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:

See H03.02.

Description

-

H03.05 DI2 logic selection

Hex:	2003-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H03.06 DI3 function

Hex:	2003-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	13	Change:	Real-time

Value Range:

See H03.02.

Description

Defines the function of DI3.

H03.07 DI3 logic selection

Hex:	2003-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H03.08 DI4 function

Hex:	2003-09h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:
See H03.02.
Description
-

H03.09 DI4 logic selection

Hex:	2003-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Normally open
1: Closed
Description
-

H03.10 DI5 function

Hex:	2003-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:
See H03.02.
Description
-

H03.11 DI5 logic selection

Hex:	2003-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Normally open
1: Closed
Description
-

H03.12 **DI6 function**

Hex:	2003-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H03.02.

Description

-

H03.13 **DI6 logic selection**

Hex:	2003-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H03.14 **DI7 function**

Hex:	2003-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	45	Change:	Real-time

Value Range:

See H03.02.

Description

-

H03.15 **DI7 logic selection**

Hex:	2003-10h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open
1: Closed
Description
-

H03.16 DI8 function

Hex:	2003-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	31	Change:	Real-time

Value Range:
See H03.02.
Description
-

H03.17 DI8 logic selection

Hex:	2003-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Normally open
1: Closed
Description
-

H03.34 DI function allocation 3 (activated upon power-on)

Hex:	2003-23h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Corresponding to null
1: Corresponding to FunIN.33
2: Corresponding to FunIN.34
4: Corresponding to FunIN.35
8: Corresponding to FunIN.36
16: Corresponding to FunIN.37
32: Corresponding to FunIN.38
64: Corresponding to FunIN.39
128: Corresponding to FunIN.40
256: Corresponding to FunIN.41
512: Corresponding to FunIN.42
1024: Corresponding to FunIN.43
2048: Corresponding to FunIN.44
4096: Corresponding to FunIN.45
8192: Corresponding to FunIN.46
16384: Corresponding to FunIN.47
32768: Corresponding to FunIN.48

Description

Used to enable a certain DI function (FunIN.33 to FunIN.37) to be activated immediately at next power-on.

H03.35 **DI function allocation 4 (activated upon power-on)**

Hex:	2003-24h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Corresponding to null
1: Corresponding to FunIN.49
2: Corresponding to FunIN.50
4: Corresponding to FunIN.51
8: Corresponding to FunIN.52
16: Corresponding to FunIN.53
32: Corresponding to FunIN.54
64: Corresponding to FunIN.55
128: Corresponding to FunIN.56
256: Corresponding to FunIN.57
512: Corresponding to FunIN.58
1024: Corresponding to FunIN.59
2048: Corresponding to FunIN.60
4096: Corresponding to FunIN.61
8192: Corresponding to FunIN.62
16384: Corresponding to FunIN.63

Description

Used to enable a certain DI function (FunIN.49 to FunIN.64) to be activated immediately at next power-on.

H03.50 Voltage-type AI1 offset

Hex:	2003-33h	Effective mode:	Real time
Min.:	-5000	Unit:	mV
Max.:	5000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-5000 mV–5000 mV

Description

Defines the actual AI1 input voltage when the drive sampling voltage is 0 after zero drift correction.

H03.51 Voltage-type AI1 input filter time constant

Hex:	2003-34h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00 ms–655.35 ms

Description

It sets the filter time constant of voltage signal input from AI1.

Set this parameter properly to avoid motor reference fluctuation caused by unstable analog voltage input and reduce motor misoperation caused by interference signals.
The filter function cannot eliminate or suppress zero drift or dead zone.

H03.53 Voltage-type AI1 dead zone

Hex:	2003-36h	Effective mode:	Real time
Min.:	0.0	Unit:	mV
Max.:	1000.0	Data Type:	UInt16
Default:	10.0	Change:	Real-time

Value Range:
0.0 mV–1000.0 mV
Description
Defines the AI1 input voltage range when the drive sampling voltage is 0.

H03.54 Voltage-type AI1 zero drift

Hex:	2003-37h	Effective mode:	Real time
Min.:	-500.0	Unit:	mV
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:
-500.0 mV–500.0 mV
Description
Zero drift refers to the value of the drive o sampling voltage relative to GND upon zero AI voltage.
Set H0d.10 (Automatic adjustment of analog channels) to 1 (AI1 adjustment) to perform automatic adjustment on AI1 zero drift. The AI1 zero drift after adjustment will be saved into H03.54.

H03.55 Voltage-type AI2 offset

Hex:	2003-38h	Effective mode:	Real time
Min.:	-5000	Unit:	mV
Max.:	5000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:
-5000 mV–5000 mV
Description
Defines the actual AI2 input voltage when the drive sampling voltage is 0 after zero drift correction.

H03.56 Voltage-type AI2 input filter time constant

Hex:	2003-39h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00 ms–655.35 ms

Description

It sets the filter time constant of voltage signal input from AI2.

Set this parameter properly to avoid motor reference fluctuation caused by unstable analog voltage input and reduce motor misoperation caused by interference signals.

The filter function cannot eliminate or suppress zero drift or dead zone.

H03.58 Voltage-type AI2 dead zone

Hex:	2003-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	mV
Max.:	1000.0	Data Type:	UInt16
Default:	10.0	Change:	Real-time

Value Range:

0.0 mV–1000.0 mV

Description

Defines the AI2 input voltage range when the drive sampling voltage is 0.

H03.59 Voltage-type AI2 zero drift

Hex:	2003-3Ch	Effective mode:	Real time
Min.:	-500.0	Unit:	mV
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-500.0 mV–500.0 mV

Description

Zero drift refers to the value of the drive o sampling voltage relative to GND upon zero AI voltage.

Set H0d.10 (Automatic adjustment of analog channels) to 1 (AI2 adjustment) to perform automatic adjustment on AI2 zero drift. The AI1 zero drift after adjustment will be saved into H03.59.

H03.60 **DI1 fitter time**

Hex:	2003-3Dh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI1. The DI function is active only after the effective level is kept within the time defined by H03.60.

H03.61 **DI2 fitter time**

Hex:	2003-3Eh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI2. The DI function is active only after the effective level is kept within the time defined by H03.61.

H03.62 **DI3 fitter time**

Hex:	2003-3Fh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI3. The DI function is active only after the effective level is kept within the time defined by H03.62.

H03.63 **DI4 fitter time**

Hex:	2003-40h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:
0.00 ms–500.00 ms
Description
Defines the filter time of DI4. The DI function is active only after the effective level is kept within the time defined by H03.63.

H03.64 DI5 fitter time

Hex:	2003-41h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:
0.00 ms–500.00 ms
Description
Defines the filter time of DI5. The DI function is active only after the effective level is kept within the time defined by H03.64.

H03.65 DI6 fitter time

Hex:	2003-42h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:
0.00 ms–500.00 ms
Description
Defines the filter time of DI6. The DI function is active only after the effective level is kept within the time defined by H03.65.

H03.66 DI7 fitter time

Hex:	2003-43h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	0.00	Change:	Real-time

Value Range:
0.00 ms–500.00 ms
Description
Defines the filter time of DI7. The DI function is active only after the effective level is kept within the time defined by H03.66.

H03.67 **DI8 fitter time**

Hex:	2003-44h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI8. The DI function is active only after the effective level is kept within the time defined by H03.67.

H03.80 **Speed corresponding to analog 10 V**

Hex:	2003-51h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	3000	Change:	At stop

Value Range:

0rpm to 10000rpm

Description

Defines the corresponding motor speed when the sampling voltage is 10 V.
Speed reference value = Sampling voltage/10 x H03.80

H03.81 **Torque corresponding to analog 10 V**

Hex:	2003-52h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	8.00	Data Type:	UInt16
Default:	1.00	Change:	At stop

Value Range:

0.00–8.00

Description

Defines the motor torque corresponding to a sampling voltage of 10 V.
Torque reference value = Sampling voltage/10 × H03.81

2.5 H04 Terminal Output Parameters

H04.00 **DO1 function**

Hex:	2004-01h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: N/A
1: Servo ready
2: Motor rotating signal
3: Zero speed signal
4: Speed consistent signal
5: Positioning completed
6: Positioning approaches
7: Torque limited signal
8: Speed limited signal
9: Braking
10: Alarm
11: Fault
15: Interrupt positioning completed
16: Homing completed
17: Electrical homing completed
18: Torque attained signal
19: Speed attained signal
21: Enable completed
22: Internal command completed
23: Allow to write the next command
24: Internal motion completed
25: Comparison DO
26: Closed-loop state
30: Alarm or fault output
31: Communication-forced DO
32: EDM output

Description

Defines the function of DO1.

H04.01 DO1 logic selection

Hex:	2004-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open
1: Closed

Description
Defines the level logic of DO1 when the function assigned to DO is active.

H04.02 **DO2 function**

Hex:	2004-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	9	Change:	Real-time

Value Range:
See H04.00.
Description
-

H04.03 **DO2 logic selection**

Hex:	2004-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Normally open
1: Closed
Description
-

H04.04 **DO3 function**

Hex:	2004-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H04.00.
Description
-

H04.05 **DO3 logic selection**

Hex:	2004-06h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H04.06 DO4 function

Hex:	2004-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	11	Change:	Real-time

Value Range:

See H04.00.

Description

-

H04.07 DO4 logic selection

Hex:	2004-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H04.08 DO5 function

Hex:	2004-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	16	Change:	Real-time

Value Range:

See H04.00.

Description

-

H04.09 **DO5 logic selection**

Hex:	2004-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H04.22 **DO source selection**

Hex:	2004-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	DO1	0: DO1 function output
		1: Bit 0 of H31.04 set through communication
1	DO2	0: DO2 function output
		1: Bit 1 of H31.04 set through communication
2	DO3	0: DO3 function output
		1: Bit 2 of H31.04 set through communication
3	DO4	0: DO4 function output
		1: Bit 3 of H31.04 set through communication
4	DO5	0: DO5 function output
		1: Bit 4 of H31.04 set through communication

Description

Defines whether the logic of a physical DO terminal is defined by the actual state of the drive or by communication.

The value of H04.22 is displayed in decimal on the keypad. When the value is converted to a binary equivalent: If bit(n) is 0, it indicates the logic of DO(n+1) is defined by the actual state of the drive. If bit(n) is 1, it indicates the logic of DO (n+1) is defined by communication (H31.04).

Setpoint (decimal)	Setpoint (binary)					DO logic	
	bit4	bit3	bit2	bit1	bit0	Defined by the Drive State	Defined by Communication (H31.04)
	DO5	DO4	DO3	DO2	DO1		
0	0	0	0	0	0	DO1–DO5	N/A
1	0	0	0	0	1	DO2–DO5	DO1
…	…	…	…	…	…	…	…
31	1	1	1	1	1	N/A	DO1–DO5

Set H04.22 to a value listed in the preceding table.
H31.04 is not displayed on the keypad and can only be modified through communication. For H31.04, "bit(n) = 1" indicates the logic of DO(n+1) is active. "bit(n) = 0" indicates the logic of DO(n+1) is inactive.

H04.23 Communication-forced DO logic in non-OP status

Hex:	2004-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	DO1	0: Status unchanged
		1: No output
1	DO2	0: Status unchanged
		1: No output
2	DO3	0: Status unchanged
		1: No output
3	DO4	0: Status unchanged
		1: No output
4	DO5	0: Status unchanged
		1: No output

Description
Sets DO state upon communication failure.

H04.50 AO1 signal selection

Hex:	2004-33h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Motor speed (1 V/1000 rpm)
1: Speed reference (1 V/1000 rpm)
2: Torque reference (1 V/100 x rated torque)
3: Position deviation (0.5 mV/1 reference unit)
4: Position deviation (0.5 mV/1 encoder unit)
5: Position reference speed (1 V/1000 rpm)
6: Positioning completed
8: AI1 voltage
9: AI2 voltage
10: Defined by H31.05

Description

Defines the physical value source of AO1.

H04.51 AO1 offset voltage

Hex:	2004-34h	Effective mode:	Real time
Min.:	-10000	Unit:	mV
Max.:	10000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-10000 mV–10000 mV

Description

Defines the actual AO1 output voltage after offset when the output voltage is 0 V in theory.

H04.52 AO1 ratio

Hex:	2004-35h	Effective mode:	Real time
Min.:	-99.99	Unit:	-
Max.:	99.99	Data Type:	Int16
Default:	1.00	Change:	Real-time

Value Range:

-99.99–99.99

Description

Defines the actual AO1 output voltage after amplification when the output voltage is 1V in theory.

2.6 H05 Position Control Parameters

H05.00 Primary position reference source

Hex:	2005-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Pulse reference

1: Step reference

2: Multi-position reference

Description

Defines the position reference source in position control mode.

H05.01 Position pulse reference input terminal

Hex:	2005-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Low speed

1: High speed

Description

Used to select the physical input terminal based on the input pulse frequency when the pulse reference acts as the position reference source in the position control mode.

H05.02 Pulses per revolution

Hex:	2005-03h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	PPR
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0 PPR to 4294967295 PPR

Description

Defines the number of pulses required per revolution of the motor.

H05.04 **First-order low-pass filter time constant**

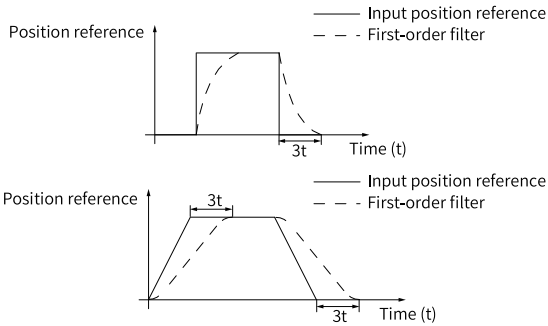
Hex:	2005-05h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0 ms–6553.5 ms

Description

Defines the first-order low pass filter time constant of position references.
If position reference P is rectangular wave or trapezoidal wave, the position reference after first-order low pass filtering is as follows:



This function does not affect the displacement value (position reference sum). An excessively high setpoint delays the responsiveness, so set a proper filter time constant based on actual conditions.

H05.05 **Step amount**

Hex:	2005-06h	Effective mode:	Real time
Min.:	-9999	Unit:	Reference unit
Max.:	9999	Data Type:	Int16
Default:	50	Change:	At stop

Value Range:

-9999 to +9999

Description

Defines the position reference sum when the step reference acts as the main position reference source.

H05.06 **Moving average filter time constant 1**

Hex:	2005-07h	Effective mode:	Real time

Min.:	0.0	Unit:	ms
Max.:	128.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0 ms–128.0 ms

Description

Defines the moving average filter time constant of position references.

H05.07 Electronic gear ratio 1 (numerator)

Hex:	2005-08h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	8388608	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the numerator of electronic gear ratio 1.

H05.09 Electronic gear ratio 1 (denominator)

Hex:	2005-0Ah	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	10000	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the denominator of electronic gear ratio 1.

H05.11 Electronic gear ratio 2 (numerator)

Hex:	2005-0Ch	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	8388608	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the numerator of electronic gear ratio 2.

H05.13 **Electronic gear ratio 2 (denominator)**

Hex:	2005-0Eh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	10000	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the denominator of electronic gear ratio 2.

H05.15 **Pulse reference form**

Hex:	2005-10h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Direction + Pulse, positive logic

1: Direction + Pulse, negative logic

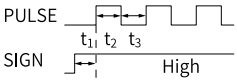
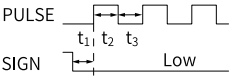
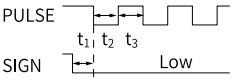
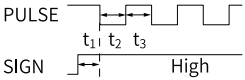
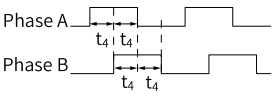
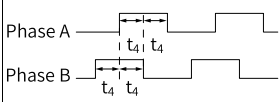
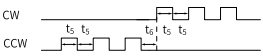
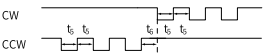
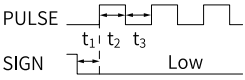
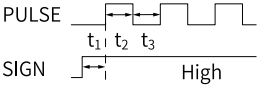
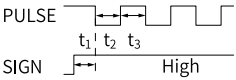
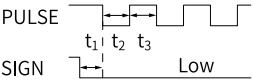
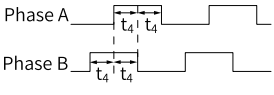
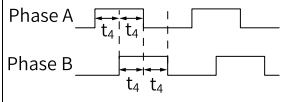
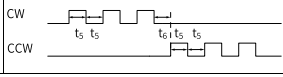
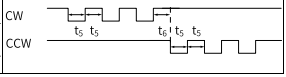
2: Phase A + phase B quadrature pulse, quadrupled frequency

3: CW + CCW

Description

Defines the input pulse form when the pulse reference acts as the main position reference source. See details in *"Table 2–2 " on page 180*.

Table 2–2 Descriptions of the pulse form

H02.02	H05.15	Pulse input form	Signal	Diagram of forward pulses	Diagram of reverse pulses
0	0	Pulse + Direction Positive Logic	PULSE SIGN		
	1	Pulse + Direction Negative Logic	PULSE SIGN		
	2	Phase A + Phase B Quadrature pulse Quadrupled frequency	PULSE (phase A) SIGN (phase B)	Phase A leads phase B by 90°. 	Phase B leads phase A by 90°. 
	3	CW+CCW	PULSE (CW) SIGN (CCW)		
1	0	Pulse + Direction Positive Logic	PULSE SIGN		
	1	Pulse + Direction Negative Logic	PULSE SIGN		
	2	Phase A + Phase B Quadrature pulse Quadrupled frequency	PULSE (phase A) SIGN (phase B)	Phase B leads phase A by 90°. 	Phase A leads phase B by 90°. 
	3	CW+CCW	PULSE (CW) SIGN (CCW)		

Note

The rise time and fall time of position pulse references must be shorter than 0.1 us.

Table 2–3 Specifications of pulse references

Input terminal	Single-channel max. input frequency (pps)	Min. Time Width (us)	
High-speed pulse input terminal	4M	t1	0.125
		t2	0.125
		t3	0.125
		t4	0.0625
		t5	0.125
		t6	0.125
Low-speed pulse input terminal	200k	t1	2.5
		t2	2.5
		t3	2.5
		t4	1.25
		t5	2.5
		t6	2.5

H05.16 Clear action

Hex:	2005-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Position deviation cleared upon S-ON OFF or fault

1: Position deviation cleared upon S-ON OFF or fault

2: Position deviation cleared upon active DI function 35 or non-operational state

Description

Defines the condition for clearing the position deviation.

H05.17 Number of encoder frequency-division pulses

Hex:	2005-12h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	PPR
Max.:	4194303	Data Type:	UInt32
Default:	2500	Change:	At stop

Value Range:

0 PPR to 4194303 PPR

Description

Defines the number of pulses output by PAO or PBO per revolution.

Pulse output resolution per revolution = (H05.17) x 4

H05.19 **Speed feedforward control**

Hex:	2005-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: No speed feedforward

1: Internal speed feedforward

2: H05.72

3: Zero phase

Description

Defines the source of the speed loop feedforward signal.

When the external speed feedforward is set, the feedforward source is set by H05.72.

H05.20 **Condition for positioning completed signal output**

Hex:	2005-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: When absolute value of position deviation is smaller than the value of H05.21, a positioning completion ON signal is output.
1: When filtered position command is 0 and absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
2: When unfiltered position command is 0 and absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
3: When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. Thereafter, when the position command is 0, a positioning completion ON signal is output within the positioning holding time H0560. After the positioning holding time H0560 elapsed, the output of the positioning completion signal is determined according to the unfiltered position command and the absolute value of the position deviation.
4: When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output. Thereafter, when the position command is 0, a positioning completion ON signal is output within the positioning holding time H0560. After the positioning holding time H0560 elapsed, the output of the positioning completion signal is determined according to the filtered position command and the absolute value of the position deviation.
5: When the unfiltered position command is 0, the zero-speed signal is ON and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
6: When the filtered position command is 0, the zero-speed signal is ON and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
7: When the unfiltered position command is 0, positioning completion evaluation starts after the delay time H05.60 elapses. When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
8: When the filtered position command is 0, positioning completion evaluation starts after the delay time H05.60 elapses. When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
9: When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, positioning completion evaluation starts after the delay time H05.60 elapses. When the unfiltered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.
10: When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, positioning completion evaluation starts after the delay time H05.60 elapses. When the filtered position command is 0 and the absolute value of the position deviation is less than H05.21, a positioning completion ON signal is output.

Description

Defines the condition for outputting positioning completed/proximity signal. In the position control mode, if the absolute value of the position deviation during operation is within the setpoint of H05.21, the drive outputs the positioning completed/proximity signal. You can set the condition for outputting the positioning completed/proximity signal in H05.20.

H05.21 Threshold of positioning completed

Hex:	2005-16h	Effective mode:	Real time
Min.:	1	Unit:	Encoder unit
Max.:	65535	Data Type:	UInt16
Default:	46976	Change:	Real-time

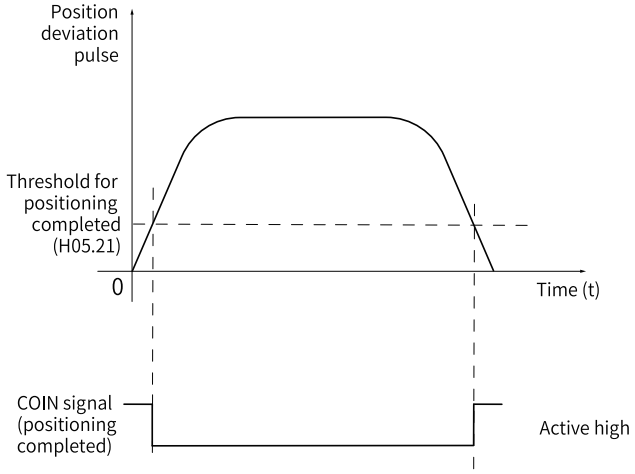
Value Range:

1 to 65535

Description

Defines the threshold of the absolute value of position deviation when the drive outputs the positioning completed signal.

Positioning completed signal: DO function 5 (FunOUT.5: COIN).



The positioning completed signal is valid only when the servo drive is in running state and in position control.

H05.22 Proximity threshold

Hex:	2005-17h	Effective mode:	Real time
Min.:	1	Unit:	Encoder unit

Max.:	65535	Data Type:	UInt16
Default:	65535	Change:	Real-time

Value Range:

1 to 65535

Description

Defines the threshold of the absolute value of position deviation when the drive outputs the proximity signal.

H05.24 Interrupt positioning displacement

Hex:	2005-19h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

Defines the position reference value during interrupt positioning.

H05.26 Constant operating speed in interrupt positioning

Hex:	2005-1Bh	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the maximum speed during interrupt positioning.

H05.27 Acc./Dec. time of interrupt positioning

Hex:	2005-1Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the time for the motor to change from 0 rpm to 1000 rpm at a constant speed during interrupt positioning.

H05.29 **Interruption fixed length unlock**

Hex:	2005-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Defines whether to unlock the interrupt positioning signal.

H05.30 **Homing enable selection**

Hex:	2005-1Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Homing enabled through the HomingStart signal input from DI

2: Electrical homing enabled through the HomingStart signal input from DI

3: Homing started immediately upon power-on

4: Homing executed immediately

5: Electrical homing started

6: Current position as home

8: D-triggered position as home

Description

Defines the homing mode and the trigger signal source.

H05.31 **Homing mode**

Hex:	2005-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Forward, home switch as deceleration point and home
1: Reverse, home switch as deceleration point and home
2: Forward, Z signal as deceleration point and home
3: Reverse, motor Z signal as deceleration point and home
4: Forward, home switch as deceleration point and Z signal as home
5: Reverse, home switch as deceleration point and Z signal as home
6: Forward, positive limit switch as deceleration point and home
7: Reverse, negative limit switch as deceleration point and home
8: Forward, positive limit switch as deceleration point and Z signal as home
9: Reverse, negative limit switch as deceleration point and Z signal as home
10: Forward, mechanical limit position as deceleration point and home
11: Reverse, mechanical limit position as deceleration point and home
12: Forward, mechanical limit position as deceleration point and Z signal as home
13: Reverse, mechanical limit position as deceleration point and Z signal as home
14: Forward single-turn homing
15: Reverse single-turn homing
16: Nearby single-turn homing

Description

Defines the default motor direction of rotation, deceleration point, and home during homing.

H05.32 Speed of high-speed search for home switch signal

Hex:	2005-21h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	3000	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0rpm to 3000rpm

Description

Defines the motor speed for searching for the deceleration point signal during homing.

H05.33 Speed of low-speed search for home switch signal

Hex:	2005-22h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 rpm to 1000 rpm
Description
Defines the motor speed for searching for the home signal during homing.

H05.34 Acceleration/Deceleration time during homing

Hex:	2005-23h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:
0 ms–1000 ms
Description
Defines the time for the motor to accelerate from 0 rpm to 1000 rpm at a constant speed during homing.

H05.35 Home search time limit

Hex:	2005-24h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:
0–65535
Description
Set the maximum home search time, depending on the setting of H05.66.

H05.36 Mechanical home offset

Hex:	2005-25h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648 to 2147483647
Description
Defines the absolute position of the motor after homing.

H05.38 Frequency-division output source

Hex:	2005-27h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Encoder frequency-division output

1: Pulse reference synchronous output

2: Frequency-division output inhibited

4: H31.01 reference frequency output

Description

Defines the output source of the pulse output terminal.

Value	Output Source	Remarks
0	Encoder frequency-division output	The encoder feedback signal is outputted only after being divided by the value of H05.17 during rotation of the motor. Encoder frequency-division output mode is recommended when the host controller is used for closed-loop feedback.
1	Pulse reference synchronous output	The input pulse references are outputted synchronously only when H05.00 is set to 0. When the pulses of multi-axis servo is tracked synchronously, synchronous output of pulse references is recommended.
2	Frequency-division output inhibited	No output is generated from pulse output terminals. In this case, frequency-division output terminals act as the input terminals of fully closed-loop external scale signals.
4	H31.01 Reference frequency output	-

H05.39 Electronic gear ratio switchover condition

Hex:	2005-28h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Switchover after position reference is kept 0 for 2.5 ms

1: Switched in real time

Description

Defines the condition for switching the electronic gear ratio. After the fully closed-loop function is enabled and H0F.00 is set to 2, the setpoint is forcibly set to 0.
When its value is 0: when H0F.00 = 2, the switching condition is that the position command is 0 and positioning is completed and lasts for 2.5 ms; when H0F.00 is not 2, the switching condition is that the position command keeps at 0 for 2.5 ms.

H05.40 Mechanical home offset and action upon overtravel

Hex:	2005-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: H05.36 as the coordinate after homing, reverse homing applied after homing triggered again on overtravel
1: H05.36 as the relative offset after homing, reverse homing applied after homing triggered again on overtravel
2: H05.36 as the coordinate after homing, reverse homing auto-applied on overtravel
3: H05.36 as the relative offset after homing, reverse homing auto-applied on overtravel
Description
Defines the offset relationship between the mechanical home and mechanical zero point, and the action upon overtravel during homing.

H05.41 Z pulse output polarity

Hex:	2005-2Ah	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	At stop

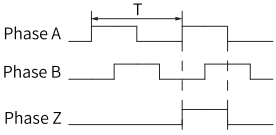
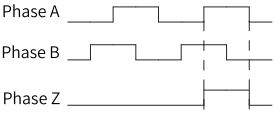
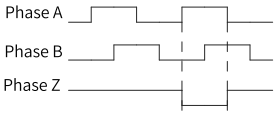
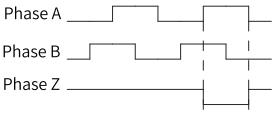
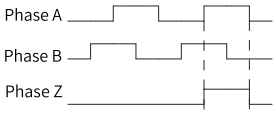
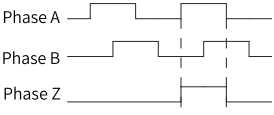
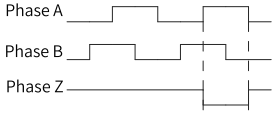
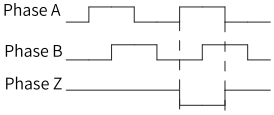
Value Range:

bit0: Frequency-division Z output polarity
0: Positive (high level upon active Z pulse)
1: Negative (low level upon active Z pulse)
bit1: OCZ output polarity
0: Positive (high level upon active Z pulse)
1: Negative (low level upon active Z pulse)
bit2: Inner loop probe Z signal source
0: Motor Z signal
1: Frequency-division output Z signal

Description

Defines the output level when the Z pulse of pulse output terminal is active.

Table 2–4 Pulse diagrams of encoder frequency-division output (H05.38 = 0)

H02.03 (Output pulse phase)	H05.41 (Z pulse output polarity)	Pulse Output Diagram of Forward RUN	Pulse Output Diagram of Reverse RUN
0	0	 Phase A leads phase B by 90°.	 Phase B leads phase A by 90°.
	1	 Phase A leads phase B by 90°.	 Phase B leads phase A by 90°.
1	0	 Phase B leads phase A by 90°.	 Phase A leads phase B by 90°.
	1	 Phase B leads phase A by 90°.	 Phase A leads phase B by 90°.

It is recommended to use the active edge outputted by Z signal when a high precision frequency-division output of Z signal is required.

Value	Z pulse output polarity
0	Positive (high level upon active Z pulse)
1	Negative (low level upon active Z pulse)

H05.41 = 0: Falling-edge triggered; H05.41 = 1: Rising-edge triggered

H05.43 Position pulse edge

Hex:	2005-2Ch	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Rising edge-triggered

1: Falling edge-triggered

Description

The setpoint 0 indicates calculation starts from the falling edge of pulse input.

The setpoint 1 indicates calculation starts from the rising edge of pulse input.

H05.44 Numerator of frequency-division output reduction ratio

Hex:	2005-2Dh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16383	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–16383

Description

Defines the numerator of frequency-division output reduction ratio.

H05.45 Denominator of frequency-division output reduction ratio

Hex:	2005-2Eh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	8191	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–8191

Description

Defines the denominator of frequency-division output reduction ratio.

H05.46 DI selection of multi-turn frequency-division Z starting point

Hex:	2005-2Fh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: No selection
1: DI1
2: DI2
3: DI3
4: DI4
5: DI5
6: DI6
7: DI7
8: DI8

Description

Sets the start point for frequency-division output. It is only effective when the frequency division ratio is greater than 1.

H05.47 Frequency-division Z pulse width

Hex:	2005-30h	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	400	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0us to 400us

Description

Defines the minimum output width (us) of frequency-division output PZ. When the pulse signal is used as master encoder and fully closed-loop encoder, the setpoint 0 indicates the original Z signal will be outputted. Other setpoints indicate the frequency-division Z signal will be output.

H05.48 Frequency-division output dead zone setting threshold

Hex:	2005-31h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–255

Description

Defines the dead zone threshold of frequency-division output to prevent frequency-division output caused by encoder jitter.

H05.50 Mechanical gear ratio in absolute position rotation mode (numerator)

Hex:	2005-33h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–65535

Description

Defines the transmission ratio between the mechanical rotary load and the motor in the absolute position rotation mode.

H05.51 Mechanical gear ratio in absolute position rotation mode (denominator)

Hex:	2005-34h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–65535

Description

Defines the transmission ratio between the mechanical rotary load and the motor in the absolute position rotation mode.

H05.52 Pulses per revolution of the load in absolute position rotation mode (low 32 bits)

Hex:	2005-35h	Effective mode:	Real time
Min.:	0	Unit:	Encoder unit
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0 to 4294967295

Description

Defines the number of pulses per revolution of the rotary load in the absolute position rotation mode.

H05.54 **Pulses per revolution of the load in absolute position rotation mode (high 32 bits)**

Hex:	2005-37h	Effective mode:	Real time
Min.:	0	Unit:	Encoder unit
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0 to 4294967295

Description

Defines the number of pulses per revolution of the rotary load in the absolute position rotation mode.

H05.58 **Torque threshold in homing upon hit-and-stop**

Hex:	2005-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the maximum positive/negative torque limit in homing upon hit-and-stop.

H05.59 **Positioning window time**

Hex:	2005-3Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	30000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–30000 ms

Description

If the positioning deviation is less than the time threshold of positioning completed, the positioning completed signal is active only if the set time threshold is exceeded.

H05.60 **Hold time of positioning completed**

Hex:	2005-3Dh	Effective mode:	Real time

Min.:	0	Unit:	ms
Max.:	30000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–30000 ms

Description

Defines the hold time of an active positioning completed signal.

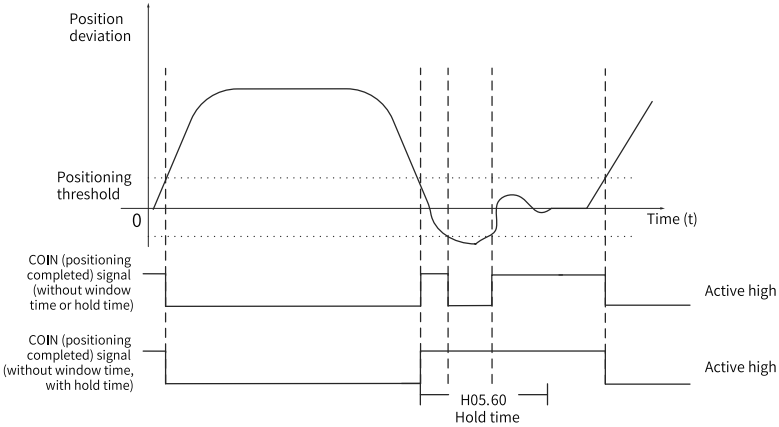


Figure 2-1 Schematic diagram for the window time (H05.59) and hold time (H05.60) of positioning completed signal

When the COIN (positioning completed) signal has a hold time of 0, it remains active until the next position reference is received.

H05.66 Homing time unit

Hex:	2005-43h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0: 1 ms

1: 10 ms

2: 100 ms

Description

Defines the homing time unit. The actual timeout time is H05.35 x H05.66 ms.

H05.71 **Motor Z signal width**

Hex:	2005-48h	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	4	Change:	Real-time

Value Range:

1 ms–100 ms

Description

Output pulse width when motor Z signal is active.

H05.72 **External speed feedforward source selection**

Hex:	2005-49h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: 60B1

1: AI1

2: AI2

Description

External speed feedforward source selection

2.7 H06 Speed Control Parameters

H06.00 **Source of main speed reference A**

Hex:	2006-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Digital setting (H06.03)

1: AI1

2: AI2

Description

Defines the source of main speed reference A.

H06.01 **Source of auxiliary speed reference B**

Hex:	2006-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Digital setting (H06.03)

1: AI1

2: AI2

5: Multi-speed reference

Description

Defines the source of auxiliary speed reference B.

H06.02 **Speed reference source**

Hex:	2006-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Source of main speed reference A

1: Source of auxiliary speed reference B

2: A+B

3: Switched between A and B

4: Communication

Description

Defines the source of speed references.

<table>
<tr><th>Value</th><th>Control mode</th><th>Remarks</th></tr>
<tr><td>0</td><td>Source of main speed reference A</td><td>The reference source is defined by H06.00.</td></tr>
<tr><td>1</td><td>Source of auxiliary speed reference B</td><td>The reference source is defined by H06.01.</td></tr>
<tr><td>2</td><td>A+B</td><td>The reference source is the product of A + B (H06.00 + H06.01).</td></tr>
<tr><td>3</td><td>Switched between A and B</td><td>The reference source is switched between A and B as defined by FunIN.4 (Cmd_SEL).
<table><tr><th>State of FunIN.4 (Cmd_SEL)</th><th>Reference Source</th></tr><tr><td>Inactive</td><td>Source of main speed reference A</td></tr><tr><td>Active</td><td>Source of auxiliary speed reference B</td></tr></table></td></tr>
<tr><td>4</td><td>Communication</td><td>The speed reference is defined by operating on H31.09 through communication (unit: 0.001 RPM).</td></tr>
</table>

H06.03 Speed reference set through keypad

Hex:	2006-04h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	200	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

Defines the speed reference value set through the keypad.

H06.04 DI jog speed reference

Hex:	2006-05h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	150	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description
Defines the DI jog speed reference.

H06.05 Acc. ramp time of speed reference

Hex:	2006-06h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Sets acceleration ramp time of speed reference. The acceleration/deceleration time constant of multi-speed references are defined only by parameters in group H12.
H06.05 defines the time for the speed reference to change from 0 rpm to 1000 rpm.
H06.06 defines the time for the speed reference to change from 1000 rpm to 0 rpm.
The formulas for calculating the actual acceleration/deceleration time are as follows:
Actual acceleration time t1= Speed reference ÷ 1000 x Acceleration ramp time of speed reference
Actual deceleration time t2= Speed reference ÷ 1000 x Deceleration ramp time of speed reference

H06.06 Dec. ramp time of speed reference

Hex:	2006-07h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Sets deceleration ramp time of speed reference.

H06.07 Maximum speed limit

Hex:	2006-08h	Effective mode:	Real time
Min.:	0	Unit:	RPM

Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the maximum speed limit.

H06.08 Forward speed threshold

Hex:	2006-09h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the forward speed threshold.

H06.09 Reverse speed threshold

Hex:	2006-0Ah	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the reverse speed threshold.

H06.10 Deceleration unit in emergency stop

Hex:	2006-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Multiplied by 1

1: Multiplied by 10

2: Multiplied by 100

Description

Sets the deceleration unit in emergency stop.

H06.11 Torque feedforward control

Hex:	2006-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: No torque feedforward

1: Internal torque feedforward

Description

Defines the source for torque feedforward control.

H06.12 Acceleration ramp time of jog speed

Hex:	2006-0Dh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Sets the acceleration ramp time of jog speed.

H06.13 Speed feedforward smoothing filter

Hex:	2006-0Eh	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0us to 65535us

Description

Defines the speed feedforward smoothing filter time.

H06.15 Zero clamp speed threshold

Hex:	2006-10h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the zero clamp speed threshold.

H06.16 Threshold of TGON (motor rotation) signal

Hex:	2006-11h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

0 rpm to 1000 rpm

Description

Sets the threshold of TGON (motor rotation) signal.

H06.17 Threshold of V-Cmp (speed matching) signal

Hex:	2006-12h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	100	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 RPM –100 RPM

Description

Defines the threshold of speed match signal.

H06.18 Threshold of speed reach signal

Hex:	2006-13h	Effective mode:	Real time
Min.:	20	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:

20rpm to 10000rpm

Description

Defines the threshold of speed reached signal.

H06.19 Threshold of zero speed output signal

Hex:	2006-14h	Effective mode:	Real time
Min.:	1	Unit:	RPM

Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

Defines the threshold of zero speed output signal.

H06.40 Ramp 1 deceleration time

Hex:	2006-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

The time for deceleration from 1000 RPM to 0 RPM.

H06.41 Ramp 2 deceleration time

Hex:	2006-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

The time for deceleration from 1000 RPM to 0 RPM.

H06.50 Speed S-curve enable switch

Hex:	2006-33h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

0: Accelerate/Decelerate at fixed acceleration rate

1: Accelerate/Decelerate based on the S-curve

H06.51 **Increasing acceleration 1 of speed S-curve acceleration segment**

Hex:	2006-34h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.52 **Decreasing acceleration 1 of speed S-curve acceleration segment**

Hex:	2006-35h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.53 **Decreasing deceleration 1 of speed S-curve deceleration segment**

Hex:	2006-36h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.54 **Decreasing acceleration 1 of speed S-curve deceleration segment**

Hex:	2006-37h	Effective mode:	Real time

Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.55 Increasing acceleration 2 of speed S-curve acceleration segment

Hex:	2006-38h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.56 Decreasing acceleration 2 of speed S-curve acceleration segment

Hex:	2006-39h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.57 Decreasing deceleration 2 of speed S-curve deceleration segment

Hex:	2006-3Ah	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16

Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.58 Decreasing acceleration 2 of speed S-curve deceleration segment

Hex:	2006-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.59 Increasing acceleration 3 of speed S-curve acceleration segment

Hex:	2006-3Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.60 Decreasing acceleration 3 of speed S-curve acceleration segment

Hex:	2006-3Dh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.61 Decreasing deceleration 3 of speed S-curve deceleration segment

Hex:	2006-3Eh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.62 Decreasing acceleration 3 of speed S-curve deceleration segment

Hex:	2006-3Fh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.63 Increasing acceleration 4 of speed S-curve acceleration segment

Hex:	2006-40h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.64 Decreasing acceleration 4 of speed S-curve acceleration segment

Hex:	2006-41h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.65 Decreasing deceleration 4 of speed S-curve deceleration segment

Hex:	2006-42h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.66 Decreasing acceleration 4 of speed S-curve deceleration segment

Hex:	2006-43h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.67 Increasing acceleration 5 of speed S-curve acceleration segment

Hex:	2006-44h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.68 Decreasing acceleration 5 of speed S-curve acceleration segment

Hex:	2006-45h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.69 Decreasing deceleration 5 of speed S-curve deceleration segment

Hex:	2006-46h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.70 Decreasing acceleration 5 of speed S-curve deceleration segment

Hex:	2006-47h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.71 Increasing acceleration 6 of speed S-curve acceleration segment

Hex:	2006-48h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.72 Decreasing acceleration 6 of speed S-curve acceleration segment

Hex:	2006-49h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.73 Decreasing deceleration 6 of speed S-curve deceleration segment

Hex:	2006-4Ah	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.74 Decreasing acceleration 6 of speed S-curve deceleration segment

Hex:	2006-4Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.75 Increasing acceleration 7 of speed S-curve acceleration segment

Hex:	2006-4Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.76 Decreasing acceleration 7 of speed S-curve acceleration segment

Hex:	2006-4Dh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.77 Decreasing deceleration 7 of speed S-curve deceleration segment

Hex:	2006-4Eh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.78 Decreasing acceleration 7 of speed S-curve deceleration segment

Hex:	2006-4Fh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.79 Increasing acceleration 8 of speed S-curve acceleration segment

Hex:	2006-50h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.80 Decreasing acceleration 8 of speed S-curve acceleration segment

Hex:	2006-51h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.81 Decreasing deceleration 8 of speed S-curve deceleration segment

Hex:	2006-52h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.82 Decreasing acceleration 8 of speed S-curve deceleration segment

Hex:	2006-53h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

2.8 H07 Torque Control Parameters

H07.00 Source of main torque reference A

Hex:	2007-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Keypad (H07.03)
1: AI1
2: AI2
Description
Defines the source of the main torque reference A.

H07.01 Source of auxiliary torque reference B

Hex:	2007-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Keypad (H07.03)
1: AI1
2: AI2

Description

Defines the source of auxiliary torque references.

H07.02 Torque reference source

Hex:	2007-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Source of main torque reference A
1: Source of auxiliary torque reference B
2: Source of A+B
3: Switched between A and B
4: Communication

Description

Selects the source of torque references.

<table>
<tr><th>Value</th><th>Control mode</th><th>Remarks</th></tr>
<tr><td>0</td><td>Source of main torque reference A</td><td>The reference source is defined by H07.00.</td></tr>
<tr><td>1</td><td>Source of auxiliary torque reference B</td><td>The reference source is defined by H07.01.</td></tr>
<tr><td>2</td><td>A+B</td><td>The reference source is the product of A+B (H07.00+H07.01).</td></tr>
<tr><td>3</td><td>Switched between A and B</td><td>The reference source is switched between A and B as defined by FunIN.4 (Cmd_SEL).
<table>
<tr><th>State of FunIN.4 (Cmd_SEL)</th><th>Reference Source</th></tr>
<tr><td>Inactive</td><td>Source of main torque reference A</td></tr>
<tr><td>Active</td><td>Source of auxiliary torque reference B</td></tr>
</table></td></tr>
<tr><td>4</td><td>Communication</td><td>The torque reference is defined by operating on H31.11 through communication.</td></tr>
</table>

H07.03 Torque reference set through keypad

Hex:	2007-04h	Effective mode:	Real time

Min.:	-400.0	Unit:	%
Max.:	400.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-400.0% to 400.0%

Description

Sets torque reference set through keypad.

H07.05 Torque reference filter time constant 1

Hex:	2007-06h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	30.00	Data Type:	UInt16
Default:	0.50	Change:	Real-time

Value Range:

0.00 ms–30.00 ms

Description

Defines the torque reference filter time constant 1.

H07.06 Torque reference filter time constant 2

Hex:	2007-07h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	30.00	Data Type:	UInt16
Default:	0.27	Change:	Real-time

Value Range:

0.00 ms–30.00 ms

Description

Defines the torque reference filter time constant 2.

H07.07 Torque Limit source

Hex:	2007-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Positive/Negative internal torque limit

1: Internal or external limit as defined by DI

2: T_LMT

3: T_LMT or external limit as defined by DI (FunIN.16 or FunIN.17)

4: T_LMT or internal limit (FunIN.16 or FunIN.17) as defined by DI

Description
Sets the torque limit source.

H07.08 T-LMT selection

Hex:	2007-09h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:
1: AI1
2: AI2
Description
Sets the AI as the torque limit source.

H07.09 Positive internal torque limit

Hex:	2007-0Ah	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:
0.0% to 400.0%
Description
Sets the forward run internal torque limit.

H07.10 Negative internal torque limit

Hex:	2007-0Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:
0.0% to 400.0%
Description
Sets the reverse run internal torque limit.

H07.11 Positive external torque limit

Hex:	2007-0Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%

Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Sets the positive external torque limit.

H07.12 Negative external torque limit

Hex:	2007-0Dh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Sets the negative external torque limit.

H07.15 Emergency-stop torque

Hex:	2007-10h	Effective mode:	At stop
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Set torque command source for emergency stop.

H07.17 Speed limit source

Hex:	2007-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Internal speed limit

1: V-LMT

2: H07.19 or H07.20 as defined by DI

Description

Sets the speed limit source.

H07.18 V-LMT selection

Hex:	2007-13h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

1: AI1

2: AI2

Description

Sets the AI as the speed limit source.

H07.19 Positive speed limit/Speed limit 1 in torque control

Hex:	2007-14h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the positive speed limit in torque control.

H07.20 Negative speed limit/Speed limit 2 in torque control

Hex:	2007-15h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the negative speed limit in torque control.

H07.21 Torque reach base value

Hex:	2007-16h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference of the base value for torque reach.

H07.22 Torque reach valid value

Hex:	2007-17h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	20.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference for torque reach DO active.

H07.23 Torque reach invalid value

Hex:	2007-18h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	10.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference for torque reach DO inactive.

H07.24 Field weakening depth

Hex:	2007-19h	Effective mode:	Real time
Min.:	60	Unit:	%
Max.:	115	Data Type:	UInt16
Default:	115	Change:	Real-time

Value Range:

60% to 115%

Description

Set the flux weakening depth.

H07.25 Max. permissible demagnetizing current

Hex:	2007-1Ah	Effective mode:	Real time
Min.:	0	Unit:	%

Max.:	300	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0% to 300%

Description

Set the maximum allowable demagnetization current value.

H07.26 Field weakening selection

Hex:	2007-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

Disable or enable field weakening.

H07.27 Flux weakening gain

Hex:	2007-1Ch	Effective mode:	Real time
Min.:	0.001	Unit:	Hz
Max.:	1.000	Data Type:	UInt16
Default:	0.030	Change:	Real-time

Value Range:

0.001 Hz–1.000 Hz

Description

Set the gain of flux weakening.

H07.28 Speed of flux weakening point

Hex:	2007-1Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Set the speed of flux weakening point.

H07.35 Torque non-standard feature enable

Hex:	2007-24h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

bit0: Motor output correction enable

bit1: Shield compensation data enable

Description

Torque non-standard feature enable switch.

H07.36 Time constant of low-pass filter 2

Hex:	2007-25h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	10.00	Data Type:	UInt16
Default:	0.00	Change:	Real-time

Value Range:

0.00 ms–10.00 ms

Description

Sets the time constant of low-pass filter 2.

H07.37 Torque reference filter selection

Hex:	2007-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: First-order filter

1: Biquad filter

Description

Defines torque reference source of torque reference filter.

When second-order filter is selected, the filter structure is biquad filter for ROT motors, and the filter parameters are set through H07.38. For DDR/DDL motors, the filter structure is biquad low-pass filter, and the filter parameters are set through H07.42.

H07.38 Biquad filter attenuation ratio

Hex:	2007-27h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	50	Data Type:	UInt16
Default:	16	Change:	Real-time

Value Range:

0–50

Description

Defines the attenuation ratio of biquad filter.

H07.40 Speed limit threshold in torque control mode

Hex:	2007-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	300	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–300 ms

Description

Sets speed limit window in the torque control mode.

H07.42 Biquad low pass filter damping coefficient

Hex:	2007-2Bh	Effective mode:	Real time
Min.:	0.001	Unit:	-
Max.:	10.000	Data Type:	UInt16
Default:	1.000	Change:	Real-time

Value Range:

0.001–10.000

Description

Defines the damping coefficient of biquad low-pass filter.

2.9 H08 Gain Parameters

H08.00 Speed loop gain

Hex:	2008-01h	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Real-time

Value Range:
0.1 Hz–2000.0 Hz
Description
Defines the responsiveness of the speed loop. The higher the setpoint, the faster the speed loop response is. Note that an excessively high setpoint may cause vibration.
In the position control mode, the position loop gain must be increased together with the speed loop gain.

H08.01 Speed loop integral time constant

Hex:	2008-02h	Effective mode:	Real time
Min.:	0.15	Unit:	ms
Max.:	512.00	Data Type:	UInt16
Default:	19.89	Change:	Real-time

Value Range:
0.15 ms–512.00 ms
Description
Defines the integral time constant of the speed loop.
The lower the setpoint, the better the integral action, and the quicker will the deviation value be close to 0.
Note:
There is no integral action when H08.01 is set to 512.00.

H08.02 Position loop gain

Hex:	2008-03h	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	64.0	Change:	Real-time

Value Range:
0.1 Hz–2000.0 Hz
Description
Defines the proportional gain of the position loop.
Defines the responsiveness of the position loop. A high setpoint shortens the positioning time. Note that an excessively high setpoint may cause vibration.
The 1st group of gain parameters include H08.00 (Speed loop gain), H08.01 (Speed loop integral time constant), H08.02, and H07.05 (Filter time constant of torque reference).

H08.03 **2nd speed loop gain**

Hex:	2008-04h	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	75.0	Change:	Real-time

Value Range:

0.1 Hz–2000.0 Hz

Description

-

H08.04 **2nd speed loop integral time constant**

Hex:	2008-05h	Effective mode:	Real time
Min.:	0.15	Unit:	ms
Max.:	512.00	Data Type:	UInt16
Default:	10.61	Change:	Real-time

Value Range:

0.15 ms–512.00 ms

Description

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H08.05 **2nd position loop gain**

Hex:	2008-06h	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	120.0	Change:	Real-time

Value Range:

0.1 Hz–2000.0 Hz

Description

Defines the second gain set of the position loop and speed loop. The 2nd group of gain parameters include H08.03 (Speed loop gain), H08.04 (Speed loop integral time constant), H08.05, and H07.06 (Torque reference filter time constant 2).

H08.08 **2nd gain mode setting**

Hex:	2008-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Fixed to the 1st gain, switched between P and PI as defined by bit26 of external 60FEh

1: Switched between the 1st and 2nd gain sets as defined by H08.09

Description

Defines the mode for switching to the 2nd gain set.

H08.09 Gain switchover condition

Hex:	2008-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Fixed to the 1st gain set (PS)

1: Switched as defined by bit26 of 60FEh

2: Torque reference too large (PS)

3: Speed reference too large (PS)

4: Speed reference change rate too large (PS)

5: Speed reference low/high speed threshold (PS)

6: Position deviation too large (P)

7: Position reference available (P)

8: Positioning unfinished (P)

9: Actual speed (P)

10: Position reference + Actual speed (P)

Description

Defines the gain switchover condition.

Value	Gain switchover condition	Remarks
0	Fixed to the 1st gain set	The 1st gain set applies.
1	Switched as defined by bit26 of 60FEh	-
2	Torque reference too large	If the torque reference absolute value exceeds (Level + Dead time) [%] in the last 1st gain set, the drive switches to the 2nd gain set. If the absolute value of the torque reference is lower than (level – Dead time) [%] and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain, the drive returns to the 1st gain set.

Value	Gain switchover condition	Remarks
3	Speed reference too large	If the speed reference absolute value exceeds (Level + Dead time) [rpm] in the last 1st gain set, the drive switches to the 2nd gain set. If the absolute value of the speed reference is lower than (level - Dead time) [rpm] and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain, the drive returns to the 1st gain set.
4	Speed reference change rate too large	Active in the control modes other than speed control If the absolute value of the change rate of the speed reference exceeds (Level + Dead time) [10 rpm/s] in the last 1st gain set, the drive switches to the 2nd gain set. If the absolute value of the speed reference change rate is lower than (level – hysteresis) [10 rpm/s] and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain, the drive returns to the 1st gain set. In the speed control mode, the 1st gain set always applies.
5	Speed reference high/low-speed threshold	If the speed reference absolute value exceeds (Level - Dead time) [rpm] in the last 1st gain set, the drive starts to switch to the 2nd gain set, with gains changed gradually. When the speed reference absolute value reaches (Level + Dead time) [rpm], the 2nd gain set applies. If the speed reference absolute value is lower than (Level + Dead time) [rpm] in the last 2nd gain set, the drive starts to return to the 1st gain set, with gains changed gradually. When the speed reference absolute value reaches (Level - Dead time) [rpm], the 1st gain set applies.
6	Position deviation too large	Active only in position control and full closed-loop control. If the position deviation absolute value exceeds (Level + Dead time) [encoder unit] in the last 1st gain set, the drive switches to the 2nd gain set. When the absolute value of the position deviation is lower than (Level - Dead time) [encoder unit] and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain, the drive returns to the 1st gain set. If the drive is not in position control or full closed-loop control, the 1st gain set always applies.
7	Position reference available	Active only in position control and full closed-loop control. If the position reference is not 0 in the last 1st gain set, the drive switches to the 2nd gain set. When the position reference is 0 and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain, the drive returns to the 1st gain set. If the drive is not in position control or full closed-loop control, the 1st gain set always applies.
8	Positioning uncompleted	Active only in position control and full closed-loop control. If positioning has not been completed in the last 1st gain set, the drive switches to the 2nd gain set. If positioning is not completed and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain set, the servo drive returns to the 1st gain set. If the drive is not in position control or full closed-loop control, the 1st gain set always applies.

Value	Gain switchover condition	Remarks
9	Actual speed too high	Active only in position control and full closed-loop control. If the absolute value of actual speed exceeds (Level + Dead time) [rpm] in the last 1st gain set, the drive switches to the 2nd gain set. If the absolute value of actual speed is lower than (Level - Dead time) [rpm] and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain set, the drive returns to the 1st gain set. If the drive is not in position control or full closed-loop control, the 1st gain set always applies.
10	Position reference + Actual speed	Active only in position control and full closed-loop control. If the position reference is not 0 in the last 1st gain set, the drive switches to the 2nd gain set. If the position reference is 0 and such status lasts within the delay defined by H08.10 (Gain switchover delay) in the 2nd gain set, the 2nd gain set applies. When the position reference is 0 and the delay defined by (H08.10) is reached, if the absolute value of actual speed is lower than (Level) [rpm], the speed loop integral time constant is fixed to the setpoint of H08.04 (2nd speed loop integral time constant), and others return to the 1st gain set; if the absolute value of actual speed does not reach (Level - Dead time) [rpm], the speed integral also returns to the setpoint of H08.01 (Speed loop integral time constant). If the drive is not in position control or full closed-loop control, the 1st gain set always applies.

H08.10 Gain switchover delay

Hex:	2008-0Bh	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	1000.0	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0 ms–1000.0 ms

Description

Defines the delay when the drive switches from the 2nd gain set to the 1st gain set.

H08.11 Gain switchover level

Hex:	2008-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0–20000

Description

Defines the gain switchover level.

Gain switchover is affected by both the level and the dead time, as defined by H08.09. The unit of gain switchover level varies with the switchover condition.

H08.12 Gain switchover hysteresis

Hex:	2008-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

0–20000

Description

Defines the dead time for gain switchover.

Gain switchover is affected by both the level and the dead time, as defined by H08.09. The unit of gain switchover hysteresis varies with the switchover condition.

Note:

The set value of H08.11 (Gain switchover level) must be no less than that of H08.12; otherwise, the H08.11 will be set to a value equal to H08.12 automatically.

H08.13 Position gain switchover time

Hex:	2008-0Eh	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	1000.0	Data Type:	UInt16
Default:	3.0	Change:	Real-time

Value Range:

0.0 ms–1000.0 ms

Description

In position control, if H08.05 (2nd position loop gain) is much higher than H08.02 (Position loop gain), set the time for switching from H08.02 to H08.05. This parameter can be used to reduce the impact caused by an increase in the position loop gain.

H08.15 Load moment of inertia ratio

Hex:	2008-10h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00–120.00

Description

Defines the mechanical load inertia ratio relative to the motor moment of inertia.

When H08.15 is set to 0, it indicates the motor carries no load; if it is set to 1.00, it indicates the mechanical load inertia is the same as the motor moment of inertia.

H08.17 Zero phase delay

Hex:	2008-12h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	4.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0 ms–4.0 ms

Description

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H08.18 Time constant of speed feedforward filter

Hex:	2008-13h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	64.00	Data Type:	UInt16
Default:	0.50	Change:	Real-time

Value Range:

0.00 ms–64.00 ms

Description

Defines the filter time constant of speed feedforward.

H08.19 Speed feedforward gain

Hex:	2008-14h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

In position control and full closed-loop control, speed feedforward is the product of speed feedforwad signal multiplied by H08.19 and is part of the speed reference.

Increasing the setpoint improves the responsiveness to position references and reduces the position deviation during operation at a constant speed.

Set H08.18 to a fixed value first, and then increase the value of H08.19 gradually from 0 to a certain value at which speed feedforward achieves the desired effect.

Adjust H08.18 and H08.19 repeatedly until a balanced performance is achieved.

Note:

For how to enable the speed feedforward function and select the speed feedforward signal, see H05.19 (Speed feedforward control).

H08.20 Torque feedforward filter time constant

Hex:	2008-15h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	64.00	Data Type:	UInt16
Default:	0.50	Change:	Real-time

Value Range:

0.00 ms–64.00 ms

Description

Defines the filter time constant of torque feedforward.

H08.21 Torque feedforward gain

Hex:	2008-16h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 300.0%

Description

In control modes other than torque control, torque feedforward is the product of torque feedforwad signal multiplied by H08.21 and is part of the torque reference.

Increasing the setpoint improves the responsiveness to variable speed references.

Increasing the setpoint improves the responsiveness to position references and reduces the position deviation during operation at a constant speed.

During parameter adjustment, set H08.20 (Torque feedforward filter time constant) to the default value first, and then increase H08.21 gradually to enhance the effect of torque feedforward. When speed overshoot occurs, keep H08.21 unchanged and increase the value of H08.20. Adjust H08.20 and H08.21 repeatedly until a balanced performance is achieved.

Note:
For how to enable the torque feedforward function and select the torque feedforward signal, see H06.11 (Torque feedforward control).

H08.22 Speed feedback filtering option

Hex:	2008-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Inhibited
1: 2 times
2: 4 times
3: 8 times
4: 16 times

Description
Defines the moving average filtering times for speed feedback.
The higher the setpoint, the weaker the speed feedback fluctuation, but the longer the feedback delay will be.

H08.23 Cutoff frequency of speed feedback low-pass filter

Hex:	2008-18h	Effective mode:	Real time
Min.:	100	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:
100 Hz–8000 Hz

Description
Defines the cutoff frequency for first-order low-pass filtering on the speed feedback.
Note:
The lower the setpoint, the weaker the speed feedback fluctuation, and the longer the feedback delay will be.
Setting this parameter to 4000 Hz negates the filtering effect.

H08.24 PDFF control coefficient

Hex:	2008-19h	Effective mode:	Real time
Min.:	0.0	Unit:	%

Max.:	200.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 200.0%

Description

Defines the control mode of the speed loop.

When this parameter is set to 100.0, the speed loop adopts PI control (default) with quick dynamic response.

When this parameter is set to 0.0, speed loop integral action is enhanced, which filters out low-frequency interference but also slows down the dynamic response.

H08.24 can be used to keep a good responsiveness of the speed loop, with the anti-interference capacity in low-frequency bands improved and the speed feedback overshoot unaffected.

H08.27 Speed observer cutoff frequency

Hex:	2008-1Ch	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	600	Data Type:	UInt16
Default:	170	Change:	Real-time

Value Range:

50 Hz–600 Hz

Description

Defines the cutoff frequency of the speed observer. Note that an excessively high setpoint may incur resonance. Decrease the setpoint properly in case of large speed feedback noise.

H08.28 Speed observer inertia correction coefficient

Hex:	2008-1Dh	Effective mode:	Real time
Min.:	1	Unit:	%
Max.:	1600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

1% to 1600%

Description

Defines the speed observer inertia correction coefficient. If H08.15 is set based on the actual inertia, there is no need to adjust this parameter.

H08.29 **Speed observer filter time**

Hex:	2008-1Eh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	10.00	Data Type:	UInt16
Default:	0.80	Change:	Real-time

Value Range:

0.00 ms–10.00 ms

Description

Defines the speed observer filter time. It is recommended to set this parameter to a value equal to the sum of H07.05 plus 0.2 ms.

H08.31 **Disturbance cutoff frequency**

Hex:	2008-20h	Effective mode:	Real time
Min.:	1	Unit:	Hz
Max.:	4000	Data Type:	UInt16
Default:	600	Change:	Real-time

Value Range:

1 Hz–4000 Hz

Description

Defines the cutoff frequency of the disturbance observer. Increasing the setpoint improves the responsiveness of the disturbance observer and the compensation effect. Note that an excessively high setpoint may incur resonance.

H08.32 **Disturbance compensation gain**

Hex:	2008-21h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0% to 100%

Description

Defines the compensation gain of the disturbance observer. The setpoint 100% indicates full compensation.

H08.33 **Disturbance observer inertia correction coefficient**

Hex:	2008-22h	Effective mode:	Real time
Min.:	1	Unit:	%

Max.:	1600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

1% to 1600%

Description

Defines the disturbance observer inertia correction coefficient. If H08.15 is set based on the actual inertia, there is no need to adjust this parameter.

H08.37 Phase modulation for medium-frequency jitter suppression 2

Hex:	2008-26h	Effective mode:	Real time
Min.:	-90	Unit:	°
Max.:	90	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-90° to 90°

Description

Defines the compensation phase of medium-frequency jitter suppression 2.

H08.38 Medium-frequency suppression 2 frequency

Hex:	2008-27h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	1000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 Hz–1000 Hz

Description

Set this parameter based on actual resonance frequency. The valid suppression frequency range for medium-frequency jitter suppression 2 is 100 Hz to 1000 Hz.

H08.39 Compensation gain of medium-frequency jitter suppression 2

Hex:	2008-28h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	300	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0% to 300%

Description

Defines the compensation gain for medium-frequency jitter suppression 2. Set this parameter to 40%...55% in general cases. Setting this parameter to 0 negates the effect of medium-frequency jitter suppression 2.

H08.40 Speed observer selection

Hex:	2008-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Used to set the enable bit for speed observer.

H08.42 Model control selection

Hex:	2008-2Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

2: Reserved

Description

Used to enable model tracking control.

H08.43 Model gain

Hex:	2008-2Ch	Effective mode:	Real time
Min.:	0.1	Unit:	-
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Real-time

Value Range:

0.1–2000.0

Description

Defines the single inertia model gain. The higher the gain, the faster the position response. Note that an excessively high setpoint may incur excessive overshoot.

H08.46 **Feedforward value**

Hex:	2008-2Fh	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	102.4	Data Type:	UInt16
Default:	95.0	Change:	Real-time

Value Range:

0.0–102.4

Description

Defines the speed feedforward gain for single inertia model control. If overshoot occurs, reduce the setpoint properly.

H08.53 **Medium- and low-frequency jitter suppression frequency 3**

Hex:	2008-36h	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0 Hz–300.0 Hz

Description

Set this parameter based on actual resonance frequency. The resonance suppression range is 100 Hz to 300 Hz.

H08.54 **Medium- and low-frequency jitter suppression compensation 3**

Hex:	2008-37h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0% to 200%

Description

Defines the compensation gain for medium- and low-frequency suppression compensation 3. The setpoint 200% indicates full compensation.

H08.56 **Medium- and low-frequency jitter suppression phase modulation 3**

Hex:	2008-39h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	600	Data Type:	UInt16

Default:	100	Change:	Real-time

Value Range:

0% to 600%

Description

Adjust this parameter based on the actual compensation effect.

H08.59 Medium- and low-frequency jitter suppression frequency 4

Hex:	2008-3Ch	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0 Hz–300.0 Hz

Description

Set this parameter based on actual resonance frequency. The resonance suppression range is 100 Hz to 300 Hz.

H08.60 Medium- and low-frequency jitter suppression compensation 4

Hex:	2008-3Dh	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0% to 200%

Description

Defines the compensation gain for medium- and low-frequency suppression compensation 4. The setpoint 200% indicates full compensation.

H08.61 Medium- and low-frequency jitter suppression phase modulation 4

Hex:	2008-3Eh	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0% to 600%

Description

Adjust this parameter based on the actual compensation effect.

H08.62 **Position loop integral time constant**

Hex:	2008-3Fh	Effective mode:	Real time
Min.:	0.15	Unit:	-
Max.:	512.00	Data Type:	UInt16
Default:	512.00	Change:	Real-time

Value Range:

0.15–512.00

Description

Defines the position loop integral time constant.

H08.63 **2nd position loop integral time constant**

Hex:	2008-40h	Effective mode:	Real time
Min.:	0.15	Unit:	-
Max.:	512.00	Data Type:	UInt16
Default:	512.00	Change:	Real-time

Value Range:

0.15–512.00

Description

Defines the 2nd position loop integral time constant.

H08.64 **Speed observer feedback source**

Hex:	2008-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

-

H08.65 **Zero deviation control selection**

Hex:	2008-42h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled
1: Enabled

Description

Used to enable/disable zero deviation control.

H08.66 Zero deviation control position average filter

Hex:	2008-43h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	320.0	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0 ms–320.0 ms

Description

Defines the average filter time of zero deviation control position. It is recommended to increase the setpoint in case of large noise caused by low command resolution.

H08.68 Speed feedforward of zero deviation control

Hex:	2008-45h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the speed feedforward of zero deviation control.

H08.69 Torque feedforward of zero deviation control

Hex:	2008-46h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the torque feedforward of zero deviation control.

H08.90 **Encoder scale spacing ripple suppressor enable**

Hex:	2008-5Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	6	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Inhibited

1: 1st group activated only-adaptive mode

2: 1st group activated only-hysteresis mode

3: Two groups activated-adaptive mode

4: Two groups activated-hysteresis mode

Description

Sets encoder scale pitch ripple suppression.

(1) This function is only used to suppress or eliminate the torque ripple of the control loop caused by the encoder scale pitch ripple, and to reduce the speed fluctuation and operating noise to a certain extent.

(2) This function is not suitable for applications with frequent speed changes and short travels, and it is better for applications with long travels and slow speed changes (such as the digital printing industry).

(3) The number of suppressors to be used is determined according to the number of torque ripple components caused by the encoder scale pith ripple.

(4) The hysteretic mode is only suitable for reciprocating constant speed operation, and the adaptive mode is suitable for the occasion with slow speed change. You should choose the suitable mode as needed.

2.10 H09 Auto-tuning Parameters

H09.00 **Auto-adjustment mode**

Hex:	2009-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	4	Change:	Real-time

Value Range:

0: Disabled, manual gain tuning required
1: Enabled, gain parameters generated automatically based on the stiffness level
2: Positioning mode, gain parameters generated automatically based on the stiffness level
3: Interpolation mode+Inertia auto-tuning
4: Normal mode+Inertia auto-tuning
6: Quick positioning mode+Inertia auto-tuning

Description

Defines different gain tuning modes. Related gain parameters can be set manually or automatically according to the stiffness level.

H09.01 Stiffness level selection

Hex:	2009-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	41	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:

0–41

Description

Defines the stiffness level of the servo system. The higher the stiffness level, the stronger the gains and the quicker the response will be. But an excessively high stiffness level will cause vibration.
The setpoint 0 indicates the weakest stiffness and 41 indicates the strongest stiffness.

H09.02 Adaptive notch mode

Hex:	2009-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:

0: Adaptive notch no longer updated
1: One adaptive notch activated (3rd notch)
2: Two adaptive notches activated (3rd and 4th notches)
3: Resonance point tested only (displayed in H09.24)
4: Adaptive notch cleared, values of 3rd and 4th notches restored to default

Description

Defines the operation mode of the adaptive notch.

H09.03 **Online inertia auto-tuning mode**

Hex:	2009-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Disabled

1: Enabled, changing slowly

2: Enabled, changing normally

3: Enabled, changing quickly

Description

Defines whether to enable online inertia auto-tuning and the inertia ratio update speed during online inertia auto-tuning.

H09.05 **Offline inertia auto-tuning mode**

Hex:	2009-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Bi-directional

1: Unidirectional

Description

Defines the offline inertia auto-tuning mode. The offline inertia auto-tuning function can be enabled through H0d.02.

H09.06 **Max. speed of inertia auto-tuning**

Hex:	2009-07h	Effective mode:	Real time
Min.:	100	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	500	Change:	At stop

Value Range:

100 RPM to 1000 RPM

Description

Defines the maximum permissible speed reference in offline inertia auto-tuning mode.

During inertia auto-tuning, the higher the speed, the more accurate the auto-tuned values. Use the default setpoint in general cases.

H09.07 **Time constant for accelerating to max. speed during inertia auto-tuning**

Hex:	2009-08h	Effective mode:	Real time
Min.:	20	Unit:	ms
Max.:	800	Data Type:	UInt16
Default:	125	Change:	At stop

Value Range:

20 ms–800 ms

Description

Defines the time for the motor to accelerate from 0 rpm to the maximum speed of inertia auto-tuning (H09.06) during offline inertia auto-tuning.

H09.08 **Interval time after an individual inertia auto-tuning**

Hex:	2009-09h	Effective mode:	Real time
Min.:	50	Unit:	ms
Max.:	10000	Data Type:	UInt16
Default:	800	Change:	At stop

Value Range:

50 ms–10000 ms

Description

Defines the interval time between two consecutive speed references when H09.05 (Offline inertia auto-tuning mode) is set to 1 (Positive/Negative triangular wave mode).

H09.09 **Number of motor revolutions per inertia auto-tuning**

Hex:	2009-0Ah	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	100.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00–100.00

Description

Defines the motor revolutions per inertia auto-tuning when H09.05 (Offline inertia auto-tuning mode) is set to 1 (Positive/Negative triangular wave mode).

Note:

When using the offline inertia auto-tuning function, check that the travel distance of the motor at the stop position is larger than the value of H09.09. If not, decrease the value of H09.06 (Maximum speed for inertia auto-tuning) or H09.07 (Time constant of accelerating to max. speed during inertia auto-tuning) properly until the motor travel distance fulfills the requirement.

H09.11 **Vibration threshold**

Hex:	2009-0Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the alarm threshold for current feedback vibration.

H09.12 **Frequency of the 1st notch**

Hex:	2009-0Dh	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

50 Hz–8000 Hz

Description

Defines the center frequency of the notch, which is the mechanical resonance frequency.

In the torque control mode, setting the notch frequency to 4000 Hz deactivates the notch function.

H09.13 **Width level of the 1st notch**

Hex:	2009-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0–20

Description

Defines the width level of the notch. Use the default setpoint in general cases. Width level is the ratio of the notch width to the notch center frequency.

H09.14 **Depth level of the 1st notch**

Hex:	2009-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:

0–99

Description

Defines the depth level of the notch.

The depth level of the notch is the ratio between the input to the output at the notch center frequency.

The higher the setpoint, the lower the notch depth and the weaker the mechanical resonance suppression will be. Note that an excessively high setpoint may cause system instability.

H09.15 Frequency of the 2nd notch

Hex:	2009-10h	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

50 Hz–8000 Hz

Description

-

H09.16 Width level of the 2nd notch

Hex:	2009-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0–20

Description

-

H09.17 Depth level of the 2nd notch

Hex:	2009-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–99

Description

-

H09.18 **Frequency of the 3rd notch**

Hex:	2009-13h	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

50 Hz–8000 Hz

Description

-

H09.19 **Width level of the 3rd notch**

Hex:	2009-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0–20

Description

-

H09.20 **Depth level of the 3rd notch**

Hex:	2009-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–99

Description

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H09.21 **Frequency of the 4th notch**

Hex:	2009-16h	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16

Default:	8000	Change:	Real-time

Value Range:
50 Hz–8000 Hz
Description
-

H09.22 Width level of the 4th notch

Hex:	2009-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:
0–20
Description
-

H09.23 Depth level of the 4th notch

Hex:	2009-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–99
Description
-

H09.24 Auto-tuned resonance frequency

Hex:	2009-19h	Effective mode:	-
Min.:	0	Unit:	Hz
Max.:	5000	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 Hz–5000 Hz
Description
When H09.02 (Adaptive notch mode) is set to 3, the current mechanical resonance frequency is displayed.

H09.32 **Gravity compensation value**

Hex:	2009-21h	Effective mode:	Real time
Min.:	-100.0	Unit:	%
Max.:	100.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-100.0% to 100.0%

Description

Defines the gravity compensation value. Setting this parameter properly in vertical axis applications can reduce the falling amplitude upon start.

H09.33 **Positive friction compensation value**

Hex:	2009-22h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the forward friction compensation value.

H09.34 **Negative friction compensation value**

Hex:	2009-23h	Effective mode:	Real time
Min.:	-100.0	Unit:	%
Max.:	0.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-100.0% to 0.0%

Description

Defines the reverse direction friction compensation value.

H09.35 **Friction compensation speed**

Hex:	2009-24h	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	20.0	Data Type:	UInt16
Default:	2.0	Change:	Real-time

Value Range:

0.0–20.0

Description

Defines the friction compensation speed.

H09.36 Friction compensation speed

Hex:	2009-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	19	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Slow mode+Speed reference
1: Slow mode+Model speed
2: Slow mode+Speed feedback
3: Slow mode+Observe speed
16: Quick mode +Speed reference
17: Quick mode +Model speed
18: Quick mode +Speed feedback
19: Quick mode+Observe speed

Description

-

H09.37 Vibration monitoring time

Hex:	2009-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	300	Change:	Real-time

Value Range:

0–65535

Description

The resonance detection suppression function is turned off automatically after the time defined by this parameter elapses. To suppress the resonance suppression function, set this parameter to 65536 (in seconds).

H09.38 Frequency of low-frequency resonance suppression 1 at the mechanical end

Hex:	2009-27h	Effective mode:	Real time
Min.:	1.0	Unit:	Hz
Max.:	100.0	Data Type:	UInt16

Default:	100.0	Change:	Real-time

Value Range:

1.0 Hz–100.0 Hz

Description

Set this parameter based on the actual jitter frequency.

H09.39 Low-frequency resonance suppression 1 at the mechanical end

Hex:	2009-28h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0–3

Description

Defines different low-frequency resonance suppression types at the mechanical load. Type 1 features the shortest delay.

H09.44 Frequency of low-frequency resonance suppression 2 at mechanical load end

Hex:	2009-2Dh	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0–100.0

Description

Set this parameter based on the actual jitter frequency.

H09.45 Responsiveness of low-frequency resonance suppression 2 at mechanical load end

Hex:	2009-2Eh	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	5.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.01–5.00

Description

Use the default setpoint in general cases. To increase the setpoint, reduce the delay time.

H09.47 **Width of low-frequency resonance suppression 2 at mechanical load end**

Hex:	2009-30h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	2.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00–2.00

Description

Use the default setpoint in general cases. To increase the setpoint, increase the delay time.

H09.49 **Frequency of low-frequency resonance suppression 3 at mechanical load end**

Hex:	2009-32h	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0–100.0

Description

-

H09.50 **Responsiveness of low-frequency resonance suppression 3 at mechanical load end**

Hex:	2009-33h	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	5.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.01–5.00

Description

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H09.52 **Width of low-frequency resonance suppression 3 at mechanical load end**

Hex:	2009-35h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	2.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:
0.00–2.00
Description
-

H09.54 Resonance detection torque threshold

Hex:	2009-37h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	50.0	Change:	Real-time

Value Range:
0.0% to 300.0%
Description
If the torque fluctuation exceeds the setpoint, an error will be reported. Setting this parameter to 0 hides the resonance detection function.

H09.56 Max. overshoot allowed by ETune

Hex:	2009-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	2936	Change:	Real-time

Value Range:
0–65535
Description
Defines the maximum overshoot value allowed during ETune adjustment.

H09.57 STune resonance suppression switchover frequency

Hex:	2009-3Ah	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	4000	Data Type:	UInt16
Default:	900	Change:	Real-time

Value Range:
0 Hz–4000 Hz
Description
If the resonance frequency is lower than the setpoint, use medium-frequency resonance suppression 2 to suppress resonance. Otherwise, use the notch to suppress resonance.

H09.58 STune resonance suppression reset selection

Hex:	2009-3Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Used to enable STune resonance suppression reset to clear parameters related to resonance suppression, medium-frequency resonance suppression 2 and notches 3 and 4.

H09.71 Starting frequency

Hex:	2009-48h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:

0 Hz–8000 Hz

Description

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H09.72 End frequency

Hex:	2009-49h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

0 Hz–8000 Hz

Description

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H09.73 Frequency subdivision

Hex:	2009-4Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	500	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
0–500
Description
-

H09.74 **Excitation amplitude**

Hex:	2009-4Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	15.0	Change:	Real-time

Value Range:
0.0% to 400.0%
Description
-

H09.75 **Starting frequency 2**

Hex:	2009-4Ch	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0 Hz–8000 Hz
Description
-

H09.76 **Frequency subdivision 2**

Hex:	2009-4Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1000	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0–1000
Description
-

H09.77 **Biquad filter mode**

Hex:	2009-4Eh	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	6	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: First-order low-pass

2: Second-order low-pass

3: Notch

4: Lead-lag

5: User-defined

Description

Used to select biquad filter mode.

H09.78 Biquad filter numerator frequency

Hex:	2009-4Fh	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	16000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

0 Hz–16000 Hz

Description

-

H09.79 Biquad filter numerator damping coefficient

Hex:	2009-50h	Effective mode:	Real time
Min.:	0.001	Unit:	-
Max.:	10.000	Data Type:	UInt16
Default:	1.000	Change:	Real-time

Value Range:

0.001–10.000

Description

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H09.80 Biquad filter denominator frequency

Hex:	2009-51h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	16000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

0 Hz–16000 Hz

Description

-

H09.81 Biquad filter denominator damping coefficient

Hex:	2009-52h	Effective mode:	Real time
Min.:	0.001	Unit:	-
Max.:	10.000	Data Type:	UInt16
Default:	1.000	Change:	Real-time

Value Range:

0.001–10.000

Description

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2.11 H0A Fault and Protection Parameters

H0A.00 Power input phase loss and failure protection

Hex:	200A-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Enable

1: Disable

Description

Servo drives supporting single-phase/three-phase 220 V and three-phase 380 V power supplies are available. When voltage fluctuation or phase loss occurs on the power supply, the drive triggers power input phase loss protection based on H0A.00.

H0A.01 Absolute position limit

Hex:	200A-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled
1: Enabled
2: Enabled after homing

Description

Used to set the activation condition for enabling the software position limit function and the software limit.

H0A.04 Motor overload protection gain

Hex:	200A-05h	Effective mode:	Real time
Min.:	50	Unit:	-
Max.:	300	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

50–300

Description

Determines the motor overload duration before E620.0 (Motor overload) is reported.

You can change the setpoint to advance or delay the time when overload protection is triggered based on the motor temperature. The setpoint 50% indicates the time is cut by half; 150% indicates the time is increased by 50%. Set this parameter based on the actual temperature of the motor.

H0A.08 Overspeed threshold

Hex:	200A-09h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	20000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm to 20000rpm

Description

Defines the overspeed threshold of the motor.

Value	Threshold	Condition for Reporting E500.0
0	Maximum motor speed x 1.2	If the speed feedback exceeds the overspeed threshold several times, the drive reports E500.0 (Motor overspeed).
1–20000	If H0A-08 ⩾ (Maximum motor speed x 1.2): Overspeed threshold = Maximum motor speed x 1.2	
	If H0A-08 < (Maximum motor speed x 1.2): Overspeed threshold = H0A.08	

H0A.09 **Max. pulse input frequency in position control**

Hex:	200A-0Ah	Effective mode:	Real time
Min.:	100	Unit:	kHz
Max.:	16000	Data Type:	UInt16
Default:	16000	Change:	At stop

Value Range:

100 kHz–16000 kHz

Description

Defines the maximum frequency of input pulses when the position reference source is pulse reference (H05.00 = 0) in the position control mode.

When the actual pulse input frequency exceeds the value of H0A.09, the drive reports EB01.0 (Position reference input error).

H0A.10 **Threshold of excessive local position deviation**

Hex:	200A-0Bh	Effective mode:	Real time
Min.:	0	Unit:	Encoder unit
Max.:	4294967295	Data Type:	UInt32
Default:	27486951	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the threshold for excessive position deviation in the position control mode.

When the position deviation exceeds this threshold, the drive reports EB00.0 (Position deviation too large).

H0A.12 **Runaway protection enable**

Hex:	200A-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disable

1: Enable

Description

Defines whether to enable runaway protection.

0: Disables E234.0 detection when the motor drives a vertical axis or is driven by the load

1: Enables runaway protection

H0A.13 Angle auto-tuning mode

Hex:	200A-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: pre-positioning
1: Inching
6: Static hall
8: Closed-loop pre-positioning
9: Position locking

Description

Selects the motor angle auto-tuning mode:
0: pre-positioning
1: Inching
6: Static hall
8: Closed-loop pre-positioning
9: Position locking

H0A.17 Reference pulse selection

Hex:	200A-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Pulse unit
1: Reference unit

Description

Defines the unit for the position settings in H05.21, H05.22, and H0A.10.

H0A.18 IGBT over-temperature threshold

Hex:	200A-13h	Effective mode:	Real time
Min.:	120	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	140	Change:	Real-time

Value Range:

120°C–175°C

Description

Defines the threshold for reporting E640.0 (IGBT overtemperature) and E640.1 (Flywheel diode overtemperature).

H0A.19 Filter time constant of touch probe 1

Hex:	200A-14h	Effective mode:	Real time
Min.:	0.00	Unit:	us
Max.:	6.30	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00us–6.30us

Description

Defines the filter time of touch probe 1. An active input must last for the time defined by H0A.19.

H0A.20 Filter time constant of touch probe 2

Hex:	200A-15h	Effective mode:	Real time
Min.:	0.00	Unit:	us
Max.:	6.30	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00us–6.30us

Description

Defines the filter time of touch probe 2. An active input must last for the time defined by H0A.20.

H0A.21 STO function display selection

Hex:	200A-16h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–7

Description

Defines whether to display the STO status or report E150.0 after the STO function is triggered.

0: Displays the STO status. The keypad displays "sto_" after the STO function is triggered. In this case, no fault is reported and no output is generated from the fault DO.

1: Displays the STO fault. The keypad displays "E150.0" after the STO function is triggered. In this case, the dive reports the fault and the faulty DO outputs.

H0A.23 TZ signal filter time

Hex:	200A-18h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	31	Data Type:	UInt16
Default:	15	Change:	At stop

Value Range:

0–31

Description

-

H0A.24 Filter time constant of low-speed pulse input terminal

Hex:	200A-19h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	255	Data Type:	UInt16
Default:	30	Change:	At stop

Value Range:

0–255

Description

Defines the filter time constant of low-speed pulse input terminal which is enabled (H05.01 = 0) when the position reference source is pulse input (H05.00 = 0) in the position control mode.

When peak interference exists in the low-speed pulse input terminal, set this parameter to suppress peak interference and prevent motor malfunction due to interference signal inputted to the servo drive.

H0A.25 Speed display DO low-pass filter time

Hex:	200A-1Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	5000	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0 ms–5000 ms
Description
Defines the low-pass filter time constant of the speed information for speed feedback and position references.

H0A.26 Motor overload detection

Hex:	200A-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Show motor overload alarm (E909.0) and fault (E620.0)
1: Hide motor overload alarm (E909.0) and fault (E620.0)
Description
Defines whether to enable motor overload detection.

H0A.27 Average filter time for speed display DO

Hex:	200A-1Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	50	Change:	At stop

Value Range:
0 ms–100 ms
Description
Defines the average filter time constant of the speed information for speed feedback and position references.

H0A.29 Fully closed-loop encoder (ABZ) filter time

Hex:	200A-1Eh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	65535	Data Type:	UInt16
Default:	4111	Change:	At stop

Value Range:
bit0: Fully closed loop encoder (ABZ) pulse signal filtering time
bit8–bit15: Fully closed loop encoder (ABZ) wire breakage filter time
Description
-

H0A.30 Filter time constant of high-speed pulse input terminal

Hex:	200A-1Fh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	ns
Max.:	255	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0 ns–255 ns

Description

Defines the filter time constant of high-speed pulse input terminal which is enabled (H05.01 = 1) when the position reference source is pulse reference (H05.00 = 0) in the position control mode.

When peak interference exists in the high-speed pulse input terminal, set this parameter to suppress peak interference and prevent motor malfunction due to interference signal inputted to the servo drive.

H0A.32 Time threshold for locked motor overheat protection

Hex:	200A-21h	Effective mode:	Real time
Min.:	10	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

10 ms–65535 ms

Description

Defines the overtemperature duration before E630.0 (Motor stall) is detected by the servo drive.

H0A.32 can be used to adjust the sensitivity of motor stall overtemperature detection.

H0A.33 Locked motor overheat protection

Hex:	200A-22h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Enables or disables the detection for E630.0 (Motor stall overtemperature protection).

H0A.36 **Encoder multi-turn overflow fault selection**

Hex:	200A-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Not hide

1: Hide

Description

Defines whether to hide the encoder multi-turn overflow fault in the absolute position linear mode (H02.01 = 1).

H0A.40 **Compensation function selection**

Hex:	200A-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	6	Change:	At stop

Value Range:

bit	Name	Description
0	Overtravel compensation	0: Enabled
		1: Disabled
1	Probe rising edge compensation	0: Disabled
		1: Enabled
2	Probe falling edge compensation	0: Disabled
		1: Enabled
3	Probe scheme	0: New scheme
		1: Old scheme (same as SV660N)
4	Probe 2 separate compensation time	0: Disabled
		1: Enabled

Description

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H0A.41 Forward position of software position limit

Hex:	200A-2Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	2147483647	Change:	At stop

Value Range:

-2147483648 to 2147483647

Description

When the absolute position counter (H0b.07) is larger than H0A.41, the servo drive reports E950.0 (Forward limit switch alarm) and executes stop at forward limit.

H0A.43 **Reverse position of software position limit**

Hex:	200A-2Ch	Effective mode:	Real time
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	-2147483648	Change:	At stop

Value Range:

-2147483648 to 2147483647

Description

When the absolute position counter (H0b.07) is smaller than H0A.43, the servo drive reports alarm E952.0 (Reverse limit switch alarm) and executes stop at reverse limit.

H0A.49 **Braking resistor overtemperature threshold**

Hex:	200A-32h	Effective mode:	Real time
Min.:	100	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	140	Change:	Real-time

Value Range:

100°C–175°C

Description

Defines the temperature threshold for braking resistor overload.

H0A.50 **Encoder communication fault tolerance threshold**

Hex:	200A-33h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	31	Change:	Real-time

Value Range:

0–31

Description

When the communication between the encoder and the drive fails continuously for more than H0A.50 times, it is considered as a communication failure with the encoder. When overspeed point mask is enabled, if the number of consecutive overspeed points exceed H0A.50, it is considered as a communication failure with the encoder.

H0A.51 **Phase loss detection filter times**

Hex:	200A-34h	Effective mode:	Real time

Min.:	3	Unit:	55ms
Max.:	36	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

3–36

Description

Phase loss fault is reported when phase loss keeps active for a period longer than H0A.51.

H0A.52 Encoder temperature protection threshold

Hex:	200A-35h	Effective mode:	Real time
Min.:	0	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	120	Change:	Real-time

Value Range:

0°C–175°C

Description

Defines the temperature threshold for encoder overtemperature protection.

H0A.53 Probe DI ON compensation time

Hex:	200A-36h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	200	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when the touch probe is switched on.

H0A.54 Probe DI OFF compensation time

Hex:	200A-37h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	1512	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when the touch probe is switched off.

H0A.55 Runaway current threshold

Hex:	200A-38h	Effective mode:	Real time
Min.:	100.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	200.0	Change:	Real-time

Value Range:

100.0% to 400.0%

Description

Defines the current threshold for runaway protection detection.

H0A.56 Fault reset delay

Hex:	200A-39h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	60000	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:

0 ms–60000 ms

Description

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H0A.57 Runaway speed threshold

Hex:	200A-3Ah	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

1 rpm to 1000 rpm

Description

Defines the overspeed threshold for runaway protection detection.

H0A.58 Runaway speed filter time

Hex:	200A-3Bh	Effective mode:	Upon the next power-on
Min.:	0.1	Unit:	ms
Max.:	100.0	Data Type:	UInt16
Default:	2.0	Change:	Real-time

Value Range:

0.1 ms–100.0 ms

Description

Defines the speed feedback filter time for runaway protection detection.

H0A.59 Runaway protection detection time

Hex:	200A-3Ch	Effective mode:	Real time
Min.:	10	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

10 ms–1000 ms

Description

The runaway fault will be reported when runaway keeps active for a period longer than H0A.59.

H0A.60 Black box function mode

Hex:	200A-3Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disable

1: Any fault

2: Designated fault

3: Triggered based on designated condition

Description

Defines the condition for triggering black box sampling.

H0A.61 Designated fault code

Hex:	200A-3Eh	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0–6553.5

Description

Defines the fault code for triggering the black box function.

H0A.62 **Trigger source**

Hex:	200A-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	25	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–25
Description
Defines the fault code for triggering the black box function through designated channel.

H0A.63 **Trigger level**

Hex:	200A-40h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
Defines the trigger level for triggering the black box function through designated channel.

H0A.65 **Trigger level**

Hex:	200A-42h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Rising edge
1: Equal
2: Falling edge
3: Edge-triggered
Description
Defines the trigger mode for triggering the black box function through H0A.63.

H0A.66 **Trigger position**

Hex:	200A-43h	Effective mode:	Real time

Min.:	0	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	75	Change:	Real-time

Value Range:

0% to 100%

Description

Defines the pre-trigger position for triggering black box sampling.

H0A.67 Sampling frequency

Hex:	200A-44h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Current loop

1: Position loop

2: Main cycle

Description

Defines the frequency sampling mode during black box sampling.

H0A.70 Overspeed threshold 2

Hex:	200A-47h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	20000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm to 20000rpm

Description

Defines the speed threshold for reporting E500.2 (Position feedback pulse overspeed).

H0A.71 Internal function switch

Hex:	200A-48h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	4098	Change:	Real-time

Value Range:

0–65535

Description

bit	Function	Description
0	MS1 overload curve selection	0: New 1: Old
1	Power failure bleeder switch	0: Enabled 1: Enabled
2	Forced brake motor stop mode	0: Forced stop 1: Non-forced stop
3	New external characteristics switch of multi-speed DI mode	0: Old characteristics 1: New characteristics
4	E120.3 hide switch	0: Enabled 1: Disabled
5	Prohibit software reading parameters	0: Disabled 1: Enabled
6	E108.4 hide switch	0: Disabled 1: Enabled
7	CSV command interpolation	0: Sync interrupt interpolation 1: IRQ interrupt interpolation
8	Data type of motor rated current, inertia and back EMF coefficient	0: 16-bit 1: 32-bit
9	Wire breakage detection	0: Enabled 1: Disabled
10	Torque limit source	0: Auto switch acc. to H02.00 1: H07.09 and H07.10
11	Ultra-accurate speed feedback switch	0: Disable 1: Enabled
12	Power failure retention of homing completion flag	0: Disabled 1: Enabled
13	STO status word fallback switch	0: Switch on disable 1: Fault
14	Encoder adaptive function switch	0: Enabled 1: Disable
15	Interrupt positioning external characteristics	0: Old external characteristics, follows motor operation direction 1: New external characteristics, direction set by parameter

H0A.72 Maximum stop time in ramp-to-stop

Hex:	200A-49h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	At stop

Value Range:
0 ms–65535 ms
Description
Defines the time for the motor to decelerate from the maximum speed to 0rpm during ramp-to-stop.

H0A.73 STO 24 V disconnection filter time

Hex:	200A-4Ah	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	5	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:
1 ms–5 ms
Description
Defines the delay from the moment when 24V is disconnected to the moment when the STO state applies.

H0A.74 Filter time for two inconsistent STO channels

Hex:	200A-4Bh	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:
1 ms–1000 ms
Description
Defines the delay from the moment the inconsistent 24V is input to the drive through two channels to the moment when the STO state applies.

H0A.75 Servo OFF delay after STO triggered

Hex:	200A-4Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	25	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:
0 ms–25 ms
Description
Defines the delay from the moment the STO state is triggered to the moment the S-ON signal is switched off.

H0A.90 Speed display low-pass filter time

Hex:	200A-5Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the low-pass filter time constant for displayed speed values.

H0A.91 Moving average filter time for torque display values

Hex:	200A-5Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the moving average filter time constant for torque display values.

H0A.92 Moving average filter time for position display values

Hex:	200A-5Dh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the moving average filter time constant for position display values.

H0A.93 Low-pass filter time for voltage display values

Hex:	200A-5Eh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	250	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–250 ms

Description
Defines the low-pass filter time constant for voltage display values.

H0A.94 **Low-pass filter time for thermal display values**

Hex:	200A-5Fh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	250	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0 ms–250 ms
Description
Defines the filter time constant for thermal display values.

2.12 H0b Monitoring Parameters

H0b.00 **Motor speed actual value**

Hex:	200b-01h	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:
-32767rpm to 32767rpm
Description
It displays the actual speed of the servo motor after round-off, in unit of 1 RPM. Set in H0A.25 (Filter time constant of speed feedback display) the filter time constant for H0b.00.

H0b.01 **Speed reference**

Hex:	200b-02h	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:
-32767rpm to 32767rpm
Description
Indicates the present speed reference (accurate to 1rpm) of the drive in the position and speed control modes.

H0b.02 Internal torque reference

Hex:	200b-03h	Effective mode:	-
Min.:	-500.0	Unit:	%
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:

-500.0% to 500.0%

Description

Displays present torque reference (accurate to 0.1%). The value 100.0% corresponds to the rated torque of the motor.

H0b.03 Input (DI) signal monitoring

Hex:	200b-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays the level status of eight DI terminals without filtering.

Upper LED segments ON: high level (indicated by "1") Lower LED segments ON: low level (indicated by "0")

H0b.05 Output (DO) signal monitoring

Hex:	200b-06h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays the level status of 5 DO terminals without filtering.

Upper LED segments ON: high level (indicated by "1") Lower LED segments ON: low level (indicated by "0")

H0b.07 Absolute position counter

Hex:	200b-08h	Effective mode:	-

Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Indicates present absolute position (reference unit) of the motor in the position control mode.

This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.09 Mechanical angle

Hex:	200b-0Ah	Effective mode:	-
Min.:	0.0	Unit:	°
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0° to 360.0°

Description

Displays present mechanical angle (encoder unit) of the motor. The setpoint 0 indicates the mechanical angle is 0°.

Actual mechanical angle = 360° x H0b.09/(Maximum value of H0b.09 + 1)

Maximum value of H0b.09 for an absolute encoder is 65535.

H0b.10 Electrical angle

Hex:	200b-0Bh	Effective mode:	-
Min.:	0.0	Unit:	°
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0° to 360.0°

Description

Indicates the present electrical angle of the motor, which is accurate to 0.1°. The electrical angle variation range is ±360.0° during rotation. If the motor has four pairs of poles, each revolution generates four rounds of angle change from 0° to 359°. Similarly, if the motor has five pairs of poles, each revolution generates five rounds of angle change from 0° to 359°.

H0b.12 Average load ratio

Hex:	200b-0Dh	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	800.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0% to 800.0%

Description

Displays the percentage of the average load torque to the rated torque of the motor, which is accurate to 0.1%. The value 100.0% corresponds to the rated torque of the motor.

H0b.13 Input reference counter

Hex:	200b-0Eh	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Used to count and display the number of position references not divided or multiplied by the electronic gear ratio during operation.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.15 Position following error (encoder unit)

Hex:	200b-10h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Used to count and display the position deviation value after being divided or multiplied by the electronic gear ratio in the position control mode.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

Note:
H0b.15 can be clear when the condition defined in H05.16 (Clear action) is met.

H0b.17 Feedback pulse counter

Hex:	200b-12h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p
Description
Used to count the position pulses fed back by the encoder in any control mode.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.19 Total power-on time

Hex:	200b-14h	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:
0.0s–429496729.5s
Description
Used to record the total operating time of the servo drive.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.
Note:
If the servo drive is switched on and off repeatedly within a short period of time, a deviation within 1h may be present in the total power-on time record.

H0b.21 Displayed AI1 voltage

Hex:	200b-16h	Effective mode:	-
Min.:	-12.00	Unit:	V
Max.:	12.00	Data Type:	Int16
Default:	0.00	Change:	Unchangeable

Value Range:
-12.00 V–12.00 V

Description

Displays the actual sampling voltage of AI1.

H0b.22 Displayed AI2 voltage

Hex:	200b-17h	Effective mode:	-
Min.:	-12.00	Unit:	V
Max.:	12.00	Data Type:	Int16
Default:	0.00	Change:	Unchangeable

Value Range:

-12.00 V–12.00 V

Description

Displays the actual sampling voltage of AI2.

H0b.24 Phase current RMS value

Hex:	200b-19h	Effective mode:	-
Min.:	0.0	Unit:	A
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 A–6553.5 A

Description

Displays the RMS value of the phase current of the motor, accurate to 0.01 A.

H0b.25 Angle obtained upon voltage injection auto-tuning

Hex:	200b-1Ah	Effective mode:	-
Min.:	0.0	Unit:	°
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0° to 360.0°

Description

-

H0b.26 Bus voltage

Hex:	200b-1Bh	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16

Default:	0.0	Change:	Unchangeable

Value Range:

0.0 V–6553.5 V

Description

Displays the DC bus voltage of the main circuit input voltage after rectification, which is accurate to 0.01 V.

H0b.27 Module temperature

Hex:	200b-1Ch	Effective mode:	-
Min.:	-20	Unit:	°C
Max.:	200	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-20°C–200°C

Description

Indicates the temperature of the module inside the servo drive, which can be used as a reference for estimating the actual temperature of the drive.

H0b.28 Absolute encoder fault information given by FPGA

Hex:	200b-1Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.29 Axis status information given by FPGA

Hex:	200b-1Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.30 Axis fault information given by FPGA

Hex:	200b-1Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.31 Encoder fault information

Hex:	200b-20h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.33 Fault log

Hex:	200b-22h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Present fault
1: Last fault
2: 2nd to last fault
3: 3rd to last fault
4: 4th to last fault
5: 5th to last fault 6: 6th to last fault
7: 7th to last fault
8: 8th to last fault
9: 9th to last fault
10: 10th to last fault
11: 11th to last fault
12: 12th to last fault
13: 13th to last fault
14: 14th to last fault
15: 15th to last fault
16: 16th to last fault
17: 17th to last fault
18: 18th to last fault
19: 19th to last fault

Description

Used to view the latest 20 faults of the drive.

H0b.34 Fault code of the selected fault

Hex:	200b-23h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.35 Timestamp of the selected fault

Hex:	200b-24h	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:

0.0s–429496729.5s

Description

-

H0b.37 Motor speed upon occurrence of the selected fault

Hex:	200b-26h	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32767rpm to 32767rpm

Description

-

H0b.38 Motor phase U current upon occurrence of the selected fault

Hex:	200b-27h	Effective mode:	-
Min.:	-3276.7	Unit:	A
Max.:	3276.7	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:

-3276.7 A to 3276.7 A

Description

-

H0b.39 Motor phase V current upon occurrence of the selected fault

Hex:	200b-28h	Effective mode:	-
Min.:	-3276.7	Unit:	A
Max.:	3276.7	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:

-3276.7 A to 3276.7 A

Description

-

H0b.40 Bus voltage upon occurrence of the selected fault

Hex:	200b-29h	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16

Default:	0.0	Change:	Unchangeable

Value Range:

0.0 V–6553.5 V

Description

-

H0b.41 Input terminal state on selected fault

Hex:	200b-2Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.43 Output terminal status upon occurrence of the selected fault

Hex:	200b-2Ch	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.45 Internal fault code

Hex:	200b-2Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.46 Absolute encoder fault information given by FPGA upon occurrence of the selected fault

Hex:	200b-2Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.47 System status information given by FPGA upon occurrence of the selected fault

Hex:	200b-30h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.48 System fault information given by FPGA upon occurrence of the selected fault

Hex:	200b-31h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.49 Encoder fault information upon occurrence of the selected fault

Hex:	200b-32h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.51 Internal fault code upon occurrence of the selected fault

Hex:	200b-34h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.52 FPGA timeout fault standard bit upon occurrence of the selected fault

Hex:	200b-35h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.53 Position following error (reference unit)

Hex:	200b-36h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p
Description
Indicates the position deviation value which has not been divided or multiplied by the electronic gear ratio in the position control mode.
Position deviation (reference unit) is the value obtained after encoder position deviation calculation. The precision is compromised during division.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.55 Motor speed actual value

Hex:	200b-38h	Effective mode:	-
Min.:	-2147483648.0	Unit:	RPM
Max.:	2147483647.0	Data Type:	Int32
Default:	0.0	Change:	Unchangeable

Value Range:

-2147483648.0rpm to 2147483647.0rpm

Description

Indicates the actual value of motor speed, which is accurate to 0.1 rpm.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.
H0A.25 (Filter time constant of speed feedback display) can be used to set the filter time constant of the speed feedback.

H0b.57 Control circuit bus voltage

Hex:	200b-3Ah	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 V–6553.5 V

Description

Displays the bus voltage of the control circuit.

H0b.58 Mechanical absolute position (low 32 bits)

Hex:	200b-3Bh	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the low 32-bit value (encoder unit) of the mechanical position feedback when the absolute encoder is used.

H0b.60 Mechanical absolute position (high 32 bits)

Hex:	200b-3Dh	Effective mode:	-

Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Displays the high 32-bit value (encoder unit) of the mechanical position feedback when the absolute encoder is used.

H0b.63 NotRdy state

Hex:	200b-40h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0: Normal
1: Control circuit error
2: Main circuit power input error

3: Bus undervoltage
4: Soft start failed
5: Encoder initialization undone
6: Short circuit to ground failed
7: Others
9: Fully closed-loop encoder initialization not completed

Description

Displays the reason for the NRD state.
0: Normal
1: Control circuit error
2: Main circuit power input error

3: Bus undervoltage
4: Soft start failed
5: Encoder initialization undone
6: Short circuit to ground failed
7: Others
9: Fully closed-loop encoder initialization not completed

H0b.64 Real-time input position reference counter

Hex:	200b-41h	Effective mode:	-

Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Displays the value of the pulse reference counter before being divided or multiplied by the electronic gear ratio. This value is independent of the servo drive status and the control mode.

H0b.66 Encoder temperature

Hex:	200b-43h	Effective mode:	-
Min.:	-32768	Unit:	°C
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32768°C–32767°C

Description

-

H0b.67 Load rate of braking resistor

Hex:	200b-44h	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	200.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0% to 200.0%

Description

-

H0b.70 Number of absolute encoder revolutions

Hex:	200b-47h	Effective mode:	-
Min.:	-32768	Unit:	Rev
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32768Rev to 32767Rev

Description

Indicates the number of revolutions of the absolute encoder.

H0b.71 Single-turn position fed back by the absolute encoder

Hex:	200b-48h	Effective mode:	-
Min.:	0	Unit:	p
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 2147483647p

Description

Displays the position feedback of the absolute encoder within one turn.

H0b.74 System fault information given by FPGA

Hex:	200b-4Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.77 Encoder position (low 32 bits)

Hex:	200b-4Eh	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the low 32-bit value of the position feedback of the absolute encoder.

H0b.79 Encoder position (high 32 bits)

Hex:	200b-50h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Displays the high 32-bit value of the position feedback of the absolute encoder.

H0b.81 Single-turn position of the rotary load (low 32 bits)

Hex:	200b-52h	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the low 32-bit value of the position feedback of the rotary load when the absolute system works in the rotation mode.

H0b.83 Single-turn position of the rotary load (high 32 bits)

Hex:	200b-54h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Displays the high 32-bit value of the position feedback of the rotary load when the absolute system works the rotation mode.

H0b.85 Single-turn position of the rotary load (reference unit)

Hex:	200b-56h	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the high 32-bit value of the position feedback of the rotary load when the absolute system works the rotation mode.

H0b.87 IGBT junction temperature

Hex:	200b-58h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–200

Description

-

H0b.90 Group No. of the abnormal parameter

Hex:	200b-5Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.91 Offset within the group of the abnormal parameter

Hex:	200b-5Ch	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.93 Closed loop state

Hex:	200b-5Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0: Half closed loop

1: Fully closed loop

Description
Displays the closed loop state in position control mode.

H0b.94 Individual power-on time

Hex:	200b-5Fh	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:
0.0s–429496729.5s
Description
Display the individual power-on time of the drive.

H0b.96 Individual power-on time upon occurrence of the selected fault

Hex:	200b-61h	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:
0.0s–429496729.5s
Description
-

H0b.98 Dynamic braking resistor load rate

Hex:	200b-63h	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	200.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0% to 200.0%
Description
Display dynamic braking resistor load rate.

2.13 H0C Fault and Protection Parameters 2

H0C.53 Probe DI ON compensation time 2

Hex:	200C-36h	Effective mode:	Real time

Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	200	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when touch probe 2 is switched on. (Effective when H0A_40 bit4 = 1)

H0C.54 **Probe DI OFF compensation time 2**

Hex:	200C-37h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	1512	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when touch probe 2 is switched off. (Effective when H0A_40 bit4 = 1)

H0C.71 **Internal function switch**

Hex:	200C-48h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

bit9: FPGA encoder feedback overspeed point hide switch

2.14 H0d Auxiliary Parameters

H0d.00 **Software Reset**

Hex:	200d-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation
1: Enable

Description

Programs in the drive are reset automatically (similar to the program reset upon power-on) after the software reset function is enabled, without the need for a power cycle.

H0d.01 Fault Reset

Hex:	200d-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation
1: Enable

Description

When a No. 1 or No. 2 resettable fault occurs, you can enable the fault reset function in the non-operational state after rectifying the fault cause, stopping the keypad from displaying the fault and allowing the drive to enter the "rdy" state.
When a No. 3 alarm occurs, you can enable the fault reset function directly, regardless of the servo drive status.

H0d.02 Inertia auto-tuning enable

Hex:	200d-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65

Description

Used to enable offline inertia auto-tuning through the keypad. In the parameter display mode, switch to H0d.02 and press the SET key to enable offline inertia auto-tuning.

H0d.04 Read/write in encoder ROM

Hex:	200d-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16

Default:	0	Change:	At stop

Value Range:

0: No operation
1: Write ROM
2: Read ROM
3: ROM failure

Description

For Inovance encoders, the USB and control circuit need to be disconnected after writing in ROM to activate parameters. Also ensure that the drive is powered on during parameter writing.

H0d.05 Emergency stop

Hex:	200d-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: No operation
1: Emergency stop

Description

-

H0d.06 Current loop auto-tuning test

Hex:	200d-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation
1: Enable current loop auto-tuning
2: Enable current loop step test (static)
3: Enable current loop step test

Description

0: No operation
1: Enable current loop auto-tuning
2: Enable current loop step test (static)
3: Enable current loop step test

H0d.10 Analog channel auto adjusting

Hex:	200d-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Adjusted through AI1

2: Adjusted through AI2

Description

When automatic adjustment of the analog channel is enabled, the drive automatically corrects the zero drift voltage of the analog channel to improve signal detection accuracy.

H0d.12 Phase U/V current balance correction

Hex:	200d-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

-

H0d.17 Forced DI/DO enable switch

Hex:	200d-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit0: Forced DI enable switch

0: Disabled

1: Enabled

bit1: Forced DO enable switch

0: Disabled

1: Enabled

Description

Forced DI/DO selection.

H0d.18 Forced DI value

Hex:	200d-13h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:

0–255

Description

Defines whether the DI functions set in group H03 is active when forced DI is activated (H0d.17 = 1 or 3).

The value of H0d.18 is displayed as a hexadecimal on the keypad. When it is converted to a binary value, "bit(n) = 1" indicates the level logic of DI function is high level; "bit(n) = 0" indicates the level logic of the DI function is low level.

H0d.19 Forced DO value

Hex:	200d-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–31

Description

Defines whether the DO functions assigned in group H04 are active when forced DO is active (H0d.17 = 2 or 3).

The value of H0d.19 is displayed as a hexadecimal on the keypad. When it is converted to a binary value, "bit(n) = 1" indicates the DO function is active; "bit (n) = 0" indicates the DO function is inactive.

H0d.20 Absolute encoder reset

Hex:	200d-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Reset

2: Reset the fault and multi-turn data

Description
You can reset the encoder error or the multi-turn data fed back by the encoder by setting H0d.20.

H0d.23 Motor cogging torque ripple auto-tuning enable

Hex:	200d-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: No auto-tuning
1: Enabled
Description
-

H0d.29 Motor parameter auto-tuning

Hex:	200d-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: No operation
1: Enabled
Description
Resistor inductance auto-tuning.

2.15 H0E Communication Function Parameters

H0E.00 Node address

Hex:	200E-01h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	127	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
1–127
Description
CAN Indicates the slave node address. Ensure this parameter is consistent with the configuration of the host controller.

H0E.01 **Save objects written through communication to e2prom**

Hex:	200E-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Not save

1: Save parameters

2: Save object dictionaries

3: Save parameters and object dictionaries

4: Save object dictionaries written before communication (OP)

255: Determine through H0E03 and H0E04

Description

-

H0E.03 **Save objects written through software (commissioning protocol) to e2prom**

Hex:	200E-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Do not save

1: Save

Description

Saves objects written through software (commissioning protocol) to e2prom, including the parameter and object dictionary.

H0E.04 **Save objects written through communication to e2prom (excluding commissioning protocol)**

Hex:	200E-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Do not save

1: Save

Description

You can use this parameter to determine whether to save communication written data in e2prom (excluding commissioning protocol) (CANOpen, CANLink, Ethernet COE, ModBus485). The data include the function code and object dictionary

H0E.07 Object dictionary unit selection

Hex:	200E-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Reference unit system (p/s, p/s2)

1: User unit system (0.01 RPM, ms)

Description

Servo unit system switching:

0: Use reference unit system. The speed type dictionary unit is p/s, and the acceleration type object dictionary is p/s2.

1: Use the user unit system. The speed type object dictionary unit is 0.01 rpm, and the acceleration type object dictionary unit is the time (ms) taken to change from 0 rpm to 1000 rpm.

H0E.10 CAN selection

Hex:	200E-0Bh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Pulse/Axis control command

1: Enhanced axis control command

2: CANopen

Description

Indicates the CAN application layer:

0: Pulse/Axis control command

1: Enhanced axis control command

2: CANopen

If you use CiA402, set H02.00 to 8 and H0E.10 to 2.

If you only CANopen communication, set H0E.10 to 2.

H0E.11 **CAN baud rate**

Hex:	200E-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	5	Change:	At stop

Value Range:

0: 20 kbps
1: 50 kbps
2: 100 kbps
3: 125 kbps
4: 250 kbps
5: 500 kbps
6: 1 Mbps
1 Mbps - non-standard

Description

It sets the CAN (CANlink or CANopen) communication rate between the servo drive and the host controller. The communication rate set in the servo drive must be the same as that in the host controller. Otherwise, communication will fail. If H0E.11 is set to 6, the baud rate is 1 Mbps. 80% sampling points are used to match most PLCs with a 1M standard baud rate.
If H0E.11 is set to 7, the baud rate is 1 Mbps. 70% sampling points are used to match most PLCs with a 1M non-standard (deviated) baud rate. Reducing sampling points can also reduce error frames.

H0E.12 **Excessive IP position command increment count**

Hex:	200E-0Dh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	30	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

1–30

Description

-

H0E.13 **CANopen sync period error limit**

Hex:	200E-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: 1/4
1: 1/2
2: 3/4
3: 1
4: 2
5: Disabled
Description
SYNC signal error threshold in the IP mode.

H0E.14 CANopen communication state

Hex:	200E-0Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–9
Description
-

H0E.17 Get the count of received NMT frames with incorrect length

Hex:	200E-12h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0E.18 Get the count of received NMT frames with incorrect command

Hex:	200E-13h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0E.19 **Get received heartbeat frames of wrong length**

Hex:	200E-14h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.80 **Modbus baud rate**

Hex:	200E-51h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	9	Change:	Real-time

Value Range:

0: 300 bps
1: 600 bps
2: 1200 bps
3: 2400 bps
4: 4800 bps
5: 9600 bps
6: 19200 bps
7: 38400 bps
8: 57600 bps
9: 115200 bps

Description

Defines the communication rate between the servo drive and the host controller. The baud rate set in the servo drive must be the same as that in the host controller. Otherwise, communication will fail.

H0E.81 **Modbus data format**

Hex:	200E-52h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:

0: No parity, 2 stop bits (N-2)
1: Even parity, 1 stop bit (E-1)
2: Odd parity, 1 stop bit (O-1)
3: No parity, 1 stop bit (N-1)

Description

Defines the data check mode between the servo drive and the host controller during communication.
0: No parity, 2 stop bits
1: Even parity, 1 stop bit
2: Odd parity, 1 stop bit
3: No parity, 1 stop bit
The data format of the servo drive must be the same as that of the host controller. Otherwise, communication will fail.

H0E.82 Modbus response delay

Hex:	200E-53h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–20 ms

Description

Defines the delay from the moment when the slave receives a command from the host controller to the moment when the slave returns a response.

H0E.83 Modbus communication timeout

Hex:	200E-54h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	600	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–600 ms

Description

-

H0E.84 Sequence of Modbus communication data bits

Hex:	200E-55h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: High bits before low bits

1: Low bits before high bits

Description

Defines the 32-bit data transmission format of Modbus communication.
0: High 16 bits before low 16 bits

1: Low 16 bits before high 16 bits

H0E.90 Communication version

Hex:	200E-5Bh	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–655.35

Description

-

H0E.97 Communication monitoring parameter 1

Hex:	200E-62h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

-

H0E.98 Communication monitoring parameter 2

Hex:	200E-63h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

-

2.16 H0F Fully Closed-Loop

H0F.00 **Encoder feedback mode**

Hex:	200F-01h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Internal encoder feedback

1: External encoder feedback

2: Inner/Outer loop switchover

Description

Defines the encoder feedback signal source in fully closed-loop control.

0: Internal encoder feedback. The position feedback signals come from the motor encoder.

1: External encoder feedback The position feedback signals come from the fully closed-loop external encoder

and electronic gear ratio 1 is used.

2: Inner/Outer loop switchover: The DI assigned with FunIN.24 (GEAR_SEL, electronic gear ratio switchover) is switch between inner and outer position closed loops.

DI function: disabled, internal encoder feedback, with electronic gear ratio 1 used

Enabled, external encoder feedback, with electronic gear ratio 2 used

Note

To switch between inner and outer loops, you need to set H0F.00 to 2, rather than changing it to 0 or 1 in realtime.

H0F.01 **External encoder usage mode**

Hex:	200F-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Standard operating direction
1: Reverse operating direction

Description

Defines the feedback pulse counting direction of internal and external encoders when the motor rotates in the fully closed-loop mode.
0: Standard operating direction: The pulse feedback counter of the internal encoder (H0F.18) is in the same direction as that of the external encoder (H0F.20) during rotation of the motor.
1: Reverse operating direction: The pulse feedback counter of the internal encoder (H0F.18) is in the opposite direction as that of the external encoder (H0F.20) during rotation of the motor.

H0F.04 External encoder pulses per revolution

Hex:	200F-05h	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	10000	Change:	At stop

Value Range:

1–2147483647

Description

Defines the pulses fed back by the external encoder per revolution of the motor. It defines the quantity relation between feedback pulses from the external encoder and those from the internal encoder.
Calculate the value of this parameter through analyzing mechanical parameters. When rigid connection is applied between the motor and the external encoder (scale), you can also set this parameter using the following method:
1. Manually rotate the motor and observe H0F.18 (Feedback pulse counter of internal encoder) in the meantime. After ensuring that the motor has rotated for a full turn (H0F.18 = Motor resolution), calculate the change of H0F.20 (Feedback pulse counter of external encoder) and use the absolute value of the change as the value of H0F.04.
2. Assume values of H0F.18 and H0F.20 are X1 and Y1 before the motor rotates and X2 and Y2 after the motor rotates, then the following formula applies: H0F.04 = Motor resolution x (Y2 - Y1)/(X2 - X1) The calculated result must be positive; if not, perform step 1 again.
For non-rigid connection, an error may exist in the calculation result.
Note:
Ensure H0F.04 is set properly. Otherwise, EB02.0 (Position deviation too large in fully closed loop) may occur after the drive operates.

H0F.08 Excessive deviation threshold in compound control mode

Hex:	200F-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1000	Change:	Real-time

Value Range:

0–2147483647

Description

Defines the position deviation threshold at which the servo drive reports EB02.0 (Position deviation too large in fully closed-loop mode).

When H0F.08 is set to 0, the drive does not detect EB02.0 and always clears the fully closed-loop position deviation.

H0F.10 Clear deviation in compound control mode

Hex:	200F-0Bh	Effective mode:	Real time
Min.:	0	Unit:	Rev
Max.:	100	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0 Rev to 100 Rev

Description

Defines the number of revolutions rotated by the motor per a clear of the fully closed-loop position deviation during operation. The number of revolutions is reflected by H0F.18 (Feedback pulse counter of internal encoder). The number of motor revolutions will not be cleared when the drive is not in the operational state.

H0F.13 Compound vibration suppression filter time

Hex:	200F-0Eh	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0 ms–6553.5 ms

Description

Defines the time constant for compound vibration suppression in fully closed-loop control when external encoder feedback (H0F.00 = 1 or 2) is used.

Increase the setpoint gradually and check the response change.
When the stiffness of the transmission mechanism between fully closed loop and internal loop is insufficient, set H0F.13 properly to improve system stability, which is to generate the effect of internal loop temporarily and form a fully closed loop again after the system is stabilized. When the stiffness is sufficient, there is no need to adjust this parameter.

H0F.16 Pulse deviation display in compound control mode

Hex:	200F-11h	Effective mode:	-
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648 to 2147483647
Description
Used to count and display the position deviation absolute value in fully closed loop control.
Pulse deviation in compound control = Absolute position feedback of external encoder - Absolute position feedback conversion value of internal encoder.
The alignment of inner and outer loop feedbacks is performed each time the deviation is cleared.

H0F.18 Internal position pulse feedback display

Hex:	200F-13h	Effective mode:	-
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648 to 2147483647
Description
Used to count and display the number of feedback pulses of the internal encoder (after being divided or multiplied by electronic gear ratio, in internal encoder unit).

H0F.20 External position pulse feedback display

Hex:	200F-15h	Effective mode:	-
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Used to count and display the number of feedback pulses of the external encoder (after being divided or multiplied by electronic gear ratio, in external encoder unit).

H0F.22 External encoder phase Z detection invalid (quadrature pulse feedback)

Hex:	200F-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Detected

1: Not detected

Description

-

H0F.25 Set the source of touch probe Z signal in fully closed-loop mode.

Hex:	200F-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Motor Z signal

1: External feedback Z signal

Description

-

H0F.45 Positioning completed/Position deviation threshold in fully closed-loop mode

Hex:	200F-2Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Threshold scaled to outer loop unit

1: Same threshold used for inner and outer loops

Description

0: H05.21 or H0A.10 or 6067 or 6065 (scaled to outer loop unit)

1: Same threshold used for inner and outer loops

H0F.46 Fully closed-loop speed feedback selection

Hex:	200F-2Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Internal encoder feedback

1: External encoder feedback

Description

-

2.17 H11 Multi-position

H11.00 Multi-position running mode

Hex:	2011-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Single run (number of displacements selected in H11.01)

1: Cyclic operation (number of displacement selected in H11.01)

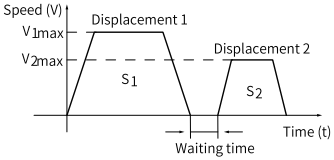
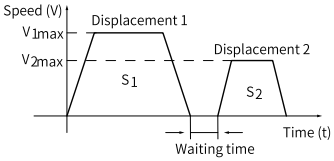
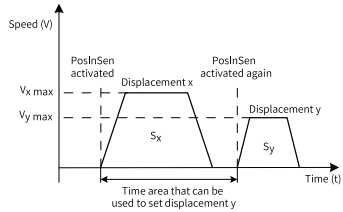
2: DI-based operation (selected by DI)

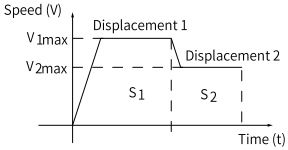
3: Sequential operation

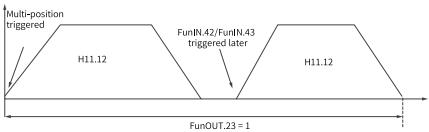
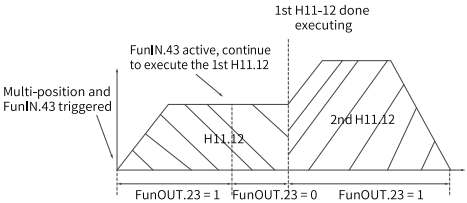
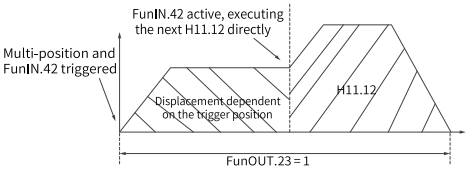
5: Axis-controlled continuous operation

Description

Defines the multi-position operation mode when the main position reference source is multi-position references (H05.00 = 2) in the position control mode.

Value	Operation Mode	Remarks	Operation Curve
0	Individual operation	The drive stops after one cycle of operation. The drive automatically switches to the next speed. You can set the interval time between displacements. The multi-position reference is level-triggered.	 V 1max , V 2max : maximum operating speeds in displacement 1 and displacement 2 S 1 , S 2 : displacement 1 and displacement 2
1	Cyclic operation	The starting displacement after the first cycle is displacement 1. The drive automatically switches to the next speed. You can set the interval time between displacements. The multi-position reference is level-triggered.	 V 1max , V 2max : maximum operating speeds in displacement 1 and displacement 2 S 1 , S 2 : displacement 1 and displacement 2
2	DI-based operation	The drive continues operating when the displacement No. is updated. The speed No. is determined by the DI logic. The interval time between displacements is determined by the command delay of the host controller. The multi-position reference is edge-triggered.	 V xmax , V ymax : maximum operating speeds in displacement x and displacement y S x , S y : displacement x and displacement y

Value	Operation Mode	Remarks	Operation Curve
3	Sequential operation	The drive stops after one cycle of operation. (H11.05 = 0 or H11.05 > H11.01). When H11.05 is greater than H11.01, the software will set H11.05 to 0. The starting displacement after the first cycle is defined by H11.05. The drive automatically switches to the next speed. There is no interval time between displacements. The multi-position reference is level-triggered.	 V_{1max} , V_{2max} : maximum operating speeds in displacement 1 and displacement 2 S_1 , S_2 : displacement 1 and displacement 2

Value	Operation Mode	Remarks	Operation Curve
5	Axis-controlled continuous operation	The drives executes one displacement only. The individual operation mode, sequential operation mode, and interrupted operation mode are included. The PosInSen (multi-position reference enable) signal is level-triggered.	• Individual operation  The PosInSen (multi-position reference enable) signal is triggered only once (FunIN.43/42 triggered later). The drive stops after executing the distance defined by H11.12. • Sequential operation  The PosInSen (multi-position reference enable) signal is triggered only once. Write H11.12 again and activate FunIN.43 when the distance defined by the first H11.12 is still in progress.After receiving the new distance (or speed), which is the second H11.12, the drive continues executing the first H11.12 until the distance defined by the first H11.12 is done. Then it starts to execute the second H11.12 directly. The travel distance therefore is the sum of the first H11.12 and the second H11.12. • Interrupted operation  The PosInSen (Multi-position reference enable) signal is triggered only once. Write H11.12 (such as 1000000) again and activate FunIN.42 when the first H11.12 (such as 9000000) is still in progress. After receiving the new distance (or speed), which is the second H11.12, the drive stops executing the first H11.12 and turns to executing the second H11.12.

To use the multi-position function, assign FunIN.28 (PosInSen, multi-position reference enable) to a DI first. See "Group H03: Terminal input parameters" for the setting mode.

The positioning completed (COIN) signal is activated each time upon completion of a displacement. To determine whether a certain displacement is done executing, use FunOUT.5 (COIN, positioning completed). See "Group H04: Terminal output parameters" for details.

Ensure the S-ON signal is active during operation of each displacement. Otherwise, the drive stops immediately as defined by H02.05 (Stop mode at S-ON OFF) and the positioning completed (COIN) signal in inactive. In modes other than DI-based operation, if the S-ON signal is active but multi-position is disabled during operation of a certain displacement, the drive abandons the unsent displacement reference and stops, with the positioning completed (COIN) signal being active. If the multi-position function is enabled again, the displacement to be executed is defined by H11.02.

H11.01 Number of displacement references in multi-position mode

Hex:	2011-02h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–16

Description

Defines the total number of displacement references in the multi-position mode. You can set different displacements, operating speeds, and acceleration/deceleration time for each displacement.

H11.00 ≠ 2: Displacements are switched automatically in a sequence from 1, 2... H11.01.

H11.00 is 2: Assign four DIs (Hardware DI or VDI) with DI functions 6 to 9 (FunIN.6: CMD1 to FunIN.9: CMD4) and control the DI logic through the host controller to switch between different speeds. The segment No. is a 4-bit binary value. Bits 0 to 3 correspond to CMD1 to CMD4.

The displacement No. is a 4-bit binary value. The relationship between the displacement numbers and CMD1...CMD4 is shown in the following table.

FunIN.9	FunIN.8	FunIN.7	FunIN.6	Segment No.
CMD4	CMD3	CMD2	CMD1	
0	0	0	0	1
0	0	0	1	2
...				
1	1	1	1	16

H11.02 Starting displacement No. after pause

Hex:	2011-03h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Continue to execute the unexecuted displacements

1: Start from displacement 1

Description

Defines the starting displacement No. when the multi-position operation recovers from a pause.

Pause:

1. The servo drive switches to another control mode or the interrupt positioning function is enabled during multi-position operation.

2. The internal multi-position enable signal (FunIN.28:PosInSen) changes from "active" to "inactive".

0: Continue to execute the unexecuted displacements: For example, if H11.01 is set to 16 and the drive pauses at displacement 2, after the drive recovers from the pause, it will start from displacement 3.

1: Start from displacement 1: For example, if H11.01 is set to 16 and the drive pauses at displacement 2, after the drive recovers from the pause, it will start from displacement 1.

H11.03 Interval time unit

Hex:	2011-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: ms

1: s

Description

Defines the unit of acceleration/deceleration time and the interval time during multi-position operation.

Acceleration/Deceleration time: time for the motor to change from 0 rpm to 1000 rpm at a constant speed.

Interval time: interval time that starts from the end of the last reference to the beginning of the next reference

H11.04 Displacement reference type

Hex:	2011-05h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Relative displacement reference

1: Absolute displacement reference

Description

Relative displacement: position increment of the target position relative to the current motor position

Absolute displacement: position increment of the target position relative to the motor home.

H11.05 Starting displacement No. in sequential operation

Hex:	2011-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–16

Description

Defines whether to perform cyclic operation and the starting displacement No. after the first cycle of operation in the sequential operation mode (H11.00 = 3).

0: The drive executes the displacements defined by H11.01 only once and then stops. The motor is in the locked state.

1 to 16: The drive operates cyclically, with the starting displacement No. defined by H11.05 after the first cycle of operation. The value of H11.05 should be lower than or equal to H11.01.

H11.09 Deceleration upon axis control OFF

Hex:	2011-0Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	65535	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.10 Starting speed of displacement 1

Hex:	2011-0Bh	Effective mode:	Real time

Min.:	0	Unit:	RPM
Max.:	6000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm to 6000rpm

Description

-

H11.11 Stop speed of displacement 1

Hex:	2011-0Ch	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	6000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm to 6000rpm

Description

-

H11.12 Displacement 1

Hex:	2011-0Dh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

Defines displacement 1 (reference unit) in multi-position operation.

H11.14 Max. speed of displacement 1

Hex:	2011-0Fh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

Defines the maximum speed of displacement 1 in multi-position operation. The maximum speed is the average operating speed when the motor is not in the acceleration/deceleration process. If H11.12 is set to a too low value, the actual motor speed will be lower than H11.14.

H11.15 Acc/Dec time of displacement 1

Hex:	2011-10h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the time for the motor to change from 0 rpm 1000 rpm at a constant speed during displacement 1.

H11.16 Interval time after displacement 1

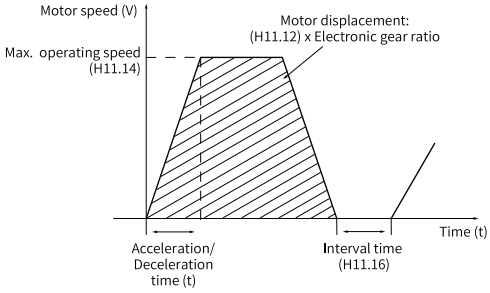
Hex:	2011-11h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

Defines the interval time that starts from the end of displacement 1 to the beginning of the next displacement.



H11.17 **Displacement 2**

Hex:	2011-12h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:
-1073741824 to 1073741824
Description
-

H11.19 **Max. speed of displacement 2**

Hex:	2011-14h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
1rpm to 10000rpm
Description
-

H11.20 **Acc/Dec time of displacement 2**

Hex:	2011-15h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
-

H11.21 **Interval time after displacement 2**

Hex:	2011-16h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms(s) to 10000 ms(s)

Description

-

H11.22 **Displacement 3**

Hex:	2011-17h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.24 **Max. speed of displacement 3**

Hex:	2011-19h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.25 **Acc/Dec time of displacement 3**

Hex:	2011-1Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.26 **Interval time after displacement 3**

Hex:	2011-1Bh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16

Default:	10	Change:	Real-time

Value Range:
0 ms(s) to 10000 ms(s)
Description
-

H11.27 Displacement 4

Hex:	2011-1Ch	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:
-1073741824 to 1073741824
Description
-

H11.29 Max. speed of displacement 4

Hex:	2011-1Eh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
1rpm to 10000rpm
Description
-

H11.30 Acc/Dec time of displacement 4

Hex:	2011-1Fh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
-

H11.31 Interval time after displacement 4

Hex:	2011-20h	Effective mode:	Real time

Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.32 **Displacement 5**

Hex:	2011-21h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.34 **Max. speed of displacement 5**

Hex:	2011-23h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.35 **Acc/Dec time of displacement 5**

Hex:	2011-24h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.36 Interval time after displacement 5

Hex:	2011-25h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms(s) to 10000 ms(s)
Description
-

H11.37 Displacement 6

Hex:	2011-26h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:
-1073741824 to 1073741824
Description
-

H11.39 Max. speed of displacement 6

Hex:	2011-28h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
1rpm to 10000rpm
Description
-

H11.40 Acc/Dec time of displacement 6

Hex:	2011-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms–65535 ms

Description

-

H11.41 **Interval time after displacement 6**

Hex:	2011-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.42 **Displacement 7**

Hex:	2011-2Bh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.44 **Max. speed of displacement 7**

Hex:	2011-2Dh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.45 **Acc/Dec time of displacement 7**

Hex:	2011-2Eh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16

Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.46 Interval time after displacement 7

Hex:	2011-2Fh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.47 Displacement 8

Hex:	2011-30h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.49 Max. speed of displacement 8

Hex:	2011-32h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.50 **Acc/Dec time of displacement 8**

Hex:	2011-33h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.51 **Interval time after displacement 8**

Hex:	2011-34h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.52 **Displacement 9**

Hex:	2011-35h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.54 **Max. speed of displacement 9**

Hex:	2011-37h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description
-

H11.55 Acc/Dec time of displacement 9

Hex:	2011-38h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
-

H11.56 Interval time after displacement 9

Hex:	2011-39h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms(s) to 10000 ms(s)
Description
-

H11.57 Displacement 10

Hex:	2011-3Ah	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:
-1073741824 to 1073741824
Description
-

H11.59 Max. speed of displacement 10

Hex:	2011-3Ch	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16

Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.60 Acc/Dec time of displacement 10

Hex:	2011-3Dh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.61 Interval time after displacement 10

Hex:	2011-3Eh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.62 Displacement 11

Hex:	2011-3Fh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.64 **Max. speed of displacement 11**

Hex:	2011-41h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
1rpm to 10000rpm
Description
-

H11.65 **Acc/Dec time of displacement 11**

Hex:	2011-42h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
-

H11.66 **Interval time after displacement 11**

Hex:	2011-43h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms(s) to 10000 ms(s)
Description
-

H11.67 **Displacement 12**

Hex:	2011-44h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:
-1073741824 to 1073741824

Description

-

H11.69 **Max. speed of displacement 12**

Hex:	2011-46h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.70 **Acc/Dec time of displacement 12**

Hex:	2011-47h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.71 **Interval time after displacement 12**

Hex:	2011-48h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.72 **Displacement 13**

Hex:	2011-49h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32

Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.74 Max. speed of displacement 13

Hex:	2011-4Bh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.75 Acc/Dec time of displacement 13

Hex:	2011-4Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.76 Interval time after displacement 13

Hex:	2011-4Dh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.77 **Displacement 14**

Hex:	2011-4Eh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.79 **Max. speed of displacement 14**

Hex:	2011-50h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.80 **Acc/Dec time of displacement 14**

Hex:	2011-51h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.81 **Interval time after displacement 14**

Hex:	2011-52h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.82 **Displacement 15**

Hex:	2011-53h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.84 **Max. speed of displacement 15**

Hex:	2011-55h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.85 **Acc/Dec time of displacement 15**

Hex:	2011-56h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.86 **Interval time after displacement 15**

Hex:	2011-57h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16

Default: 10 Change: Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.87 Displacement 16

Hex: 2011-58h Effective mode: Real time

Min.: -1073741824 Unit: Reference unit

Max.: 1073741824 Data Type: Int32

Default: 10000 Change: Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.89 Max. speed of displacement 16

Hex: 2011-5Ah Effective mode: Real time

Min.: 1 Unit: RPM

Max.: 10000 Data Type: UInt16

Default: 200 Change: Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.90 Acc/Dec time of displacement 16

Hex: 2011-5Bh Effective mode: Real time

Min.: 0 Unit: ms

Max.: 65535 Data Type: UInt16

Default: 10 Change: Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.91 Interval time after displacement 16

Hex: 2011-5Ch Effective mode: Real time

Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

2.18 H12 Multi-Speed

H12.00 Multi-speed operation mode

Hex:	2012-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

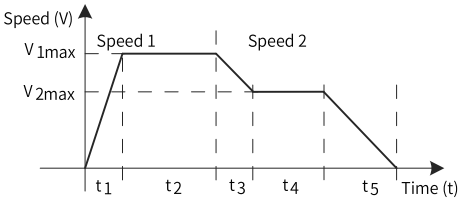
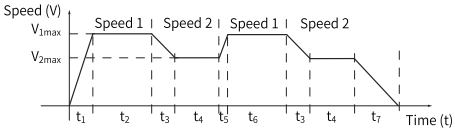
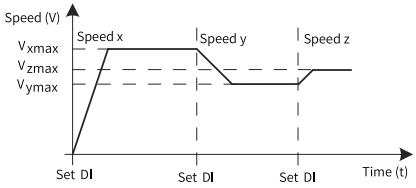
0: Individual operation (number of speeds selected in H12.01)

1: Cyclic operation (number of speeds selected in H12.01)

2: DI-based operation

Description

Defines the multi-speed operation mode when the speed reference source is multi-speed reference (H06.01 = 5, H06.02 = 1/2/3) in the speed control mode. The S-ON signal must be active during operation of each speed. Otherwise, the drive stops immediately as defined by H02.05 (Stop mode at S-ON OFF). The speed reach signal (FunOUT.19: V-Arr) is activated each time when a speed reference value is reached.

Value	Operation Mode	Remarks	Operation Curve
0	Individual operation	The drive stops after one cycle of operation. The drive switches to the next displacement automatically.	 V 1max , V 2max : reference values of speed 1 and speed 2 t 1 : actual acceleration/deceleration time of speed 1 t 3 , t 5 : acceleration/deceleration time of speed 2
1	Cyclic operation	The drive starts from speed 1 after each cycle of operation. The drive automatically switches to the next speed. The cyclic operation state remains active as long as the S-ON signal is active.	 V 1max , V 2max : maximum operating speeds in displacement 1 and displacement 2
2	External DI signal	The drive operates continuously as long as the S-ON signal is active. The speed No. is determined by the DI logic. The operating time of each speed is determined only by the interval time of speed switchover. The speed reference direction can be switched through FunIN.5 (DIR-SEL).	 x, y: speed No. (The relationship between the speed No. and the DI logic is described below.) V x , V y: speed references for speeds x and y The speed No. determined by DI does not change, which means the speed reference operates continuously regardless of the reference operating time.

H12.01 Number of speed references in multi-speed mode

Hex:	2012-02h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:

1–16

Description

Defines the total number of speed references in the multi-speed mode. Different speed references, operating time, and acceleration/deceleration time (four groups optional) can be set for each speed.

H12.00 ≠ 2: Speeds are switched automatically in a sequence from 1, 2... H12.01.

H12.00 is 2: Assign four DIs (Hardware DI or VDI) with DI functions 6 to 9 (FunIN.6: CMD1 to FunIN.9: CMD4) and control the DI logic through the host controller to switch between different speeds. The segment No. is a 4-bit binary value. Bits 0 to 3 correspond to CMD1 to CMD4.

FunIN.9	FunIN.8	FunIN.7	FunIN.6	Segment No.
CMD4	CMD3	CMD2	CMD1	
0	0	0	0	1
0	0	0	1	2
...				
1	1	1	1	16

The value of CMD(n) is 1 upon active DI logic and 0 upon inactive DI logic.

H12.02 Operating time unit

Hex:	2012-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: s

1: min

Description

Defines the time unit of multi-speed operation.

0: s

1: min

H12.03 Acceleration time 1

Hex:	2012-04h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.04 Deceleration time 1

Hex:	2012-05h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.05 Acceleration time 2

Hex:	2012-06h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.06 Deceleration time 2

Hex:	2012-07h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.07 Acceleration time 3

Hex:	2012-08h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.08 Deceleration time 3

Hex:	2012-09h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.09 Acceleration time 4

Hex:	2012-0Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.10 Deceleration time 4

Hex:	2012-0Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.20 1st speed reference

Hex:	2012-15h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.21 Operating time of speed 1

Hex:	2012-16h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

Defines the operating time of speed 1.

The operating time is the sum of the speed variation time from previous speed reference to present speed reference plus the average operating time of present speed reference.
If the operating time is set to 0, the drive skips this speed reference automatically.
As long as H12.00 (Multi-speed operation mode) is set to 2 (DI-based operation) and the speed No. determined by the external DI does not change, the drive continues operating at the speed defined by this speed reference, without being affected by the reference operating time.

H12.22 1st speed rise/drop and curve smoothing parameter time

Hex:	2012-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

bit0-bit7: Speed rise and drop time
0: Zero acc and dec time
1: Acc and dec time 1
2: Acc and dec time 2
3: Acc and dec time 3
4: Acc and dec time 4
bit8-bit15: S curve smoothing parameter
1: Smoothing parameter 1
2: Smoothing parameter 2
3: Smoothing parameter 3
4: Smoothing parameter 4
5: Smoothing parameter 5
6: Smoothing parameter 6
7: Smoothing parameter 7
8: Smoothing parameter 8

Description

1. Acceleration/deceleration time
Selects the acceleration/deceleration time of speed 1:
0: Zero acc./dec. time Acceleration time: 0
Deceleration time: 0
1: Acc./dec. Time 1 Acceleration time: H12.03
Deceleration time: H12.04
2: Acc./dec. Time 2 Acceleration time: H12.05
Deceleration time: H12.06

3: Acc./dec. Time 3 Acceleration time: H12.07
Deceleration time: H12.08
4: Acc./dec. Time 4 Acceleration time: H12.09
Deceleration time: H12.10
2. S-curve smoothing parameter
1: Smoothing parameter 1 increasing acceleration time of acceleration segment: H06.51
Decreasing acceleration time of acceleration segment: H06.52
Decreasing deceleration time of deceleration segment: H06.53
Decreasing acceleration time of acceleration segment: H06.54
2. Smoothing parameter 2 increasing acceleration time of acceleration segment: H06.55
Decreasing acceleration time of acceleration segment: H06.56
Decreasing deceleration time of deceleration segment: H06.57
Decreasing acceleration time of acceleration segment: H06.58
3. Smoothing parameter 3 increasing acceleration time of acceleration segment: H06.59
Decreasing acceleration time of acceleration segment: H06.60
Decreasing deceleration time of deceleration segment: H06.61
Decreasing acceleration time of acceleration segment: H06.62
4. Smoothing parameter 4 increasing acceleration time of acceleration segment: H06.63
Decreasing acceleration time of acceleration segment: H06.64
Decreasing deceleration time of deceleration segment: H06.65
Decreasing acceleration time of acceleration segment: H06.66
5. Smoothing parameter 5 increasing acceleration time of acceleration segment: H06.67
Decreasing acceleration time of acceleration segment: H06.68
Decreasing deceleration time of deceleration segment: H06.69
Decreasing acceleration time of acceleration segment: H06.70
6. Smoothing parameter 6 increasing acceleration time of acceleration segment: H06.71
Decreasing acceleration time of acceleration segment: H06.72
Decreasing deceleration time of deceleration segment: H06.73
Decreasing acceleration time of acceleration segment: H06.74
7. Smoothing parameter 7 increasing acceleration time of acceleration segment: H06.75
Decreasing acceleration time of acceleration segment: H06.76
Decreasing deceleration time of deceleration segment: H06.77
Decreasing acceleration time of acceleration segment: H06.78

8. Smoothing parameter 8 increasing acceleration time of acceleration segment: H06.79
Decreasing acceleration time of acceleration segment: H06.80
Decreasing deceleration time of deceleration segment: H06.81
Decreasing acceleration time of acceleration segment: H06.82

H12.23 Reference 2

Hex:	2012-18h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	100	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm
Description
-

H12.24 Operating time of speed 2

Hex:	2012-19h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.25 2nd speed rise/drop time and curve smoothing parameter time

Hex:	2012-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.26 **Reference 3**

Hex:	2012-1Bh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	300	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.27 **Operating time of speed 3**

Hex:	2012-1Ch	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.28 **3nd speed rise/drop time and curve smoothing parameter time**

Hex:	2012-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.29 **Reference 4**

Hex:	2012-1Eh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	500	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.30 Operating time of speed 4

Hex:	2012-1Fh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.31 4th speed rise/drop time and curve smoothing parameter time

Hex:	2012-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.32 Reference 5

Hex:	2012-21h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	700	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.33 Operating time of speed 5

Hex:	2012-22h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16

Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.34 5th speed rise/drop time and curve smoothing parameter time

Hex:	2012-23h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.35 Reference 6

Hex:	2012-24h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	900	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.36 Operating time of speed 6

Hex:	2012-25h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.37 **6th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.38 **Reference 7**

Hex:	2012-27h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	600	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm
Description
-

H12.39 **Operating time of speed 7**

Hex:	2012-28h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.40 **7th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.

Description
Same as H12.22.

H12.41 Reference 8

Hex:	2012-2Ah	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	300	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm
Description
-

H12.42 Operating time of speed 8

Hex:	2012-2Bh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.43 8th speed rise/drop time and curve smoothing parameter time

Hex:	2012-2Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.44 Reference 9

Hex:	2012-2Dh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16

Default: 100 Change: Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.45 Operating time of speed 9

Hex:	2012-2Eh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.46 9th speed rise/drop time and curve smoothing parameter time

Hex:	2012-2Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.47 Reference 10

Hex:	2012-30h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-100	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.48 **Operating time of speed 10**

Hex:	2012-31h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.49 **10th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-32h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.50 **Reference 11**

Hex:	2012-33h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-300	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.51 **Operating time of speed 11**

Hex:	2012-34h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.52 11th speed rise/drop time and curve smoothing parameter time

Hex:	2012-35h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.53 Reference 12

Hex:	2012-36h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-500	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.54 Operating time of speed 12

Hex:	2012-37h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.55 12th speed rise/drop time and curve smoothing parameter time

Hex:	2012-38h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 256 Change: Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.56 Reference 13

Hex: 2012-39h Effective mode: Real time

Min.: -10000 Unit: RPM

Max.: 10000 Data Type: Int16

Default: -700 Change: Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.57 Operating time of speed 13

Hex: 2012-3Ah Effective mode: Real time

Min.: 0.0 Unit: s (m)

Max.: 6553.5 Data Type: UInt16

Default: 5.0 Change: Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.58 13th speed rise/drop time and curve smoothing parameter time

Hex: 2012-3Bh Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 256 Change: Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.59 Reference 14

Hex: 2012-3Ch Effective mode: Real time

Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-900	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm
Description
-

H12.60 Operating time of speed 14

Hex:	2012-3Dh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.61 14th speed rise/drop time and curve smoothing parameter time

Hex:	2012-3Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.62 Reference 15

Hex:	2012-3Fh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-600	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm
Description
-

H12.63 **Operating time of speed 15**

Hex:	2012-40h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.64 **15th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.65 **Reference 16**

Hex:	2012-42h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-300	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.66 **Operating time of speed 16**

Hex:	2012-43h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.67 **16th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-44h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

2.19 H17 Virtual DI/DO

H17.90 **Communication VDI enable**

Hex:	2017-5Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

To use the VDI function:

1. Set H17.90 to enable VDI.
2. Set the default level after power-on through H17.91.
3. Set the DI function of the VDI terminal through parameters in group H17.
4. Set VDI output through H31.00.

H17.91 **VDI default value after power-on**

Hex:	2017-5Ch	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit0: VDI1
bit1: VDI2
bit2: VDI3
bit3: VDI4
bit4: VDI5
bit5: VDI6
bit6: VDI7
bit7: VDI8
bit8: VDI9
bit9: VDI10
bit10: VDI11
bit11: VDI12
bit12: VDI13
bit13: VDI14
bit14: VDI15
bit15: VDI16

Description

Configures the initial value of VDI upon power-on.
Bit 0 corresponds to VDI1.
Bit 1 corresponds to VDI2.
…
Bit 15 corresponds to VDI16.

H17.00 VDI1 function

Hex:	2017-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: No assignment
1: S-ON
2: Warning reset signal
3: Gain switchover switch
4: Switchover between main and auxiliary commands
5: Multi-reference direction
6: Multi-reference switchover CMD1
7: Multi-reference switchover CMD2
8: Multi-reference switchover CMD3
9: Multi-reference switchover CMD4
10: Mode switchover M1-SEL
11: Mode switchover M2-SEL
12: Zero clamp enable signal
13: Position reference inhibited
14: Positive limit switch
15: Negative limit switch
16: Forward external torque limit
17: Reverse external torque limit
18: Forward jog
19: Reverse jog
20: Step enable
21: Hand wheel override signal 1
22: Hand wheel override signal 2
23: Hand wheel enable
24: Electronic gear ratio selection
25: Torque reference direction
26: Speed reference direction
27: Position reference direction
28: Multi-position reference enable
29: Interrupt positioning cancel
31: Home switch
32: Homing enable
33: Interrupt positioning inhibited
34: Emergency stop
35: Clear position deviation
36: Internal speed limit source
37: Pulse reference inhibited
40: Multi-speed enable

41: Current position as home
42: Axis control command executed immediately
43: Axis control command not executed immediately
44: Positioning and command completed signal clear
46: Process segment enable
47: Process segment command switchover 1
48: Process segment command switchover 2
49: Process segment command switchover 3
50: Process segment command switchover 4
51: Event trigger process segment 1
52: Event trigger process segment 2
53: Event trigger process segment 3
54: Event trigger process segment 4
55: Process segment pause

Description

-

H17.01 VDI1 logic level selection

Hex:	2017-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1
1: Active when the written value changes from 0 to 1

Description

-

H17.02 VDI2 function

Hex:	2017-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.03 VDI2 logic level selection

Hex:	2017-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.04 VDI3 function

Hex:	2017-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.05 VDI3 logic level selection

Hex:	2017-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.06 VDI4 function

Hex:	2017-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.07 VDI4 logic level selection

Hex:	2017-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.08 VDI5 function

Hex:	2017-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.09 VDI5 logic level selection

Hex:	2017-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.10 VDI6 function

Hex:	2017-0Bh	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.11 VDI6 logic level selection

Hex:	2017-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.12 VDI7 function

Hex:	2017-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.13 VDI7 logic level selection

Hex:	2017-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.14 **VDI8 function**

Hex:	2017-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.15 **VDI8 logic level selection**

Hex:	2017-10h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.16 **VDI9 function**

Hex:	2017-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.17 **VDI9 logic level selection**

Hex:	2017-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1
1: Active when the written value changes from 0 to 1
Description
-

H17.18 VDI10 function

Hex:	2017-13h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.00.
Description
-

H17.19 VDI10 logic level selection

Hex:	2017-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Active when the written value is 1
1: Active when the written value changes from 0 to 1
Description
-

H17.20 VDI11 function

Hex:	2017-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.00.
Description
-

H17.21 VDI11 logic level selection

Hex:	2017-16h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.22 VDI12 function

Hex:	2017-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.23 VDI12 logic level selection

Hex:	2017-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.24 VDI13 function

Hex:	2017-19h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.25 VDI13 logic level selection

Hex:	2017-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.26 VDI14 function

Hex:	2017-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.27 VDI14 logic level selection

Hex:	2017-1Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.28 VDI15 function

Hex:	2017-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.29 VDI15 logic level selection

Hex:	2017-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.30 VDI16 function

Hex:	2017-1Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	55	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.31 VDI16 logic level selection

Hex:	2017-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.92 Communication VDO enable

Hex:	2017-5Dh	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

To use the VDO function:

1. Set H17.92 to enable VDO.
2. Set the default level after power-on through H17.93.
3. Set the DO function of the VDO terminal through parameters in group H17.
4: Read the output level of the VDO in H17.32.

H17.93 VDO default value after power-on

Hex:	2017-5Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

bit0: VDO1

bit1: VDO2

bit2: VDO3

bit3: VDO4

bit4: VDO5

bit5: VDO6

bit6: VDO7

bit7: VDO8

bit8: VDO9

bit9: VDO10

bit10: VDO11

bit11: VDO12

bit12: VDO13

bit13: VDO14

bit14: VDO15

bit15: VDO16

Description

Configures the initial value of VDO upon power-on.

Bit 0 corresponds to VDO1.

Bit 1 corresponds to VDO2.

…

Bit 15 corresponds to VDO16.

H17.32 **VDO virtual level**

Hex:	2017-21h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H17.33 **VDO1 function**

Hex:	2017-22h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: N/A
1: Servo ready
2: Motor rotating signal
3: Zero speed signal
4: Speed consistent signal
5: Positioning completed
6: Positioning approaches
7: Torque limited signal
8: Speed limited signal
9: Braking
10: Alarm
11: Fault
15: Interrupt positioning completed
16: Homing completed
17: Electrical homing completed
18: Torque attained signal
19: Speed attained signal
21: Enable completed
22: Internal command completed
23: Allow to write the next command
24: Internal motion completed
26: Closed-loop state30: Alarm or fault output
32: EDM output

Description

-

H17.34 **VDO1 logic level selection**

Hex:	2017-23h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.35 **VDO2 function**

Hex:	2017-24h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.36 **VDO2 logic level selection**

Hex:	2017-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.37 **VDO3 function**

Hex:	2017-26h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.38 VDO3 logic level selection

Hex:	2017-27h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.39 VDO4 function

Hex:	2017-28h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.40 VDO4 logic level selection

Hex:	2017-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.41 **VDO5 function**

Hex:	2017-2Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.42 **VDO5 logic level selection**

Hex:	2017-2Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.43 **VDO6 function**

Hex:	2017-2Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.44 **VDO6 logic level selection**

Hex:	2017-2Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.45 VDO7 function

Hex:	2017-2Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.33.
Description
-

H17.46 VDO7 logic level selection

Hex:	2017-2Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.47 VDO8 function

Hex:	2017-30h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.33.
Description
-

H17.48 VDO8 logic level selection

Hex:	2017-31h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.49 VDO9 function

Hex:	2017-32h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.50 VDO9 logic level selection

Hex:	2017-33h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.51 VDO10 function

Hex:	2017-34h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.52 VDO10 logic level selection

Hex:	2017-35h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.53 VDO11 function

Hex:	2017-36h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.54 VDO11 logic level selection

Hex:	2017-37h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.55 VDO12 function

Hex:	2017-38h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.56 VDO12 logic level selection

Hex:	2017-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.57 VDO13 function

Hex:	2017-3Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.58 VDO13 logic level selection

Hex:	2017-3Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.59 VDO14 function

Hex:	2017-3Ch	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.60 VDO14 logic level selection

Hex:	2017-3Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.61 VDO15 function

Hex:	2017-3Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.62 VDO15 logic level selection

Hex:	2017-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.63 **VDO16 function**

Hex:	2017-40h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.64 **VDO16 logic level selection**

Hex:	2017-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

2.20 H18 Position Comparison Output

H18.00 **Position comparison output selection**

Hex:	2018-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disable

1: Enable (rising edge-triggered)

Description

-

H18.01 **Position comparison output feedback source**

Hex:	2018-02h	Effective mode:	Upon the next power-on

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Motor encoder feedback

1: Fully closed-loop position feedback

Description

-

H18.02 Position comparison resolution

Hex:	2018-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: 24-bit

1: 23-bit

2: 22-bit

3: 21-bit

4: 20-bit

5: 19-bit

6: 18-bit

7: 17-bit

Description

-

H18.03 Position comparison mode

Hex:	2018-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Individual comparison mode

1: Cyclic comparison mode

2: Fixed cyclic comparison mode

Description

-

H18.04 **Current position as zero**

Hex:	2018-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disable

1: Enable (rising edge-triggered)

Description

-

H18.05 **Position comparison output width**

Hex:	2018-06h	Effective mode:	Real time
Min.:	0.1	Unit:	ms
Max.:	204.7	Data Type:	UInt16
Default:	0.1	Change:	Real-time

Value Range:

0.1 ms–204.7 ms

Description

Defines the active pulse width of the DO when the comparison point is reached. The value range is 0 to 204.7 (in ms).

H18.06 **Position comparison output ABZ port polarity**

Hex:	2018-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	OCZ output logic	0: Positive, output high level upon active logic
		1: Negative, output low level upon active logic
1	Z output logic	0: Positive, output high level upon active logic
		1: Negative, output low level upon active logic
2	A/B output logic	0: Positive, output high level upon active logic
		1: Negative, output low level upon active logic

Description

0: Positive (output high level upon active logic) 1: Negative (output high level upon active logic)
bit0: OCZ output logic
Bit1: Z output logic
Bit2: A/B output logic

H18.07 Position comparison start point

Hex:	2018-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–40

Description

-

H18.08 Position comparison end point

Hex:	2018-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–40

Description

-

H18.09 Current state of position comparison

Hex:	2018-0Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	1024	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–1024

Description

-

H18.10 Real-time position of position comparison

Hex:	2018-0Bh	Effective mode:	-
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648–2147483647
Description
-

H18.12 Zero offset of position comparison

Hex:	2018-0Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H18.14 Position comparison output delay compensation

Hex:	2018-0Fh	Effective mode:	Upon the next power-on
Min.:	-12.00	Unit:	us
Max.:	12.00	Data Type:	Int16
Default:	0.00	Change:	Real-time

Value Range:
-12.00us to 12.00us
Description
Compensates the delay caused by hardware signal output.

H18.15 Fixed cyclic comparison

Hex:	2018-10h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:
1–65535

Description

-

H18.16 **ABZ output function setting**

Hex:	2018-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	OCZ output function	0: Frequency-division output
		1: Position comparison
1	Z port output function	0: Frequency-division output
		1: Position comparison
2	A/B port output function	0: Frequency-division output
		1: Position comparison

Description

0: Frequency-division output 1: Position comparison

bit0: OCZ port function setting

Bit 1: Z port function setting

Bit 2: A/B function setting

H18.17 **Number of fixed mode cycles**

Hex:	2018-12h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

2.21 H19 Target Position Parameters

H19.00 Target value of position comparison 1

Hex:	2019-01h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.02 Attribute value of position comparison 1

Hex:	2019-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Description
0	Output DO active signal if current position changes from "less than" to "more than" the comparison point
1	Output DO active signal if current position changes from "more than" to "less than" the comparison point
2–6	Reserved
7	DO1 output
8	DO2 output
9	DO3 output
10	DO4 output
11	DO5 output
12	Frequency-division A output
13	Frequency-division B output
14	Frequency-division Z output
15	Frequency-division OCZ output

Description

-

H19.03 **Target value of position comparison 2**

Hex:	2019-04h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.05 **Attribute value of position comparison 2**

Hex:	2019-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.06 **Target value of position comparison 3**

Hex:	2019-07h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.08 **Attribute value of position comparison 3**

Hex:	2019-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.

Description

-

H19.09 **Target value of position comparison 4**

Hex:	2019-0Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.11 **Attribute value of position comparison 4**

Hex:	2019-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.12 **Target value of position comparison 5**

Hex:	2019-0Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.14 **Attribute value of position comparison 5**

Hex:	2019-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.15 Target value of position comparison 6

Hex:	2019-10h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.17 Attribute value of position comparison 6

Hex:	2019-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.18 Target value of position comparison 7

Hex:	2019-13h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.20 Attribute value of position comparison 7

Hex:	2019-15h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.21 Target value of position comparison 8

Hex:	2019-16h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.23 Attribute value of position comparison 8

Hex:	2019-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.24 Target value of position comparison 9

Hex:	2019-19h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.26 **Attribute value of position comparison 9**

Hex:	2019-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.27 **Target value of position comparison 10**

Hex:	2019-1Ch	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.29 **Attribute value of position comparison 10**

Hex:	2019-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.30 **Target value of position comparison 11**

Hex:	2019-1Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.32 Attribute value of position comparison 11

Hex:	2019-21h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.33 Target value of position comparison 12

Hex:	2019-22h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.35 Attribute value of position comparison 12

Hex:	2019-24h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.36 Target value of position comparison 13

Hex:	2019-25h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.38 Attribute value of position comparison 13

Hex:	2019-27h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.39 Target value of position comparison 14

Hex:	2019-28h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.41 Attribute value of position comparison 14

Hex:	2019-2Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.42 Target value of position comparison 15

Hex:	2019-2Bh	Effective mode:	Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.44 Attribute value of position comparison 15

Hex:	2019-2Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.45 Target value of position comparison 16

Hex:	2019-2Eh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.47 Attribute value of position comparison 16

Hex:	2019-30h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.48 Target value of position comparison 17

Hex:	2019-31h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.50 Attribute value of position comparison 17

Hex:	2019-33h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.51 Target value of position comparison 18

Hex:	2019-34h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.53 Attribute value of position comparison 18

Hex:	2019-36h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.

Description

-

H19.54 **Target value of position comparison 19**

Hex:	2019-37h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.56 **Attribute value of position comparison 19**

Hex:	2019-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.57 **Target value of position comparison 20**

Hex:	2019-3Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.59 **Attribute value of position comparison 20**

Hex:	2019-3Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.60 Target value of position comparison 21

Hex:	2019-3Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.62 Attribute value of position comparison 21

Hex:	2019-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.63 Target value of position comparison 22

Hex:	2019-40h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.65 Attribute value of position comparison 22

Hex:	2019-42h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.66 Target value of position comparison 23

Hex:	2019-43h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.68 Attribute value of position comparison 23

Hex:	2019-45h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.69 Target value of position comparison 24

Hex:	2019-46h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.71 **Attribute value of position comparison 24**

Hex:	2019-48h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.72 **Target value of position comparison 25**

Hex:	2019-49h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.74 **Attribute value of position comparison 25**

Hex:	2019-4Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.75 **Target value of position comparison 26**

Hex:	2019-4Ch	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647

Description

-

H19.77 **Attribute value of position comparison 26**

Hex:	2019-4Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.78 **Target value of position comparison 27**

Hex:	2019-4Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.80 **Attribute value of position comparison 27**

Hex:	2019-51h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.81 **Target value of position comparison 28**

Hex:	2019-52h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.83 Attribute value of position comparison 28

Hex:	2019-54h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.84 Target value of position comparison 29

Hex:	2019-55h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.86 Attribute value of position comparison 29

Hex:	2019-57h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.87 Target value of position comparison 30

Hex:	2019-58h	Effective mode:	Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.89 Attribute value of position comparison 30

Hex:	2019-5Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.90 Target value of position comparison 31

Hex:	2019-5Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.92 Attribute value of position comparison 31

Hex:	2019-5Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.93 **Target value of position comparison 32**

Hex:	2019-5Eh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.95 **Attribute value of position comparison 32**

Hex:	2019-60h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.96 **Target value of position comparison 33**

Hex:	2019-61h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.98 **Attribute value of position comparison 33**

Hex:	2019-63h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.

Description

-

H19.99 Target value of position comparison 34

Hex:	2019-64h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.101 Attribute value of position comparison 34

Hex:	2019-66h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

-

H19.102 Target value of position comparison 35

Hex:	2019-67h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.104 Attribute value of position comparison 35

Hex:	2019-69h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.105 Target value of position comparison 36

Hex:	2019-6Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.107 Attribute value of position comparison 36

Hex:	2019-6Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.108 Target value of position comparison 37

Hex:	2019-6Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.110 Attribute value of position comparison 37

Hex:	2019-6Fh	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.111 Target value of position comparison 38

Hex:	2019-70h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.113 Attribute value of position comparison 38

Hex:	2019-72h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.114 Target value of position comparison 39

Hex:	2019-73h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.116 Attribute value of position comparison 39

Hex:	2019-75h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

H19.117 Target value of position comparison 40

Hex:	2019-76h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.119 Attribute value of position comparison 40

Hex:	2019-78h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
-

2.22 H1F Software Parameters

H1F.90 DI function state 1 read through communication

Hex:	201F-5Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DI function 1.
Bit 1 corresponds to DI function 2.
Bit 2 corresponds to DI function 3.
…
By analogy

H1F.91 DI function state 2 read through communication

Hex:	201F-5Ch	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DI function 17.
Bit 1 corresponds to DI function 18.
Bit 2 corresponds to DI function 19.
…
By analogy

H1F.92 DI function state 3 read through communication

Hex:	201F-5Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DI function 33.
Bit 1 corresponds to DI function 34.
Bit 2 corresponds to DI function 35.
…
By analogy

H1F.93 DI function state 4 read through communication

Hex:	201F-5Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Bit 0 corresponds to DI function 49.

Bit 1 corresponds to DI function 50.

Bit 2 corresponds to DI function 51.

…

By analogy

H1F.94 DO function state 1 read through communication

Hex:	201F-5Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Bit 0 corresponds to DO function 1.

Bit 1 corresponds to DO function 2.

Bit 2 corresponds to DO function 3.

…

By analogy

H1F.95 DO function state 2 read through communication

Hex:	201F-60h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Bit 0 corresponds to DO function 17.

Bit 1 corresponds to DO function 18.

Bit 2 corresponds to DO function 19.

…
By analogy

H1F.96 DO function state 3 read through communication

Hex:	201F-61h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DO function 33.
Bit 1 corresponds to DO function 34.
Bit 2 corresponds to DO function 35.
…
By analogy

H1F.97 DO function state 4 read through communication

Hex:	201F-62h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DO function 49.
Bit 1 corresponds to DO function 50.
Bit 2 corresponds to DO function 51.
…
By analogy

2.23 H21 Current Loop Gain Switchover Parameters

H21.00 Current loop gain switchover

Hex:	2021-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16

Default: 0 Change: Real-time

Value Range:

0: No operation

1: Enabled

Description

Used to enable or disable the current loop gain switchover function.

0: No operation, turned off

1: Enabled, turned on

2.24 H22 Technology Segment Parameters

H22.00 Process segment command trigger

Hex:	2022-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–1000

Description

Used to trigger the process segment and read the state. The process segment can be triggered through the keypad or communication. The process segment state can be read through H22.00.

When triggering the technology segment:

The homing function is triggered when 0 is written to H22.00.

Process segments 1 to 15 are triggered when 1 to 15 are written to H22.00.

The process segment pauses when 1000 is written to H22.00.

E126.0 (Process segment number error) will be reported when 16 to 999 are written to H22.00.

When reading the state of the technology segment:

The process segment number will be read back when commands in the positioning mode are not done executing.

The process segment number + 10000 will be read back when commands in the positioning mode are done executing.

The process segment number + 20000 will be read back when commands in the positioning mode are done executing and positioning has been completed.

H22.01 Process segment triggered by the event rising edge

Hex:	2022-02h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

DI: ProceEvTri (OFF to ON, rising edge-triggered).

bit	Value	Description
3–0	0	Trigger DI: The motor does not act upon rising edge of ProceEvTri1.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon rising edge of ProceEvTri1.
7–4	0	Trigger DI: The motor does not act upon rising edge of ProceEvTri2.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon rising edge of ProceEvTri2.
8–11	0	Trigger DI: The motor does not act upon rising edge of ProceEvTri3.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon rising edge of ProceEvTri3.
15–12	0	Trigger DI: The motor does not act upon rising edge of ProceEvTri4.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon rising edge of ProceEvTri4.

H22.02 Process segment triggered by the event falling edge

Hex:	2022-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

DI: ProceEvTri (ON to OFF, falling edge-triggered).

bit	Value	Description
3–0	0	Trigger DI: The motor does not act upon falling edge of ProceEvTri1.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon falling edge of ProceEvTri1.
7–4	0	Trigger DI: The motor does not act upon falling edge of ProceEvTri2.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon falling edge of ProceEvTri2.
8–11	0	Trigger DI: The motor does not act upon falling edge of ProceEvTri3.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon falling edge of ProceEvTri3.
15–12	0	Trigger DI: The motor does not act upon falling edge of ProceEvTri4.
	1–15	Trigger DI: Process segments 1 to 15 are executed upon falling edge of ProceEvTri4.

H22.03 Acceleration/Deceleration time upon technology segment pause

Hex:	2022-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Acceleration/Deceleration time
1: Acceleration/Deceleration time 1
2: Acceleration/Deceleration time 2
3: Acceleration/Deceleration time 3
4: Acceleration/Deceleration time 4
5: Acceleration/Deceleration time 5
6: Acceleration/Deceleration time 6
7: Acceleration/Deceleration time 7

Description

When the process segment is paused, the motor ramps to stop based on the deceleration time defined by H22.03. Setpoints 0 to 7 correspond to parameters H22.35 to H22.42.

H22.04 Positive software position limit

Hex:	2022-05h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	2147483647	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

E956.0 can occur when the motor operates forwardly with position reference exceeding the setpoint of H22.04 during positioning in the process segment mode.

H22.06 Negative software position limit

Hex:	2022-07h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	-2147483648	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

E958.0 can occur when the motor operates reversely with position reference exceeding the setpoint of H22.06 during positioning in the process segment mode.

H22.08 Process segment number

Hex:	2022-09h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Indicates the process segment number in progress in the process segment mode.

H22.09 Process segment function switch

Hex:	2022-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

bit0:

0: Keep interrupt positioning state

1: Exit interrupt positioning state when triggering technology segment

H22.19 Target speed

Hex:	2022-14h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	50.0	Change:	Real-time

Value Range:

0.1rpm to 6000.0rpm

Description

Eight groups of target speed are available for each process segment command. Target speed refers to the constant operating speed when the motor is not in the acceleration/deceleration process. If the displacement is too small in the positioning mode, the actual motor speed will be lower than the setpoint of H22.19.

H22.20 Target speed 1

Hex:	2022-15h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	200.0	Change:	Real-time

Value Range:

0.1rpm to 6000.0rpm

Description

See H22.19.

H22.21 Target speed 2

Hex:	2022-16h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	500.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.22 Target speed 3

Hex:	2022-17h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	1000.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.23 Target speed 4

Hex:	2022-18h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	1500.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.24 Target speed 5

Hex:	2022-19h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	2000.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.25 Target speed 6

Hex:	2022-1Ah	Effective mode:	Real time

Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	2500.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.26 Target speed 7

Hex:	2022-1Bh	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	3000.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.35 Accel/Decel time

Hex:	2022-24h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Eight groups of acceleration/deceleration time are available for each process segment command.
Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H22.36 Acceleration/Deceleration time 1

Hex:	2022-25h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
0 ms–65535 ms

Description
See H22.35.

H22.37 Acceleration/Deceleration time 2

Hex:	2022-26h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.35.

H22.38 Acceleration/Deceleration time 3

Hex:	2022-27h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.35.

H22.39 Acceleration/Deceleration time 4

Hex:	2022-28h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.35.

H22.40 Acceleration/Deceleration time 5

Hex:	2022-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16

Default:	2000	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

See H22.35.

H22.41 Acceleration/Deceleration time 6

Hex:	2022-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	2500	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

See H22.35.

H22.42 Acceleration/Deceleration time 7

Hex:	2022-2Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

See H22.35.

H22.51 Delay after completion of the process segment

Hex:	2022-34h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Eight groups of delay time are available for each process segment command. The delay time refers to the delay that starts from the end of current command to the operation of the next command in the process segment. For details, see the Function Guide.

H22.52 Delay time 1 after completion of the process segment

Hex:	2022-35h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.53 Delay time 2 after completion of the process segment

Hex:	2022-36h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.54 Delay time 3 after completion of the process segment

Hex:	2022-37h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.55 Delay time 4 after completion of the process segment

Hex:	2022-38h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:
0 ms–65535 ms

Description
See H22.51.

H22.56 Delay time 5 after completion of the process segment

Hex:	2022-39h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.57 Delay time 6 after completion of the process segment

Hex:	2022-3Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	2000	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.58 Delay time 7 after completion of the process segment

Hex:	2022-3Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.70 Homing mode

Hex:	2022-47h	Effective mode:	Real time
Min.:	-32768	Unit:	-
Max.:	32767	Data Type:	Int16

Default:	-2	Change:	Real-time

Value Range:

-32768–32767

Description

Defines the default motor direction of rotation, deceleration point, and home during homing.

When H22.70 is set to a value from –2 to +35, 402 homing is used (6098h set to a value from –2 to +35). See section "Homing Function" in the Function Guide for details.

When H22.70 is set to a value lower than or equal to –200, local homing is used (H22.70 set to (–200 + H05.31)). See section "Homing Function" in the Function Guide for details.

H22.71 Speed of high-speed search for home switch signal

Hex:	2022-48h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	3000	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0rpm to 3000rpm

Description

Defines the motor speed for searching for the deceleration point signal during homing.

H22.72 Speed of low-speed search for home switch signal

Hex:	2022-49h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 rpm to 1000 rpm

Description

Defines the motor speed for searching for the home signal during homing.

H22.73 Acceleration/Deceleration time during homing

Hex:	2022-4Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	1000	Data Type:	UInt16

Default:	1000	Change:	Real-time

Value Range:

0 ms–1000 ms

Description

Defines the time for the motor to accelerate from 0 rpm to 1000 rpm at a constant speed during homing.

H22.74 Home search time limit

Hex:	2022-4Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the maximum homing time.

H22.75 Mechanical home offset

Hex:	2022-4Ch	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the absolute position of the motor after homing.

H22.79 Relative/Absolute homing

Hex:	2022-50h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

Defines the offset relationship between the mechanical home and mechanical zero point, and the action upon overtravel during homing.

When H22.79 is set to 0, the value of H05.40 is 2.
When H22.79 is set to 1, the value of H05.40 is 3.

2.25 H23 Technology Segment

H23.00 **Definition of homing**

Hex:	2023-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
For details, see the Function Guide.

H23.02 **Homing data**

Hex:	2023-03h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
Not used.

H23.04 **Definition of process segment 1**

Hex:	2023-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description

bit0 to bit3: Mode (process segment operation mode option)
Mode = 1: The fixed speed mode applies.Mode = 2: The positioning mode applies, which stops after positioning is done. Mode = 3: The next segment is executed automatically after positioning is done. Mode = 7: The jump mode applies, which is used to jump to the designated process segment. Mode = 8: The parameter-write mode applies, which allows you to write specific parameters.
For details on each mode, see the Function Guide.

H23.06 **Data of process segment 1**

Hex:	2023-07h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
Different modes selected in process segment 1 correspond to different process segment data. For details on each mode, see the Function Guide.

H23.08 **Definition of process segment 2**

Hex:	2023-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.10 **Data of process segment 2**

Hex:	2023-0Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647

Description
See that of technology segment 1.

H23.12 **Definition of process segment 3**

Hex:	2023-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.14 **Data of process segment 3**

Hex:	2023-0Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.16 **Definition of process segment 4**

Hex:	2023-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.18 **Data of process segment 4**

Hex:	2023-13h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.20 Definition of process segment 5

Hex:	2023-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.22 Data of process segment 5

Hex:	2023-17h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.24 Definition of process segment 6

Hex:	2023-19h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.26 **Data of process segment 6**

Hex:	2023-1Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.28 **Definition of process segment 7**

Hex:	2023-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.30 **Data of process segment 7**

Hex:	2023-1Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.32 **Definition of process segment 8**

Hex:	2023-21h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295

Description
See definition of technology segment 1.

H23.34 **Data of process segment 8**

Hex:	2023-23h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.36 **Definition of process segment 9**

Hex:	2023-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.38 **Data of process segment 9**

Hex:	2023-27h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.40 **Definition of process segment 10**

Hex:	2023-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32

Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.42 Data of process segment 10

Hex:	2023-2Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.44 Definition of process segment 11

Hex:	2023-2Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.46 Data of process segment 11

Hex:	2023-2Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.48 **Definition of process segment 12**

Hex:	2023-31h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.50 **Data of process segment 12**

Hex:	2023-33h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.52 **Definition of process segment 13**

Hex:	2023-35h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.54 **Data of process segment 13**

Hex:	2023-37h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647

Description
See that of technology segment 1.

H23.56 **Definition of process segment 14**

Hex:	2023-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.58 **Data of process segment 14**

Hex:	2023-3Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.60 **Definition of process segment 15**

Hex:	2023-3Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.62 **Data of process segment 15**

Hex:	2023-3Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

2.26 H30 Related Variables Read through Communication

H30.00 **Servo state read by communication**

Hex:	2030-01h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H30.01 **DO function state 1 read through communication**

Hex:	2030-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DO function 1.
Bit 1 corresponds to DO function 2.
Bit 2 corresponds to DO function 3.
…
By analogy

H30.02 **DO function state 2 read through communication**

Hex:	2030-03h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Bit 0 corresponds to DO function 17.
Bit 1 corresponds to DO function 18.
Bit 2 corresponds to DO function 19.
…
By analogy

H30.03 Input pulse reference sampling read via communication

Hex:	2030-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H30.16 Encoder communication timeout timing

Hex:	2030-11h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H30.17 Encoder communication CRC error count

Hex:	2030-12h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H30.18 **Encoder communication frame stop bit error count**

Hex:	2030-13h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

2.27 H31 Communication Setting

H31.00 **VDI virtual level set through communication**

Hex:	2031-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

When H17.90 is set to 1, the VDI state is defined by this parameter.
The VDI logic is determined by H17.91 (Default VDI virtual level value upon power-on) upon initial power-on. Then, H31.00 is determined by the VDI logic.
"bit(n) = 1" of H31.00 indicates the logic of VDI (n+1) is "1". "bit(n)=0" indicates the logic of VDI (n+1) is "0".

H31.01 **Frequency-division output frequency set through communication**

Hex:	2031-02h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	16000000	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0 Hz–16000000 Hz

Description

When H05.38 is set to 4, H31.01 sets the frequency of the frequency division output port.

H31.04 DO state set through communication

Hex:	2031-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

Sets DO output status.

H31.05 AO set through communication

Hex:	2031-06h	Effective mode:	Real time
Min.:	-10000	Unit:	mV
Max.:	10000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-10000 mV–10000 mV

Description

Set H04.50 to 10 to define AO through H31.05 (in mV).

H31.09 Speed reference set via communication

Hex:	2031-0Ah	Effective mode:	Real time
Min.:	-9999.000	Unit:	RPM
Max.:	9999.000	Data Type:	Int32
Default:	0.000	Change:	Real-time

Value Range:

-9999.000rpm to 9999.000rpm

Description

Set H06.02 to 4 to define the speed reference in the speed control mode through H31.09 (unit: 0.001 rpm).

H31.11 Torque reference set via communication

Hex:	2031-0Ch	Effective mode:	Real time
Min.:	-100.000	Unit:	%
Max.:	100.000	Data Type:	Int32
Default:	0.000	Change:	Real-time

Value Range:

-100.000% to 100.000%

Description

Set H07.02 to 4 to define the torque reference in the torque control mode through this parameter (unit: 0.001%). The setpoint 100.000% corresponds to the rated torque of the motor.

2.28 H32 Direct Drive Parameters

H32.00 **Encoder interpolator mismatch alarm (E124)**

Hex:	2032-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

The T2 interpolator matches the HipeFace encoder. The power-on check switch is turned on by default.

H32.02 **Angle auto-tuning upon power-on**

Hex:	2032-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

Angle auto-tuning starts after the drive switches to the rdy state and the time defined by H32.41 elapses.

H32.03 **Angle auto-tuning switch controlled by control word**

Hex:	2032-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Disabled
1: Control word 6
2: Control word 7
Description
Used to enable the angle auto-tuning switchover switch through the control word.

H32.04 Angle auto-tuning state

Hex:	2032-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
bit0: bit7 of 6041
bit1: E602.9
Description
When the incremental encoder is not angle auto-tuned, it will raise an alarm or provide a status bit based on the setting. When bit0 and bit1 are both set, only bit0 is effective.

H32.05 Pre-positioning retract selection

Hex:	2032-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Disabled
1: Enabled
Description
Used to retract by a certain distance after auto-tuning through pre-positioning is done.

H32.06 Position feedback

Hex:	2032-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled
1: Enabled

Description

Used to align the position feedback to the position before angle auto-tuning for incremental encoders.

H32.07 Incremental homing method

Hex:	2032-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Z Signal short circuit
1: Only first short circuit

Description

Selects the Z signal for Z signal homing of an incremental communication encoder. Z signal width is set according to H32.08.

H32.08 Homing signal width

Hex:	2032-09h	Effective mode:	Real time
Min.:	100	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	800	Change:	At stop

Value Range:

100–65535

Description

The setpoint is active after the position is latched by Z signal.

H32.10 Max. reference current in angle auto-tuning through inching

Hex:	2032-0Bh	Effective mode:	At stop
Min.:	10.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	100.0	Change:	At stop

Value Range:

10.0% to 300.0%

Description

Defines the maximum reference current during auto-tuning.

H32.13 Motor operation threshold (ROT/DDR) in angle auto-tuning through inching

Hex:	2032-0Eh	Effective mode:	At stop
Min.:	0.001	Unit:	deg
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001deg to 20.000deg

Description

Sets motor operation threshold for position lock angle auto-tuning.
Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.14 Motor standstill threshold (ROT/DDR) in angle auto-tuning through inching

Hex:	2032-0Fh	Effective mode:	At stop
Min.:	0.1	Unit:	[mm/s]/[rpm]
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.15 Motor operation threshold (DDL) in angle auto-tuning through inching

Hex:	2032-10h	Effective mode:	At stop
Min.:	0.001	Unit:	mm
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001 millimeters–20.000 millimeters

Description

Sets motor operation threshold for position lock angle auto-tuning.
Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.16 Motor standstill threshold (DDL) in angle auto-tuning through inching

Hex:	2032-11h	Effective mode:	At stop
Min.:	0.1	Unit:	mm/s
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1 mm/s–100.0 mm/s

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.18 Motor standstill threshold for inching angle auto-tuning

Hex:	2032-13h	Effective mode:	At stop
Min.:	0.1	Unit:	s
Max.:	10.0	Data Type:	UInt16
Default:	0.5	Change:	At stop

Value Range:

0.1s to 10.0s

Description

Sets motor standstill threshold for auto-tuning. Usually no change is required.

H32.20 Max. reference current in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-15h	Effective mode:	At stop
Min.:	10.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	100.0	Change:	At stop

Value Range:

10.0% to 300.0%

Description

Defines the maximum reference current during auto-tuning.

H32.22 Electrical angle reference in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-17h	Effective mode:	At stop
Min.:	0.0	Unit:	deg
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:
0.0deg to 360.0deg
Description
Defines the electrical angle during auto-tuning through pre-positioning.

H32.23 Electrical angle reference change range in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-18h	Effective mode:	At stop
Min.:	10.0	Unit:	deg
Max.:	170.0	Data Type:	UInt16
Default:	90.0	Change:	At stop

Value Range:
10.0deg to 170.0deg
Description
Defines the electrical angle change range during auto-tuning.

H32.24 Motor stop threshold (ROT/DDR) in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-19h	Effective mode:	At stop
Min.:	0.1	Unit:	[mm/s]/[rpm]
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:
0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]
Description
Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.25 Motor stop threshold (DDL) in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-1Ah	Effective mode:	At stop
Min.:	0.1	Unit:	mm/s
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:
0.1 mm/s–100.0 mm/s
Description
Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.26 Damping in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-1Bh	Effective mode:	At stop
Min.:	0.00	Unit:	[N/(m/s)]/[N·m/rpm]
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	At stop

Value Range:

0.00[N/(m/s)]/[N·m/rpm]–655.35[N/(m/s)]/[N·m/rpm]

Description

Sets the damping coefficient for motor auto-tuning. The appropriate coefficient ensures a smooth and impact-free operation.

(1) This coefficient is usually related to the load characteristics. Larger load requires a larger coefficient.

(2) When the coefficient is too small, the auto-tuning process may be prone to strong impact, which is normal. When it is too large, motor operation may be sluggish or even stops, which is also normal and a timeout alarm will be raised.

H32.29 Motor standstill threshold for close-loop pre-positioning angle auto-tuning

Hex:	2032-1Eh	Effective mode:	At stop
Min.:	0.1	Unit:	s
Max.:	10.0	Data Type:	UInt16
Default:	0.5	Change:	At stop

Value Range:

0.1s to 10.0s

Description

Sets motor standstill threshold for auto-tuning. Usually no change is required.

H32.30 Max. reference current in angle auto-tuning through position lock

Hex:	2032-1Fh	Effective mode:	At stop
Min.:	10.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	100.0	Change:	At stop

Value Range:

10.0% to 300.0%

Description

Defines the maximum reference current during auto-tuning.

H32.33 Motor operation threshold (ROT/DDR) in angle auto-tuning through position lock

Hex:	2032-22h	Effective mode:	At stop
Min.:	0.001	Unit:	deg
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001deg to 20.000deg

Description

Sets motor operation threshold for position lock angle auto-tuning.

Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.34 Motor standstill threshold (ROT/DDR) in angle auto-tuning through position lock

Hex:	2032-23h	Effective mode:	At stop
Min.:	0.1	Unit:	[mm/s]/[rpm]
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.35 Motor operation threshold (DDL) in angle auto-tuning through position lock

Hex:	2032-24h	Effective mode:	At stop
Min.:	0.001	Unit:	mm
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001 millimeters–20.000 millimeters

Description

Sets motor operation threshold for position lock angle auto-tuning.
Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.36 Motor standstill threshold (DDL) in angle auto-tuning through position lock

Hex:	2032-25h	Effective mode:	At stop
Min.:	0.1	Unit:	mm/s
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:
0.1 mm/s–100.0 mm/s
Description
Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.37 Angle gain in angle auto-tuning through position lock

Hex:	2032-26h	Effective mode:	At stop
Min.:	0	Unit:	deg/(p/s)
Max.:	10000	Data Type:	UInt16
Default:	1000	Change:	At stop

Value Range:
0deg/(p/s)–10000deg/(p/s)
Description
Defines the angle gain during auto-tuning. A proper setpoint improves the auto-tuning angle accuracy. The default value applies to most of applications.

H32.38 Inertia ratio in angle auto-tuning through position lock

Hex:	2032-27h	Effective mode:	At stop
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	0.00	Change:	At stop

Value Range:
0.00–120.00
Description
Sets the inertia ratio gain for auto-tuning. A proper value can ensure smooth and jitter-free operation and reduce the operation range.

(1) This coefficient is usually related to the load characteristics. You can just set it to the actual inertia ratio.
(2) A small value may lead to long movement during auto-tuning, which is a normal phenomenon. A large value may lead to gain mismatch oscillation.

H32.39 Gain class in angle auto-tuning through position lock

Hex:	2032-28h	Effective mode:	At stop
Min.:	4	Unit:	level
Max.:	31	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:
4level to 31level
Description
Defines the loop stiffness level gain for auto-tuning. A proper value can ensure smooth and jitter-free operation and reduce the operation range.
(1) A small value may lead to long movement during auto-tuning, which is a normal phenomenon. A large value may lead to gain mismatch oscillation.

H32.40 Left/Right limit function

Hex:	2032-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
1. Left limit being positive
2. Left limit being negative
Description
Enables the left and right limit function for the motor. If the left limit is positive, the right limit is negative, and if the left limit is negative, the right limit is positive.

H32.41 Angle auto-tuning delay upon power-on

Hex:	2032-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:
0 ms–65535 ms

Description
Used to set automatic angle auto-tuning delay upon power-on.

H32.53 Motor standstill threshold for position lock angle auto-tuning

Hex:	2032-36h	Effective mode:	At stop
Min.:	0.1	Unit:	s
Max.:	10.0	Data Type:	UInt16
Default:	0.5	Change:	At stop

Value Range:
0.1s to 10.0s
Description
Sets motor standstill threshold for auto-tuning. Usually no change is required.

H32.54 Hall auto-tuning selection

Hex:	2032-37h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
When this parameter is enabled, the Hall auto-tuning will be started automatically after basic angle auto-tuning is done.

H32.55 Hall signal UVW manual adjustment

Hex:	2032-38h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–7
Description
-

H32.56 UVW filter time of Hall signal

Hex:	2032-39h	Effective mode:	Real time
Min.:	0	Unit:	ms

Max.:	10	Data Type:	UInt16
Default:	5	Change:	Real-time

Value Range:

0 ms–10 ms

Description

-

H32.57 Hall closed-loop locked-rotor speed

Hex:	2032-3Ah	Effective mode:	Real time
Min.:	0	Unit:	[mm/s]/[rpm]
Max.:	65535	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0[mm/s]/[rpm]–65535[mm/s]/[rpm]

Description

-

H32.58 Hall closed-loop locked-rotor current

Hex:	2032-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	120.0	Change:	At stop

Value Range:

0.0% to 300.0%

Description

-

H32.59 Hall closed-loop locked-rotor window time

Hex:	2032-3Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	2000	Data Type:	UInt16
Default:	10	Change:	At stop

Value Range:

0 ms–2000 ms

Description

-

H32.60 Hall closed-loop inertia ratio

Hex:	2032-3Dh	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	0.00	Change:	At stop

Value Range:
0.00–120.00
Description
-

H32.61 Hall closed-loop rigidity

Hex:	2032-3Eh	Effective mode:	Real time
Min.:	4	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:
4–31
Description
-

H32.62 Electrical angle save flag

Hex:	2032-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–65535
Description
Automatic reset will be performed after the electrical angle is saved when dynamic Hall auto-tuning is done.

H32.63 Hall1 electric angle

Hex:	2032-40h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535

Description

-

H32.64 **Hall2 electric angle**

Hex:	2032-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H32.65 **Hall3 electric angle**

Hex:	2032-42h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H32.66 **Hall4 electric angle**

Hex:	2032-43h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H32.67 **Hall5 electric angle**

Hex:	2032-44h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H32.68 Hall6 electric angle

Hex:	2032-45h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H32.70 Motor overload protection mode

Hex:	2032-47h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Internal motor overload curve

1: External motor overload curve

2: Current limit overload protection

3: Hide motor overload protection

Description

-

H32.73 Thermal threshold current of overload current limit

Hex:	2032-4Ah	Effective mode:	Upon the next power-on
Min.:	100.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	115.0	Change:	At stop

Value Range:

100.0% to 750.0%

Description

Thermal limit current is a percentage of motor rated current defaulted to 100%, above which the motor starts to heat continuously. The motor current will be finally maintained at this value.

H32.74 Peak current of overload current limit

Hex:	2032-4Bh	Effective mode:	Upon the next power-on
Min.:	100.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	300.0	Change:	At stop

Value Range:

100.0% to 750.0%

Description

Defines the ratio of the peak current that can be reached by the motor to the rated current of the motor.

H32.75 Max. current duration of overload protection

Hex:	2032-4Ch	Effective mode:	Real time
Min.:	0.01	Unit:	s
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	At stop

Value Range:

0.01s to 655.35s

Description

Calculate the maximum heat that can be reached by the motor based on the maximum current continuous time, and take this value as the motor overload alarm threshold.

H32.76 Current limit time constant of overload protection

Hex:	2032-4Dh	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	At stop

Value Range:

0.01–655.35

Description

It is related to the maximum current continuous time. The higher the setpoint, the longer the maximum current continuous time will be.

H32.77 Current limit alarm threshold of overload protection

Hex:	2032-4Eh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0% to 750.0%

Description

If current limit protection is effective, and the limited current is lower than this value, the drive will raise an alarm.

H32.78 Current limit fault threshold of overload protection

Hex:	2032-4Fh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0% to 750.0%

Description

If current limit protection is effective, and the limited current is lower than this value, the drive will report an error.

H32.79 Thermal threshold current of overload

Hex:	2032-50h	Effective mode:	Upon the next power-on
Min.:	100.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	115.0	Change:	At stop

Value Range:

100.0% to 750.0%

Description

-

H32.80 Thermal current interval of overload

Hex:	2032-51h	Effective mode:	Upon the next power-on
Min.:	0.1	Unit:	%
Max.:	204.8	Data Type:	UInt16
Default:	6.4	Change:	At stop

Value Range:

0.1% to 204.8%

Description

-

H32.81 Overload heat dissipation current interval

Hex:	2032-52h	Effective mode:	Upon the next power-on
Min.:	0.1	Unit:	%
Max.:	204.8	Data Type:	UInt16
Default:	6.4	Change:	At stop

Value Range:

0.1% to 204.8%

Description

-

H32.82 Length of overload heat dissipation curve

Hex:	2032-53h	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–200

Description

-

H32.83 Length of overload heat dissipation curve

Hex:	2032-54h	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–200

Description

-

2.29 H33 Compensation Parameters

H33.00 **Compensation data BUFFER**

Address:	0x3300	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.01 **Compensation data BUFFER**

Address:	0x3301	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.02 **Compensation data BUFFER**

Address:	0x3302	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.03 **Compensation data BUFFER**

Address:	0x3303	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535
Description
-

H33.04 **Compensation data BUFFER**

Address:	0x3304	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.05 **Compensation data BUFFER**

Address:	0x3305	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.06 **Compensation data BUFFER**

Address:	0x3306	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.07 **Compensation data BUFFER**

Address:	0x3307	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.08 Compensation data BUFFER

Address:	0x3308	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.09 Compensation data BUFFER

Address:	0x3309	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.10 Compensation data BUFFER

Address:	0x330A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.11 **Compensation data BUFFER**

Address:	0x330B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.12 **Compensation data BUFFER**

Address:	0x330C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.13 **Compensation data BUFFER**

Address:	0x330D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.14 **Compensation data BUFFER**

Address:	0x330E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535

Description
-

H33.15 **Compensation data BUFFER**

Address:	0x330F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.16 **Compensation data BUFFER**

Address:	0x3310	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.17 **Compensation data BUFFER**

Address:	0x3311	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.18 **Compensation data BUFFER**

Address:	0x3312	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.19 Compensation data BUFFER

Address: 0x3313 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.20 Compensation data BUFFER

Address: 0x3314 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.21 Compensation data BUFFER

Address: 0x3315 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.22 Compensation data BUFFER

Address: 0x3316 Effective mode: Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.23 Compensation data BUFFER

Address:	0x3317	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.24 Compensation data BUFFER

Address:	0x3318	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.25 Compensation data BUFFER

Address:	0x3319	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.26 **Compensation data BUFFER**

Address:	0x331A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.27 **Compensation data BUFFER**

Address:	0x331B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.28 **Compensation data BUFFER**

Address:	0x331C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.29 **Compensation data BUFFER**

Address:	0x331D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535

Description
-

H33.30 **Compensation data BUFFER**

Address:	0x331E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.31 **Compensation data BUFFER**

Address:	0x331F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.32 **Compensation data BUFFER**

Address:	0x3320	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.33 **Compensation data BUFFER**

Address:	0x3321	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.34 Compensation data BUFFER

Address:	0x3322	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.35 Compensation data BUFFER

Address:	0x3323	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.36 Compensation data BUFFER

Address:	0x3324	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.37 Compensation data BUFFER

Address:	0x3325	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.38 Compensation data BUFFER

Address:	0x3326	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.39 Compensation data BUFFER

Address:	0x3327	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.40 Current Compensation BUFFER group number

Address:	0x3328	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.41 **Compensation data sum**

Address:	0x3329	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32767	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–32767
Description
-

H33.44 **Data command**

Address:	0x332C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
0–1
Description
-

H33.45 **Data storage position**

Address:	0x332D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
0: Servo RAM
1: Servo FLASH
2: Encoder FLASH
Description
-

H33.46 **Data clear**

Address:	0x332E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–3
Description
-

H33.47 **Software tool write status**

Address:	0x332F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–2
Description
-

H33.48 **Servo read status**

Address:	0x3330	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H33.49 **Software tool read status**

Address:	0x3331	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–2
Description
-

H33.50 **Servo write status**

Address:	0x3332	Effective mode:	-
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16

Default: 0 Change: Unchangeable

Value Range:

0–2

Description

-

H33.51 Data transmission completed flag

Address: 0x3333 Effective mode: Real time

Min.: 0 Unit: -

Max.: 1 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–1

Description

-

H33.52 Servo data transfer completed flag

Address: 0x3334 Effective mode: Real time

Min.: 0 Unit: -

Max.: 1 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–1

Description

-

H33.60 Accuracy compensation function

Address: 0x333C Effective mode: Upon the next power-on

Min.: 0 Unit: -

Max.: 1 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–1

Description

Used to enable accuracy compensation.

H33.61 Accuracy compensation sum

Address: 0x333D Effective mode: Upon the next power-on

Min.:	0	Unit:	count
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0count to 65535count

Description

Total accuracy compensation points.

H33.62 Starting offset address of accuracy compensation

Address:	0x333E	Effective mode:	Upon the next power-on
Min.:	-21474836.48	Unit:	[mm]/[deg]
Max.:	21474836.47	Data Type:	Int32
Default:	0.00	Change:	At stop

Value Range:

-21474836.48[mm]/[deg]–21474836.47[mm]/[deg]

Description

The direct-drive motor compensation home of incremental encoder is the home of the mechanical system coordinate.

H33.64 Accuracy compensation data interval

Address:	0x3340	Effective mode:	Upon the next power-on
Min.:	-327.67	Unit:	[mm]/[deg]
Max.:	327.67	Data Type:	Int16
Default:	0.00	Change:	At stop

Value Range:

-327.67[mm]/[deg]–327.67[mm]/[deg]

Description

Interval of adjacent compensation points of accuracy compensation.

H33.65 Accuracy compensation dial phase sequence

Address:	0x3341	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

Phase sequence record of accuracy compensation dial stage.

H33.66 **Accuracy compensation dial reference direction**

Address:	0x3342	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–1
Description
Reference direction record of accuracy compensation dial stage.

H33.67 **Servo homing completed**

Address:	0x3343	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Accuracy compensation homing completion signal.

H33.68 **Current acting index of accuracy compensation**

Address:	0x3344	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Current compensation position of accuracy compensation.

H33.69 **Forced homing start**

Address:	0x3345	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–1

Description
Enables accuracy compensation forced homing.

H33.70 Forced homing mode

Address:	0x3346	Effective mode:	Upon the next power-on
Min.:	-32768	Unit:	-
Max.:	32767	Data Type:	Int16
Default:	-2	Change:	At stop

Value Range:
-32768–32767
Description
Homing mode record of accuracy compensation dial stage.

H33.71 Forced homing at low speed

Address:	0x3347	Effective mode:	Upon the next power-on
Min.:	0	Unit:	[mm/s]/[rpm]
Max.:	1000	Data Type:	UInt16
Default:	10	Change:	At stop

Value Range:
0[mm/s]/[rpm]–1000[mm/s]/[rpm]
Description
Homing speed record of accuracy compensation dial stage.

H33.72 Single-turn absolute position of accuracy compensation home of absolute encoder

Address:	0x3348	Effective mode:	Upon the next power-on
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:
0p to 4294967295p
Description
Single-turn absolute value of direct-drive motor compensation home of absolute encoder.

H33.74 Min.pulse width of frequency-division output accuracy compensation

Address:	0x334A	Effective mode:	Upon the next power-on

Min.:	2	Unit:	count
Max.:	7	Data Type:	UInt16
Default:	3	Change:	At stop

Value Range:

2count to 7count

Description

Defines the minimum pulse width of accuracy compensation frequency-division output.

H33.75 Accuracy compensation data unit

Address:	0x334B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: [um]/[arcsec]

1: [mm]/[mrad]

Description

Defines the accuracy compensation data unit.

For DDL: 0-um; 1-mm;

For DDR: 0-arcsec; 2-mrad

H33.81 Motor cogging torque ripple compensation sum

Address:	0x3351	Effective mode:	Real time
Min.:	0	Unit:	count
Max.:	65535	Data Type:	UInt16
Default:	2000	Change:	At stop

Value Range:

0count to 65535count

Description

Motor cogging torque ripple compensation sum

2.30 1000h Object Dictionary

1005h SYNC message COB-ID

Hex:	1005h	Effective mode:	Real time
Min.:	128	Unit:	-

Max.:	4294967295	Data Type:	UInt32
Default:	128	Change:	Real-time

Value Range:

128–4294967295

Description

Only 0x80h and 0x40000080h can be written to the SYNC message.

If 0x80h is written, the sync generator does not work.

If 0x40000080h is written, the sync generator is activated.

To activate the sync generator, you must set 1006h to a non-zero value.

1006h Synchronization cycle

Hex:	1006h	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0us to 2147483647us

Description

Applicable to the synchronization generator only (unit: us).

100Ch Node guarding time

Hex:	100Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the node daemon running time, in ms.

100dh Life factor

Hex:	100dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–255

Description

This parameter must be used together with the node daemon function and must be set to a value greater than 1.

1014h Emergency message COB-ID

Hex:	1014h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	128	Change:	Real-time

Value Range:

0–4294967295

Description

The most significant bit indicates whether to disable the emergency message of the device. Only the data "0x80+Node_ID" can be written for the bit to enable the emergency message of the device.

If the data "0x80000080+Node_ID" is written, the emergency message is disabled.

When the emergency message is enabled, the COB-ID must be the same as that of the object.

1016.01h Consumer heartbeat time 1

Hex:	1016-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description

Parameters include the address of the monitored node and actual consumer time, which must be longer than the heartbeat producer time (unit: ms) of the corresponding node. Two different consumer time cannot be set for one node.

Bits 0 to 15: Monitoring time

Bits 16 to 23: The monitored address

Bits 24 to 31: Reserved (0)

1016.02h Consumer heartbeat time 2

Hex:	1016-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1016.01h.

1016.03h Consumer heartbeat time 3

Hex: 1016-03h Effective mode: Real time

Min.: 0 Unit: -

Max.: 2147483647 Data Type: UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1016.01h.

1016.04h Consumer heartbeat time 4

Hex: 1016-04h Effective mode: Real time

Min.: 0 Unit: -

Max.: 2147483647 Data Type: UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1016.01h.

1016.05h Consumer heartbeat time 5

Hex: 1016-05h Effective mode: Real time

Min.: 0 Unit: -

Max.: 2147483647 Data Type: UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1016.01h.

1017h Producer heartbeat time

Hex: 1017h Effective mode: Real time

Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the heartbeat production time of the slave, in ms.

1400.01h COB-ID of RPDO1

Hex:	1400-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	512	Change:	Real-time

Value Range:

0–4294967295

Description

Only the most significant bit can be modified. When the most significant bit is 0, the PDO is active. When the most significant bit is 1, the PDO is inactive.

The factory settings are as follows:

1400h: 0x00000200 + Node_ID

1401h: 0x80000300 + Node_ID

1402h: 0x80000400 + Node_ID

1403h: 0x80000500 + Node_ID

1400.02h Transmission type of RPDO1

Hex:	1400-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:

0–255

Description

This parameter can be modified only when PDO is inactive.

Different values correspond to different PDO transmission types, as follows:

0: Not circle synchronous data

1 to 240: Circle synchronous data

254 and 255: Not circle asynchronous data

1401.01h COB-ID of RPDO2

Hex:	1401-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	768	Change:	Real-time

Value Range:
0–4294967295
Description
Same as 1400.01h.

1401.02h Transmission type of RPDO2

Hex:	1401-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:
0–255
Description
Same as 1400.02h.

1402.01h COB-ID of RPDO3

Hex:	1402-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	2147484672	Change:	Real-time

Value Range:
0–4294967295
Description
Same as 1400.01h.

1402.02h Transmission type of RPDO3

Hex:	1402-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:
0–255

Description
Same as 1400.02h.

1403.01h COB-ID of RPDO4

Hex:	1403-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	2147484928	Change:	Real-time

Value Range:
0–4294967295
Description
Same as 1400.01h.

1403.02h Transmission type of RPDO4

Hex:	1403-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:
0–255
Description
Same as 1400.02h.

1600.00h Number of valid mapped objects in RPDO1

Hex:	1600-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:
0–8
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1600.01h Mapped object 1 in RPDO1

Hex:	1600-01h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	2147483647	Data Type:	UInt32
Default:	1614807056	Change:	Real-time

Value Range:

0–2147483647

Description

The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:

Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1600.02h Mapped object 2 in RPDO1

Hex:	1600-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1627324448	Change:	Real-time

Value Range:

0–2147483647

Description

Same as 1600.01h.

1600.03h Mapped object 3 in RPDO1

Hex:	1600-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1616904200	Change:	Real-time

Value Range:

0–2147483647

Description

Same as 1600.01h.

1600.04h Mapped object 4 in RPDO1

Hex:	1600-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1600.01h.

1600.05h Mapped object 5 in RPDO1

Hex:	1600-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1600.01h.

1600.06h Mapped object 6 in RPDO1

Hex:	1600-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1600.01h.

1600.07h Mapped object 7 in RPDO1

Hex:	1600-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1600.01h.

1600.08h Mapped object 8 in RPDO1

Hex:	1600-08h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1600.01h.

1601.00h Number of valid mapped objects in RPDO2

Hex:	1601-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:
0–8
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1601.01h Mapped object 1 in RPDO2

Hex:	1601-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1618608160	Change:	Real-time

Value Range:
0–2147483647
Description
The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.
Sub-indexes are written in the following format:
Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1601.02h Mapped object 2 in RPDO2

Hex:	1601-02h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1619066912	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1601.03h Mapped object 3 in RPDO2

Hex:	1601-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1601.04h Mapped object 4 in RPDO2

Hex:	1601-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1601.05h Mapped object 5 in RPDO2

Hex:	1601-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1601.06h Mapped object 6 in RPDO2

Hex:	1601-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1601.07h Mapped object 7 in RPDO2

Hex:	1601-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1601.08h Mapped object 8 in RPDO2

Hex:	1601-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1601.01h.

1602.00h Number of valid mapped objects in RPDO3

Hex:	1602-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–8

Description

This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1602.01h Mapped object 1 in RPDO3

Hex:	1602-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description

The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:

Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1602.02h Mapped object 2 in RPDO3

Hex:	1602-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description

Same as 1602.01h.

1602.03h Mapped object 3 in RPDO3

Hex:	1602-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description
Same as 1602.01h.

1602.04h Mapped object 4 in RPDO3

Hex:	1602-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1602.01h.

1602.05h Mapped object 5 in RPDO3

Hex:	1602-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1602.01h.

1602.06h Mapped object 6 in RPDO3

Hex:	1602-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1602.01h.

1602.07h Mapped object 7 in RPDO3

Hex:	1602-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32

Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1602.01h.

1602.08h Mapped object 8 in RPDO3

Hex:	1602-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1602.01h.

1603.00h Number of valid mapped objects in RPDO4

Hex:	1603-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–8
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1603.01h Mapped object 1 in RPDO4

Hex:	1603-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:
Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1603.02h Mapped object 2 in RPDO4

Hex:	1603-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1603.03h Mapped object 3 in RPDO4

Hex:	1603-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1603.04h Mapped object 4 in RPDO4

Hex:	1603-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1603.05h Mapped object 5 in RPDO4

Hex:	1603-05h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1603.06h Mapped object 6 in RPDO4

Hex:	1603-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1603.07h Mapped object 7 in RPDO4

Hex:	1603-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1603.08h Mapped object 8 in RPDO4

Hex:	1603-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1603.01h.

1800.01h COB-ID of TPDO1

Hex:	1800-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	1073742208	Change:	Real-time

Value Range:

0–4294967295

Description

Only the MSB and the second MSB can be modified.

When the most significant bit is 0, the PDO is active. When the most significant bit is 1, the PDO is inactive.

The second most significant bit defines whether the PDO can be triggered by a remote frame. You are recommended to set this bit to 1 to disable the remote frame to trigger the PDO.

The factory settings are as follows:

1800h: 0x40000180 + Node_ID

1801h: 0xC0000280 + Node_ID

1802h: 0xC0000380 + Node_ID

1803h: 0xC0000480 + Node_ID

1800.02h Transmission type of TPDO1

Hex:	1800-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:

0–255

Description

This parameter can be modified only when PDO is inactive. Different values correspond to different PDO transmission types, as follows:

0: Not circle synchronous data

1 to 240: Circle synchronous data

254 and 255: Not circle asynchronous data

1800.03h Inhibit time of TPDO1

Hex:	1800-03h	Effective mode:	Real time
Min.:	0	Unit:	100us
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0–65535
Description
This parameter can be modified only when PDO is inactive.
The unit is 100 µs. The value 0 indicates that the inhibit time is invalid.

1800.05h Event counter of TPDO1

Hex:	1800-05h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
This parameter can be modified only when PDO is inactive.
When the unit is ms, the value 0 indicates that the event counter is inactive.

1801.01h COB-ID of TPDO2

Hex:	1801-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	1073742464	Change:	Real-time

Value Range:
0–4294967295
Description
Same as 1800.01h.

1801.02h Transmission type of TPDO2

Hex:	1801-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:
0–255
Description
Same as 1800.02h.

1801.03h Inhibit time of TPDO2

Hex:	1801-03h	Effective mode:	Real time
Min.:	0	Unit:	100us
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0–65535
Description
Same as 1800.03h.

1801.05h Event counter of TPDO2

Hex:	1801-05h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Same as 1800.05h.

1802.01h COB-ID of TPDO3

Hex:	1802-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	3221226368	Change:	Real-time

Value Range:
0–4294967295
Description
Same as 1800.01h.

1802.02h Transmission type of TPDO3

Hex:	1802-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:
0–255

Description
Same as 1800.02h.

1802.03h Inhibit time of TPDO3

Hex:	1802-03h	Effective mode:	Real time
Min.:	0	Unit:	100us
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0–65535
Description
Same as 1800.03h.

1802.05h Event counter of TPDO3

Hex:	1802-05h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Same as 1800.05h.

1803.01h COB-ID of TPDO4

Hex:	1803-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	3221226624	Change:	Real-time

Value Range:
0–4294967295
Description
Same as 1800.01h.

1803.02h Transmission type of TPDO4

Hex:	1803-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:
0–255
Description
Same as 1800.02h.

1803.03h Inhibit time of TPDO4

Hex:	1803-03h	Effective mode:	Real time
Min.:	0	Unit:	100us
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0–65535
Description
Same as 1800.03h.

1803.05h Event counter of TPDO4

Hex:	1803-05h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Same as 1800.05h.

1A00.00h Number of valid mapped objects in TPDO1

Hex:	1A00-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:
0–8
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1A00.01h Mapped object 1 in TPDO1

Hex:	1A00-01h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1614872592	Change:	Real-time

Value Range:

0–2147483647

Description

The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:

Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1A00.02h Mapped object 2 in TPDO1

Hex:	1A00-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1627193376	Change:	Real-time

Value Range:

0–2147483647

Description

Same as 1A00.01h.

1A00.03h Mapped object 3 in TPDO1

Hex:	1A00-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1616969736	Change:	Real-time

Value Range:

0–2147483647

Description

Same as 1A00.01h.

1A00.04h Mapped object 4 in TPDO1

Hex:	1A00-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1A00.01h.

1A00.05h Mapped object 5 in TPDO1

Hex: 1A00-05h Effective mode: Real time

Min.: 0 Unit: -

Max.: 2147483647 Data Type: UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1A00.01h.

1A00.06h Mapped object 6 in TPDO1

Hex: 1A00-06h Effective mode: Real time

Min.: 0 Unit: -

Max.: 2147483647 Data Type: UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1A00.01h.

1A00.07h Mapped object 7 in TPDO1

Hex: 1A00-07h Effective mode: Real time

Min.: 0 Unit: -

Max.: 2147483647 Data Type: UInt32

Default: 0 Change: Real-time

Value Range:

0–2147483647

Description

Same as 1A00.01h.

1A00.08h Mapped object 8 in TPDO1

Hex: 1A00-08h Effective mode: Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A00.01h.

1A01.00h Number of valid mapped objects in TPDO2

Hex:	1A01-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:
0–8
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1A01.01h Mapped object 1 in TPDO2

Hex:	1A01-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1617166368	Change:	Real-time

Value Range:
0–2147483647
Description
The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.
Sub-indexes are written in the following format:
Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1A01.02h Mapped object 2 in TPDO2

Hex:	1A01-02h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1617690656	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A01.03h Mapped object 3 in TPDO2

Hex:	1A01-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A01.04h Mapped object 4 in TPDO2

Hex:	1A01-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A01.05h Mapped object 5 in TPDO2

Hex:	1A01-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A01.06h Mapped object 6 in TPDO2

Hex:	1A01-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A01.07h Mapped object 7 in TPDO2

Hex:	1A01-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A01.08h Mapped object 8 in TPDO2

Hex:	1A01-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A01.01h.

1A02.00h Number of valid mapped objects in TPDO3

Hex:	1A02-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–8

Description

This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1A02.01h Mapped object 1 in TPDO3

Hex:	1A02-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description

The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:

Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1A02.02h Mapped object 2 in TPDO3

Hex:	1A02-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description

Same as 1A02.01h.

1A02.03h Mapped object 3 in TPDO3

Hex:	1A02-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–2147483647

Description
Same as 1A02.01h.

1A02.04h Mapped object 4 in TPDO3

Hex:	1A02-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A02.01h.

1A02.05h Mapped object 5 in TPDO3

Hex:	1A02-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A02.01h.

1A02.06h Mapped object 6 in TPDO3

Hex:	1A02-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A02.01h.

1A02.07h Mapped object 7 in TPDO3

Hex:	1A02-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32

Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A02.01h.

1A02.08h Mapped object 8 in TPDO3

Hex:	1A02-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A02.01h.

1A03.00h Number of valid mapped objects in TPDO4

Hex:	1A03-00h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–8
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1A03.01h Mapped object 1 in TPDO4

Hex:	1A03-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:
Bit 16 to bit 31: Index
Bit 8 to bit 15: Sub-index
Bit 0 to bit 7: Object length

1A03.02h Mapped object 2 in TPDO4

Hex:	1A03-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

1A03.03h Mapped object 3 in TPDO4

Hex:	1A03-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

1A03.04h Mapped object 4 in TPDO4

Hex:	1A03-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

1A03.05h Mapped object 5 in TPDO4

Hex:	1A03-05h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

1A03.06h Mapped object 6 in TPDO4

Hex:	1A03-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

1A03.07h Mapped object 7 in TPDO4

Hex:	1A03-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

1A03.08h Mapped object 8 in TPDO4

Hex:	1A03-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–2147483647
Description
Same as 1A03.01h.

2.31 6000h Object Dictionary

603Fh **Error code**

Hex:	603Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

When an error described in the DSP402 profile occurs on the servo drive, 603Fh is as described in DSP402.

When an error specified by the user occurs on the servo drive, 603Fh is 0xFF00.

The value of 603Fh is in hexadecimal.

In addition, the object dictionary 203Fh displays auxiliary bytes of fault codes in hexadecimal.

203Fh is a Uint 32 value, in which the high 16 bits indicate the manufacturer internal fault code, and the low 16 bits indicate the manufacturer external fault code.

6040h **Control word**

Hex:	6040h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

For details, see section Basic Functions of the function guide.

6041h **Status word**

Hex:	6041h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

For description of status words, see section Basic Functions of the function guide.

605Ah **Quick stop mode**

Hex:	605Ah	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	7	Data Type:	Int16
Default:	2	Change:	Real-time

Value Range:

0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state
2: Ramp to stop as defined by 6085h, keeping de-energized state
3: Stop at emergency stop torque, keeping de-energized state
5: Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock state
6: Ramp to stop as defined by 6085h, keeping position lock state
7: Stop at emergency stop torque, keeping position lock state

Description

Defines the deceleration mode of the motor for stopping rotating upon quick stop and the motor status after stop.
Note: When the brake function is enabled and the value of 605Ah is lower than 4, the stop mode is forcibly set to "2: Ramp to stop as defined by 6085h, keeping de-energized state".

605Ch **Stop mode at S-OFF**

Hex:	605Ch	Effective mode:	At stop
Min.:	-4	Unit:	-
Max.:	2	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

–4: Ramp to stop as defined by 6085h, keeping dynamic braking state
–3: Stop at zero speed, keeping dynamic braking state
–2: Ramp to stop as defined by 6084h/ 609Ah, keeping dynamic braking state
–1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/ 609Ah, keeping de-energized state
2: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the motor for stopping rotating upon S-ON OFF and the motor status after stop.
Note: If the brake is enabled, 605Ch is forced to –4: Ramp to stop as defined by 6085h, keeping dynamic braking state.

605Dh **Halt mode**

Hex:	605Dh	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	3	Data Type:	Int16
Default:	1	Change:	Real-time

Value Range:

1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping position lock state
2: Ramp to stop as defined by 6085h, keeping position lock state
3: Stop at emergency stop torque, keeping position lock state

Description

Defines the deceleration mode of the motor for stopping rotating upon S-ON pause and the motor status after stop.
PP/PV/HM mode:

Value	Stop Mode
1	Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock status
2	Ramp to stop as defined by 6085h, keeping position lock status
3	Stop at emergency-stop torque, keeping position lock status

PT mode:

Value	Stop Mode
1/2/3	Ramp to stop as defined by 6087h, keeping position lock status

605Eh **Stop mode at No. 2 fault**

Hex:	605Eh	Effective mode:	At stop
Min.:	-5	Unit:	-
Max.:	4	Data Type:	Int16
Default:	2	Change:	Real-time

Value Range:

–5: Stop at zero speed, keeping dynamic braking state
–4: Stop at emergency stop torque, keeping dynamic braking state
–3: Ramp to stop as defined by 6085h, keeping dynamic braking state
–2: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping dynamic braking state
–1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping de-energized state
2: Ramp to stop as defined by 6085h, keeping de-energized state
3: Stop at emergency stop torque, keeping de-energized state
4: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when a No. 2 fault occurs.
Note: If the brake is enabled, 605Eh is forced to –3: Ramp to stop as defined by 6085h, keeping dynamic braking state.

6060h Servo drive mode

Hex:	6060h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

1: Profile position mode (pp)
3: Profile velocity mode (pv)
4: Profile torque mode (pt)
6: Homing mode (hm)
7: Interpolation mode (ip)

Description

It defines the operation mode of the servo drive.
0: N/A (internally forced to pp)
1: Profile position mode (pp)
3: Profile velocity mode (pv)
4: Profile torque mode (pt)
6: Homing mode (hm)
7: Interpolation mode (ip)
Other: N/A
If an unsupported operation mode is selected through an SDO, an SDO error will be returned.
If an unsupported operation mode is selected through a PDO, the change of the operation mode will be invalid.

6061h Operation mode display

Hex:	6061h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

1: Profile position mode (pp)
3: Profile velocity mode (pv)
4: Profile torque mode (pt)
6: Homing mode (hm)
7: Interpolation mode (ip)

Description

Indicates the actual operation mode.
0: Profile position mode (pp)
1: Profile position mode (pp)
3: Profile velocity mode (pv)
4: Profile torque mode (pt)
6: Homing mode (hm)
7: Interpolation mode (ip)

6062h Position reference

Hex:	6062h	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the real-time position reference (reference unit).

6063h Position actual value

Hex:	6063h	Effective mode:	-
Min.:	-2147483648	Unit:	Pulse
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

–2147483648 to +2147483647

Description

Indicates the absolute position feedback (encoder unit) of the motor in real time.

6064h Position actual value

Hex:	6064h	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the absolute position feedback (reference unit) in real time.

Position actual value in user-defined unit (6064h) x Gear ratio (6091h) = Position actual value in encoder unit (6063h)

6065h Following error window

Hex:	6065h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit
Max.:	4294967295	Data Type:	UInt32
Default:	219895614	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the threshold of excessive position deviation (reference unit).

When the difference value between position demand value (6062h) and position actual value (6064h) keeps exceeding ±6065h after the time defined by 6066h elapses, B00.0 (Position deviation too large) occurs.

6066h Defines the time lapse to trigger excessive position deviation (EB00.0).

Hex:	6066h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the time lapse to trigger excessive position deviation (EB00.0), which must be used together with 6065h.

6067h Position window

Hex:	6067h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit
Max.:	4294967295	Data Type:	UInt32
Default:	46976	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the threshold for position reach.

If the difference between 6062h and 6064h is within ±6067h and the time reaches 6068h, the position is reached. In this case, bit 10 of 6041h is set to 1 in the profile position mode.

This flag bit is valid only when the S-ON signal is valid in profile position control mode.

6068h Position window time

Hex:	6068h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the window time for position reach, which must be used together with 6067h.

606Ch Actual speed

Hex:	606Ch	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit/s
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

–2147483648 to +2147483647

Description

It indicates the velocity actual value.

606Dh Velocity window

Hex:	606Dh	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 RPM to 65535 RPM

Description

Defines the threshold for speed reach.

If the difference value between the target speed 60FFh and the actual speed 606Ch is within ±606Dh and the time reaches 606Eh, the speed is reached and bit 10 of the status word 6041h is set to 1 in the profile velocity (PV) mode.
This flag bit is meaningful only when the servo drive is enabled in PV mode.

606Eh Velocity window time

Hex:	606Eh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

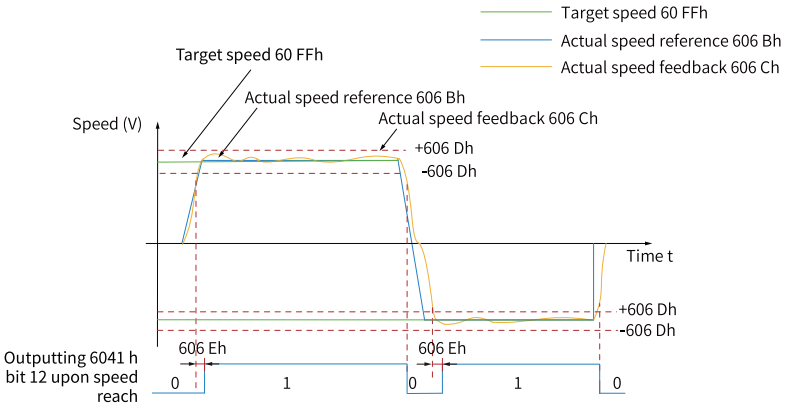
Value Range:

0 ms–65535 ms

Description

Defines the time window for speed reach, which must be used together with 606Dh.

Defines the time window for speed arrival. If the difference value between the target speed 60FFh and the actual speed 606Ch is within ±606Dh and the time reaches 606Eh, the speed is reached and bit 10 of the status word 6041h is set to 1 in the profile velocity (PV) mode.
This flag bit is meaningful only when the servo drive is enabled in PV mode.



606Fh Zero speed signal threshold

Hex:	606Fh	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 RPM to 65535 RPM

Description

Defines the threshold for determining whether the user velocity is 0.

When 606Ch is within ±606Fh and the time reaches the value set by 6070h, the user velocity is 0. When either condition is not met, the user velocity is not 0.

This flag bit is valid only in PV mode.

This flag bit is unrelated to the enable/disable state of the servo drive.

6070h Velocity threshold time

Hex:	6070h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

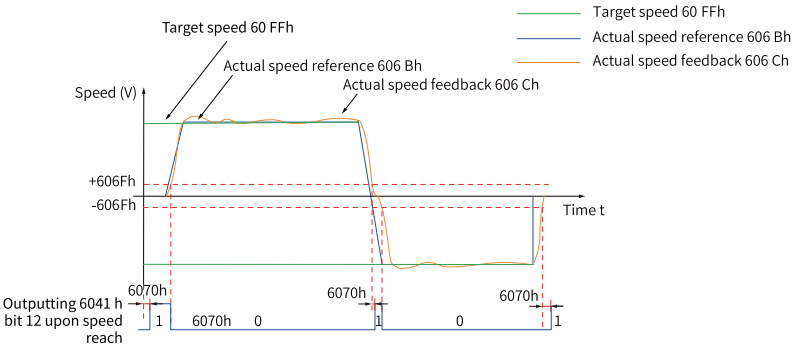
Description

Defines the time window for determining whether the user velocity is 0, which must be used together with 606Fh.

When 606Ch is within ±606Fh and the time reaches the value set by 6070h, the user velocity is 0. When either condition is not met, the user velocity is not 0.

This flag bit is valid only in PV mode.

This flag bit is unrelated to the enable/disable state of the servo drive.



6071h Target torque

Hex:	6071h	Effective mode:	Real time
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16

Default:	0	Change:	Real-time

Value Range:

-4000–4000

Description

Defines the target torque of the servo drive in the profile torque mode.

The value 1000 corresponds to the rated torque of the motor.

6072h Max. torque reference

Hex:	6072h	Effective mode:	Real time
Min.:	0	Unit:	0.001
Max.:	4000	Data Type:	UInt16
Default:	3500	Change:	Real-time

Value Range:

0. to 4000.

Description

Defines the maximum torque reference limit.

The value 1000 corresponds to the rated torque of the motor.

6074h Torque reference

Hex:	6074h	Effective mode:	-
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-4000–4000

Description

Defines the target torque value.

The value 1000 corresponds to the rated torque of the motor.

6077h Actual torque

Hex:	6077h	Effective mode:	-
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-4000–4000

Description

It displays the internal actual torque of the servo drive.
The value 1000 corresponds to the rated torque of the motor.

607Ah **Target position**

Hex:	607Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648 to 2147483647
Description
Defines the target position of the servo drive in the profile position mode.
When bit 6 of 6040h is set to 0, 607Ah indicates the absolute target position of current segment.
After positioning of current segment is done, the value of 6064h will be the same as the value of 607Ah.
When bit 6 of 6040h is set to 1, 607Ah indicates the target increment displacement of current segment.
After positioning of current segment is done, user displacement increment will be the same as the value of 607Ah.

607Ch **Home offset**

Hex:	607Ch	Effective mode:	At stop
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648 to 2147483647
Description
Defines the physical location of mechanical zero that deviates from the home of the motor in position control modes (profile position mode, interpolation mode, and homing mode).
The home offset takes effect in the following conditions: The device is powered on, the homing operation is complete, and bit15 of 6041h is set to 1.
After homing is done, the position actual value (6064h) will be the same as the value of 607Ch.
If 607Ch is outside the value of 607Dh (Software position limit), E09.1 (Home setting error) will occur.

607D.01h Min. position limit

Hex:	607D-01h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	-2147483648	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the minimum software position limit relative to the mechanical zero point.

Minimum software position limit = (607D.01h)

The software position limit is used to judge the absolute position. When homing is not performed, the internal software position limit is invalid.

The condition for activating the software position limit is set in H0A.01 (object dictionary 0x200A.02h).

607D.02h Max. position limit

Hex:	607D-02h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	2147483647	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the maximum software position limit relative to the mechanical zero.

Maximum software position limit = (607D.02h)

607Eh Reference polarity

Hex:	607Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–255

Description

Defines the polarity of position or speed references.

When bit 7 is 1, it indicates the position reference is multiplied by "–1" and the motor direction is reversed in the standard position mode or interpolation mode.

When bit 6 is 1, it indicates the speed reference (60FFh) is multiplied by "–1" and the motor direction is reversed in the speed mode.
When bit 5 is 1, it indicates the torque demand value (6071h) is multiplied by "–1" and the motor direction is reversed in the torque mode.
Other bits are meaningless.

607Fh Max. speed

Hex:	607Fh	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:
0 to 4294967295
Description
Defines the maximum user running speed.
Set a proper gear ratio (8:1 recommended) when using a 26-bit encoder. Otherwise, the motor speed will be limited to 3840 RPM.

6081h Profile velocity

Hex:	6081h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	111848106	Change:	Real-time

Value Range:
0 to 4294967295
Description
It sets the average velocity normally attained at the end of the acceleration ramp during a profiled motion.
The setpoint takes effect after the slave receives the displacement reference.

6083h Profile acceleration

Hex:	6083h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s^2
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:
0 to 4294967295
Description

Defines the acceleration rate in the acceleration stage of the displacement reference in the profile position mode.
The following formula applies if a motor equipped with 23-bit encoder needs to run at 400 RPM (6081h: 400 x 8388608/60) with acceleration rate being 400 RPM/ s (6083h: 400 x 8388608/60) and deceleration rate being 200 RPM/s (6084h: 200 x 8388608/60) under a gear ratio of 1:1:
Acceleration time tup = Δ6081h/ Δ6083h = 1 (s); Deceleration time tdown = Δ6081h/ Δ6084h = 2 (s).

6084h Profile deceleration

Hex:	6084h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:
0 to 4294967295
Description
Defines the deceleration rate in the deceleration stage of the displacement reference in the profile position mode.
The following formula applies if a motor equipped with 23-bit encoder needs to run at 400 RPM (6081h: 400 x 8388608/60) with acceleration rate being 400 RPM/ s (6083h: 400 x 8388608/60) and deceleration rate being 200 RPM/s (6084h: 200 x 8388608/60) under a gear ratio of 1:1:
Acceleration time tup = Δ6081h/ Δ6083h = 1 (s); Deceleration time tdown = Δ6081h/ Δ6084h = 2 (s).

6085h Quick stop deceleration

Hex:	6085h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	2147483647	Change:	Real-time

Value Range:
0 to 4294967295
Description
Defines the deceleration rate when the quick stop command (6040h = 0x0002) is active and 605Ah (Quick stop option code) is set to 2 or 5.

6087h Torque slope

Hex:	6087h	Effective mode:	Real time
Min.:	0	Unit:	0.1%/s
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0–4294967295

Description

It sets the rate of change of torque in profile torque mode, in unit of torque increment per second.

In the profile torque mode, if 605Ah is set to 1, 2, 5, or 6, or 605Dh is set to 1 or 2, the servo drive decelerates to stop as defined by 6087h.

If the value exceeds the torque reference limit, the servo drive runs at the limit.

6091.01h Motor resolution

Hex:	6091-01h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	1	Change:	At stop

Value Range:

1–4294967295

Description

Defines the numerator of the gear ratio.

Defines the proportional relation between the load shaft displacement designated by the user and the motor shaft displacement.

The relation between motor position feedback (encoder unit) and load shaft position feedback (reference unit) is as follows.

Motor position feedback = Load shaft position feedback x Gear ratio

The relation between the motor speed (RPM) and the load shaft speed (reference unit/s) is as follows:

Motor speed (RPM) = Load shaft speed * 6091h * 60/Encoder resolution

The motor acceleration (RPM/ms) and the load shaft acceleration (reference unit/s2) is in the following relationship:

Motor acceleration (RPM/ms) = Load shaft acceleration * 6091h * 1000 / Encoder resolution / 60

6091.02h Shaft resolution

Hex:	6091-02h	Effective mode:	Real time

Min.:	1	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	1	Change:	At stop

Value Range:

1–4294967295

Description

Defines the denominator of the gear ratio.

6098h Homing method

Hex:	6098h	Effective mode:	Real time
Min.:	-3	Unit:	-
Max.:	35	Data Type:	Int8
Default:	1	Change:	Real-time

Value Range:

-3–35

Description

Table 2–5 Description of homing method

Value	Description
-3	Nearby, Z signal as home
-2	Forward, positive mechanical limit as deceleration point and Z signal as home
-1	Reverse, negative mechanical limit as deceleration point and Z signal as home
1	Reverse, negative limit switch as deceleration point and Z signal as home, falling edge of the negative limit switch signal must be reached before Z signal
2	Forward, positive limit switch as deceleration point and Z signal as home, falling edge of positive limit switch signal must be reached before Z signal
3	Forward, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
4	Forward, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
5	Reverse, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
6	Reverse, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
7	Forward, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
8	Forward, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
9	Forward, home switch as deceleration point and Z signal as home, rising edge on the other side of the home switch signal must be reached before Z signal

Value	Description
10	Forward, home switch as deceleration point and Z signal as home, falling edge on the other side of the home switch signal must be reached before Z signal
11	Reverse, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
12	Reverse, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
13	Reverse, home switch as deceleration point and Z signal on the other side of the home switch signal as home, rising edge on the other side of the home switch signal must be reached before Z signal
14	Reverse, home switch as deceleration point and Z signal on the other side of the home switch signal as home, falling edge on the other side of the home switch signal must be reached before Z signal
17–32	Similar to setpoints 1...14 except that the deceleration point coincide with the home
33	Reverse, Z signal as home
34	Forward, Z signal as home
35	Current position as home
When 6098h is set to 15, 16, 31 or 32, it is meaningless and the servo drive does not perform the homing operation.	

6099.01h Speed during search for switch

Hex:	6099-01h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	111848106	Change:	At stop

Value Range:

0 to 4294967295

Description

Defines the speed during search for the deceleration point signal. A large setpoint helps prevent E601.0 (Homing timeout).

6099.02h Speed during search for zero

Hex:	6099-02h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	11184810	Change:	At stop

Value Range:

0 to 4294967295

Description

Defines the speed in searching for the home signal. Setting this speed to a low value prevents overshoot during stop at high speed, avoiding excessive deviation between the stop position and the set mechanical home.

609Ah Homing acceleration

Hex:	609Ah	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s^2
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

It sets the acceleration during the homing operation.

60B8h Touch probe function

Hex:	60B8h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

See the following table for descriptions of each bit of 60B8h.

bit	Name	Description
0	Touch probe 1 function selection 0: Probe 1 disabled 1: Probe 1 enabled	Bit0 to bit5: settings related to probe 1 When a DI is used to trigger the touch probe function, the DI source cannot be changed once the touch probe function is enabled. For absolute encoders, Z signal refers to the zero point of the single-turn position feedback.
1	Touch probe 1 trigger mode 0: Single trigger mode (Latches the position at the first trigger event.) 1: Continuous trigger mode	
2	Touch probe 1 trigger signal selection 0: DI signal 1: Z signal	
3	N/A	
4	Touch probe 1 positive edge 0: Latching at positive edge disabled 1: Latching at positive edge enabled	
5	Touch probe 1 negative edge 0: Latching at negative edge disabled 1: Latching at negative edge enabled	
6–7	N/A	-
8	Touch probe 2 function selection 0: Probe 2 disabled 1: Probe 2 enabled	Bit8 to bit13: settings related to probe 2
9	Touch probe 2 trigger mode 0: Single trigger mode (Latches the position at the first trigger event.) 1: Continuous trigger mode	
10	Touch probe 2 trigger signal selection 0: DI signal 1: Z signal	
11	N/A	
12	Touch probe 2 positive edge 0: Latching at positive edge disabled 1: Latching at positive edge enabled	
13	Touch probe 2 negative edge 0: Latching at negative edge disabled 1: Latching at negative edge enabled	
14–15	N/A	-

60B9h Touch probe status

Hex:	60B9h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Defines the functions of touch probe 1 and touch probe 2.

See the following table for descriptions of each bit of 60B9h.

bit	Name	Description
0	Touch probe 1 function selection 0: Probe 1 disabled 1: Probe 1 enabled	Bit0 to bit2: Status of probe 1
1	Touch probe 1 positive edge value 0: No positive edge value latched 1: Edge value latched	
2	Touch probe 1 negative edge value 0: No negative edge value latched 1: Negative edge value latched	
3–5	N/A	-
6–7	When the function of probe 1 is selected as continuous sampling, the total number of times the probe is triggered	When the function of probe 1 is selected as continuous sampling, the total number of times (0–3) the probe is triggered
8	Probe 2 enable: 0: Probe 2 disabled 1: Probe 2 enabled	Bit8 to bit10: Status of probe 2
9	Touch probe 2 positive edge value 0: No positive edge value latched 1: Edge value latched	
10	Touch probe 2 negative edge value 0: No negative edge value latched 1: Negative edge value latched	
11–13	N/A	-
14–15	When the function of probe 2 is selected as continuous sampling, the total number of times the probe is triggered	When the function of probe 2 is selected as continuous sampling, the total number of times (0–3) the probe is triggered

60BAh Touch probe 1 positive edge position value

Hex:	60BAh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at positive edge of touch probe 1 signal.

60BBh Touch probe 1 negative edge position value

Hex:	60BBh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at negative edge of touch probe 1 signal.

60BCh Touch probe 2 positive edge position value

Hex:	60BCh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at positive edge of touch probe 2 signal.

60BDh Touch probe 2 negative edge position value

Hex:	60BDh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at negative edge of touch probe 2 signal.

60C1.01h Interpolation displacement

Hex:	60C1-01h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the displacement reference in the interpolation mode.

In interpolation mode, 60C1.01h must be set to synchronize PDO and the transmission type must be set to 1.

The host controller will send a displacement reference to the slave upon every synchronization cycle.

60C2.01h Interpolation time period

Hex:	60C2-01h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

1–20

Description

Defines the interpolation time units.

The allowed sync period range is 1 ms to 20 ms. When a value beyond this range is set, the setpoint is used as the sync period.

The synchronization cycle must be set after the servo drive stops running.

60C2.02h Interpolation time units

Hex:	60C2-02h	Effective mode:	Real time
Min.:	-3	Unit:	-
Max.:	-3	Data Type:	Int8
Default:	-3	Change:	Real-time

Value Range:

-3–-3

Description

Defines the interpolation period time unit.

The value "–3" indicates the unit ms. Therefore, the actual interpolation period (ms) is the value of 60C2.01h.

60C5h **Max. acceleration**

Hex:	60C5h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the maximum permissible acceleration rate of the acceleration segment in the profile position mode, profile velocity mode, and homing mode.
The setpoint 0 will be forcibly changed to 1.

60C6h **Max. deceleration**

Hex:	60C6h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the maximum permissible deceleration in the profile position mode, profile velocity mode, and homing mode.
The setpoint 0 will be forcibly changed to 1.

60D5h **Touch probe 1 positive edge counter**

Hex:	60D5h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "1" each time this object is triggered.

60D6h **Touch probe 1 negative edge counter**

Hex:	60D6h	Effective mode:	-
Min.:	0	Unit:	-

Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "1" each time this object is triggered.

60D7h Touch probe 2 positive edge counter

Hex:	60D7h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "2" each time this object is triggered.

60D8h Touch probe 2 negative edge counter

Hex:	60D8h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "2" each time this object is triggered.

60E0h Positive torque limit

Hex:	60E0h	Effective mode:	Real time
Min.:	0	Unit:	0.001
Max.:	4000	Data Type:	UInt16
Default:	3500	Change:	Real-time

Value Range:

0–4000

Description

It sets the maximum positive torque in the motor.

60E1h Negative torque limit

Hex:	60E1h	Effective mode:	Real time
Min.:	0	Unit:	0.001
Max.:	4000	Data Type:	UInt16
Default:	3500	Change:	Real-time

Value Range:

0–4000

Description

It sets the maximum negative torque in the motor.

60F4h Position deviation

Hex:	60F4h	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position deviation (reference unit).

60FCh Position reference

Hex:	60FCh	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Indicates the position reference (encoder unit).

If no alarm is detected when the S-ON signal is active, the relation between the position reference in reference unit and that in encoder unit is as follows:

60FCh (in encoder unit) = 6062h (in reference unit) x 6091h

60FDh DI state

Hex:	60FDh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0–4294967295
Description
Indicates current DI logic of the drive.
0: Inactive
1: Active
The signal indicated by each bit is described as follows:

bit	Function
0	Reverse overtravel active
1	Forward overtravel active
2	Home signal active
3–15	N/A
16	DI1 input active
17	DI2 input active
18	DI3 input active
19	DI4 input active
20	DI5 input active
21	DI6 input active
22	DI7 input active
23	DI8 input active
24–26	N/A
27	STO1 signal input
28	STO2 signal input
29	EDM output active
30	Z signal active
31	N/A

60FFh **PV target velocity**

Hex:	60FFh	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit/s
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
–2147483648 to +2147483647
Description
Defines the target speed in the profile velocity mode.

60FE.01h Physical output

Hex:	60FE-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

Indicates the DO logic.

The signal indicated by each bit is described as follows:

Description of bits

bit	Description
0–15	N/A
16	Forced DO1 output (0: OFF; 1: ON) only when function 31 is assigned to DO and bit 16 of 60FE.02h is set to 1
17	Forced DO2 output (0: OFF; 1: ON) only when function 31 is assigned to DO and bit 17 of 60FE.02h is set to 1
18	Forced DO3 output (0: OFF; 1: ON) only when function 31 is assigned to DO and bit 18 of 60FE.02h is set to 1
19	Forced DO4 output (0: OFF; 1: ON) only when function 31 is assigned to DO and bit 19 of 60FE.02h is set to 1
20	Forced DO5 output (0: OFF; 1: ON) only when function 31 is assigned to DO and bit 20 of 60FE.02h is set to 1
21–25	N/A
26	Switched between P and PI for gain switchover only when bit 26 of 60FE.02h is set to 1
27–31	N/A

60FE.02h Bitmask

Hex:	60FE-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

0 to 15: N/A
16: Forced DO1 output enable
17: Forced DO2 output enable
18: Forced DO3 output enable
19: Forced DO4 output enable
20: Forced DO5 output enable
19 to 25: N/A
26: P/PI switchover enable
27 to 31: N/A

3 Parameter List [N]

The mapping relation between the parameter displayed on the keypad (in decimal) and the object dictionary operated by the host controller (in hexadecimal, "Index" and "Sub-index") is as follows.

Object dictionary index = 0x2000 + Parameter group number

Object dictionary sub-index = Hexadecimal offset within the parameter group + 1 For example:

Panel Display	Object dictionary operated by the host controller
H02.15	2002.10h

Note

The following section only describes the display and parameter settings on the keypad side (in decimal), which are different from those displayed in the software tool (in hexadecimal). Make necessary value conversions during use.

3.1 H00 Servo Motor Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H00.00	2000-01h	Motor SN	20000: Linear motor - pulse encoder 14202: Linear motor - Inovance 23-bit encoder 20001: DDR motor - pulse encoder 14201: DDR motor - Inovance communication 23-bit encoder 20002: Rotary motor - pulse encoder 14000: Rotary motor - Inovance communication 20-bit encoder 14101: Rotary motor - Inovance communication 23-bit encoder 14020: Rotary motor - Harmonic 20-bit encoder - 2.5M baud rate 14021: Rotary motor - Harmonic 17-bit encoder - 2.5M baud rate 14022: Rotary motor - Harmonic 17-bit encoder - 4M baud rate 14120: Rotary motor - Nikon 20-bit encoder - 2.5M baud rate 14121: Rotary motor - Nikon 17-bit encoder - 2.5M baud rate 14122: Rotary motor - Nikon 17-bit encoder - 4M baud rate 14130: Rotary motor - TAMAGAWA 17-bit encoder 14131: Rotary motor - TAMAGAWA 23-bit encoder	14101	-	At stop	" H00_en.00" on page 640
H00.02	2000-03h	Customized No.	0.00–4294967295.00	0.00	-	Unchangeable	" H00_en.02" on page 641
H00.04	2000-05h	Encoder version	0.0–6553.5	0.0	-	Unchangeable	" H00_en.04" on page 641
H00.05	2000-06h	Serial-type motor code	0–65535	0	-	Unchangeable	" H00_en.05" on page 641

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H00.06	2000-07h	FPGA customized SN	0.00–655.35	0.00	-	Unchangeable	*" H00_en.06" on page 641*
H00.07	2000-08h	STO version	0.0–655.4	0.0	-	Unchangeable	*" H00_en.07" on page 642*
H00.08	2000-09h	Bus encoder type	0–65535	0	-	At stop	*" H00_en.08" on page 642*
H00.40	2000-29h	Motor control type	0: General-purpose rotary motor (ROT) 1: Direct drive rotary motor (DDR) 2: Direct drive linear motor (DDL) 3: Voice coil motor (VOL)	2	-	Real-time	*" H00_en.40" on page 642*
H00.45	2000-2Eh	Encoder pitch 1	0.01[mm]/[deg]–655.35[mm]/[deg]	2.00	[mm]/[deg]	At stop	*" H00_en.45" on page 643*
H00.46	2000-2Fh	Encoder pitch 2	0.01[mm]/[deg]–655.35[mm]/[deg]	0.50	[mm]/[deg]	At stop	*" H00_en.46" on page 643*
H00.48	2000-31h	Linear motor pole pitch (N-S)	0.00 millimeters–655.35 millimeters	16.00	mm	At stop	*" H00_en.48" on page 643*
H00.49	2000-32h	Direct drive motor encoder resolution	0.000um/p–65.535um/p	1.000	um/p	At stop	*" H00_en.49" on page 644*
H00.55	2000-38h	Rated torque	0.00[N]/[N·m]–42949672.95[N]/[N·m]	2.00	[N]/[N·m]	At stop	*" H00_en.55" on page 644*
H00.57	2000-3Ah	Max. torque	0.00[N]/[N·m]–42949672.95[N]/[N·m]	7.00	[N]/[N·m]	At stop	*" H00_en.57" on page 644*
H00.59	2000-3Ch	Encoder counting direction	0: Forward 1: Reverse	0	-	At stop	*" H00_en.59" on page 644*

3.2 H01 Servo Drive Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H01.00	2001-01h	MCU software version	0.0–6553.5	0.0	-	Unchangeable	*" H01_en.00" on page 645*
H01.01	2001-02h	FPGA software version	0.0–6553.5	0.0	-	Unchangeable	*" H01_en.01" on page 645*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H01.02	2001-03h	Servo drive series No.	0–65535	0	-	Unchangeable	" H01_en.02" on page 645
H01.06	2001-07h	Board software version	0.0–6553.5	0.0	-	Unchangeable	" H01_en.06" on page 646
H01.10	2001-0Bh	Drive series No.	2: S1R6 3: S2R8 5: S5R5 6: S7R6 7: S012 8: S018 9: S022 10: S027 10001: T3R5 10002: T5R4 10003: T8R4 10004: T012 10005: T017 10006: T021 10007: T026	3	-	At stop	" H01_en.10" on page 646
H01.11	2001-0Ch	DC-AC voltage class	0 V–65535 V	220	V	Unchangeable	" H01_en.11" on page 646
H01.12	2001-0Dh	Drive rated power	0.00 kW–10737418.24kW	0.40	kW	Unchangeable	" H01_en.12" on page 647
H01.14	2001-0Fh	Max. output power of the drive	0.00 kW–10737418.24kW	0.40	kW	Unchangeable	" H01_en.14" on page 647
H01.16	2001-11h	Rated output current of the drive	0.00 A to 10737418.24 A	2.80	A	Unchangeable	" H01_en.16" on page 647
H01.18	2001-13h	Max. output current of the drive	0.00 A to 10737418.24 A	10.10	A	Unchangeable	" H01_en.18" on page 647
H01.40	2001-29h	DC bus overvoltage protection threshold	0 V–2000 V	420	V	Real-time	" H01_en.40" on page 648
H01.75	2001-4Ch	Current loop amplification factor	0.00–655.35	1.00	-	Real-time	" H01_en.75" on page 648
H01.88	2001-59h	Junction temperature parameter version 1	0.0–6553.5	0.0	-	Unchangeable	" H01_en.88" on page 648

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H01.89	2001-5Ah	Junction temperature parameter version 2	0–65535	0	-	Unchangeable	" H01_en.89" on page 649
H01.90	2001-5Bh	Motor property mask	0–65535	0	-	At stop	" H01_en.90" on page 649

3.3 H02 Basic Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.00	2002-01h	Control mode	0: Velocity mode 1: Position mode 2: Torque mode 9: EtherCAT mode	9	-	At stop	" H02_en.00" on page 649
H02.01	2002-02h	Absolute system selection	0: Incremental mode 1: Absolute position linear mode 2: Absolute position rotation mode 3: Absolute position linear mode (without encoder overflow alarm) 4: Absolute position single-turn mode	0	-	At stop	" H02_en.01" on page 650
H02.02	2002-03h	Rotation direction selection	0: Counterclockwise (CCW) as forward direction 1: Clockwise (CW) as forward direction	0	-	At stop	" H02_en.02" on page 650
H02.03	2002-04h	Output pulse phase	0: Phase A leads phase B 1: Phase A lags behind phase B	0	-	At stop	" H02_en.03" on page 650

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.05	2002-06h	Stop mode at S-ON OFF	–4: Ramp to stop as defined by 6085h, keeping dynamic braking state –3: at zero speed, keeping dynamic braking state –2: Ramp to stop as defined by 6084h/609Ah (HM), keeping dynamic braking state –1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state 2: Dynamic braking stop, keeping de-energized state	0	-	Real-time	*" H02_en.05" on page 651*
H02.06	2002-07h	Stop mode at No. 2 fault	–5: Stop at zero speed, keeping dynamic braking state –4: Stop at emergency stop torque, keeping dynamic braking state –3: Ramp to stop as defined by 6085h, keeping dynamic braking state –2: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping dynamic braking state –1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping de-energized state 2: Ramp to stop as defined by 6085h, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 4: Dynamic braking stop, keeping de-energized state	2	-	Real-time	*" H02_en.06" on page 651*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.07	2002-08h	Stop mode at overtravel	0: Coast to stop, keeping de-energized state 1: Stop at zero speed, keeping position lock state 2: Stop at zero speed, keeping de-energized state 3: Stop based on ramp, keeping de-energized state 4: Stop based on ramp, keeping position lock state 5: Dynamic braking stop, keeping de-energized state 6: Dynamic braking stop, keeping dynamic braking state 7: Not responding to overtravel	1	-	At stop	" H02_en.07" on page 652
H02.08	2002-09h	Stop mode at No.1 fault	0: Coast to stop, keeping de-energized state 1: Dynamic braking stop, keeping de-energized state 2: Dynamic braking stop, keeping dynamic braking state	2	-	At stop	" H02_en.08" on page 652
H02.09	2002-0Ah	Delay from brake output ON to command received	0 ms–500 ms	250	ms	Real-time	" H02_en.09" on page 653
H02.10	2002-0Bh	Delay from brake output OFF to motor de-energized	50 ms–1000 ms	150	ms	Real-time	" H02_en.10" on page 653
H02.11	2002-0Ch	Motor speed threshold at brake output OFF in rotation state	20 rpm to 3000 rpm	30	RPM	Real-time	" H02_en.11" on page 653
H02.12	2002-0Dh	Delay from S-ON OFF to brake output OFF in rotation state	1 ms–65535 ms	500	ms	Real-time	" H02_en.12" on page 654
H02.15	2002-10h	LED Alarm Display	0: Output alarm information immediately 1: Not output alarm information	0	-	Real-time	" H02_en.15" on page 654

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.17	2002-12h	Stop mode upon main circuit power failure	0: Keep current action 1: Stop upon fault as defined by H02.06 2: Stop at S-ON OFF as defined by H02.05 3: Stop quickly as defined by H02.18	2	-	Real-time	" H02_en.17" on page 654
H02.18	2002-13h	Quick stop mode	0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state 2: Ramp to stop as defined by 6085h, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 5: Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock state 6: Ramp to stop as defined by 6085h, keeping position lock state 7: Stop at emergency stop torque, keeping position lock state	2	-	Real-time	" H02_en.18" on page 655
H02.21	2002-16h	Permissible minimum resistance of braking resistor	1Ω to 1000Ω	40	Ω	Unchangeable	" H02_en.21" on page 655
H02.22	2002-17h	Power of built-in braking resistor	0W–65535W	50	W	Unchangeable	" H02_en.22" on page 655
H02.23	2002-18h	Resistance of built-in braking resistor	0Ω to 65535Ω	50	Ω	Unchangeable	" H02_en.23" on page 656
H02.24	2002-19h	Resistor heat dissipation coefficient	10% to 100%	30	%	Real-time	" H02_en.24" on page 656
H02.25	2002-1Ah	Braking resistor type	0: Built-in 1: External, natural cooling 2: External, forced air cooling 3: No resistor needed	3	-	Real-time	" H02_en.25" on page 656
H02.26	2002-1Bh	Power of external braking resistor	1 W–65535W	40	W	Real-time	" H02_en.26" on page 657

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H02.27	2002-1Ch	Resistance of external braking resistor	15Ω to 1000Ω	50	Ω	Real-time	" H02_en.27" on page 657
H02.28	2002-1Dh	Parameters Initialization	0: Parameters in group H02 and above initialized 1: Parameters in group H00, H02 and above initialized 2: All parameters initialized (default values used for model-related parameters)	0	-	At stop	" H02_en.28" on page 657
H02.30	2002-1Fh	User password	0–65535	0	-	Real-time	" H02_en.30" on page 658
H02.31	2002-20h	System parameter initialization	0: No operation 1: Restore default settings 2: Clear fault records	0	-	At stop	" H02_en.31" on page 658
H02.32	2002-21h	Selection of parameters in group H0b	0–99	50	-	Real-time	" H02_en.32" on page 658
H02.35	2002-24h	Keypad data update frequency	0 Hz–20 Hz	0	Hz	Real-time	" H02_en.35" on page 659
H02.38	2002-27h	Overload time of external resistor	0s to 200s	40	s	Real-time	" H02_en.38" on page 659
H02.41	2002-2Ah	Manufacturer password	0–65535	0	-	Real-time	" H02_en.41" on page 659
H02.47	2002-30h	Delay time from power cable breakage to brake OFF	0 ms–1000 ms	10	ms	Real-time	" H02_en.47" on page 659

3.4 H03 Terminal Input Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H03.02	2003-03h	DI1 function	0: Undefined 1: Servo enabled 2: Alarm reset signal 5: Multi-run reference direction selection 6: Multi-run reference switching CMD1 7: Multi-run reference switching CMD2 8: Multi-run reference switching CMD3 9: Multi-run reference switching CMD4 14: Positive limit switch 15: Negative limit switch 18: Forward jog 19: Reverse jog 24: Electronic gear selection 28: Multi-position reference enabled 31: Home switch 34: Emergency stop 38: Probe 1 39: Probe 2 40: Multi-speed enabled	14	-	Real-time	*"H03_en.02" on page 660*
H03.03	2003-04h	DI1 logic selection	0: Normally open 1: Closed	0	-	Real-time	*"H03_en.03" on page 660*
H03.04	2003-05h	DI2 function	See H03.02.	15	-	Real-time	*"H03_en.04" on page 661*
H03.05	2003-06h	DI2 logic selection	0: Normally open 1: Closed	0	-	Real-time	*"H03_en.05" on page 661*
H03.06	2003-07h	DI3 function	See H03.02.	31	-	Real-time	*"H03_en.06" on page 661*
H03.07	2003-08h	DI3 logic selection	0: Normally open 1: Closed	0	-	Real-time	*"H03_en.07" on page 662*
H03.08	2003-09h	DI4 function	See H03.02.	34	-	Real-time	*"H03_en.08" on page 662*
H03.09	2003-0Ah	DI4 logic selection	0: Normally open 1: Closed	0	-	Real-time	*"H03_en.09" on page 662*
H03.10	2003-0Bh	DI5 function	See H03.02.	38	-	Real-time	*"H03_en.10" on page 662*
H03.11	2003-0Ch	DI5 logic selection	0: Normally open 1: Closed	0	-	Real-time	*"H03_en.11" on page 663*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H03.50	2003-33h	Voltage-type AI1 offset	-5000 mV–5000 mV	0	mV	Real-time	*"H03_en.50" on page 663*
H03.51	2003-34h	Voltage-type AI1 input filter time constant	0.00 ms–655.35 ms	2.00	ms	Real-time	*"H03_en.51" on page 663*
H03.53	2003-36h	Voltage-type AI1 dead zone	0.0 mV–1000.0 mV	10.0	mV	Real-time	*"H03_en.53" on page 664*
H03.54	2003-37h	Voltage-type AI1 zero drift	-500.0 mV–500.0 mV	0.0	mV	Real-time	*"H03_en.54" on page 664*
H03.55	2003-38h	Voltage-type AI2 offset	-5000 mV–5000 mV	0	mV	Real-time	*"H03_en.55" on page 664*
H03.56	2003-39h	Voltage-type AI2 input filter time constant	0.00 ms–655.35 ms	2.00	ms	Real-time	*"H03_en.56" on page 664*
H03.58	2003-3Bh	Voltage-type AI2 dead zone	0.0 mV–1000.0 mV	10.0	mV	Real-time	*"H03_en.58" on page 665*
H03.59	2003-3Ch	Voltage-type AI2 zero drift	-500.0 mV–500.0 mV	0.0	mV	Real-time	*"H03_en.59" on page 665*
H03.60	2003-3Dh	DI1 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*"H03_en.60" on page 665*
H03.61	2003-3Eh	DI2 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*"H03_en.61" on page 666*
H03.62	2003-3Fh	DI3 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*"H03_en.62" on page 666*
H03.63	2003-40h	DI4 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*"H03_en.63" on page 666*
H03.64	2003-41h	DI5 fitter time	0.00 ms–500.00 ms	3.00	ms	Real-time	*"H03_en.64" on page 667*
H03.80	2003-51h	Speed corresponding to analog 10 V	0 rpm to 10000 rpm	3000	RPM	At stop	*"H03_en.80" on page 667*
H03.81	2003-52h	Torque corresponding to analog 10 V	0.00–8.00	1.00	-	At stop	*"H03_en.81" on page 667*

3.5 H04 Terminal Output Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H04.00	2004-01h	DO1 function	0: Undefined 1: Servo ready 2: Motor rotation signal 9: Braking 10: Warning 11: Failure 25: Comparison DO 26: Closed-loop state 31: Forced communication DO 32: EDM output	1	-	Real-time	*" H04_en.00" on page 668*
H04.01	2004-02h	DO1 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H04_en.01" on page 668*
H04.02	2004-03h	DO2 function	0: Undefined 1: Servo ready 2: Motor rotation signal 9: Braking 10: Warning 11: Failure 25: Comparison DO 26: Closed-loop state 31: Forced communication DO 32: EDM output	9	-	Real-time	*" H04_en.02" on page 668*
H04.03	2004-04h	DO2 logic selection	0: Normally open 1: Closed	0	-	Real-time	*" H04_en.03" on page 669*
H04.22	2004-17h	DO source selection	Bit0: DO1 output source 0: DO1 function output 1: Bit0 of H31.04 Bit1: DO2 output source 0: DO2 function output 1: Bit1 of H31.04	0	-	Real-time	*" H04_en.22" on page 669*
H04.23	2004-18h	ECAT communication-forced DO logic in non-OP status	Bit0: DO1 0: Maintain output 1: No output Bit1: DO2 0: Maintain output 1: No output	0	-	Real-time	*" H04_en.23" on page 670*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H04.50	2004-33h	AO1 signal selection	0: Motor speed (1 V/1000 rpm) 1: Speed reference (1 V/1000 rpm) 2: Torque reference (1 V/100 x rated torque) 3: Position deviation (0.5 mV/1 reference unit) 4: Position deviation (0.5 mV/1 encoder unit) 5: Position reference speed (1 V/1000 rpm) 6: Positioning completed 8: AI1 voltage 9: AI2 voltage 10: Defined by H31.05	0	-	Real-time	"H04_en.50" on page 670
H04.51	2004-34h	AO1 offset voltage	-10000 mV–10000 mV	0	mV	Real-time	"H04_en.51" on page 671
H04.52	2004-35h	AO1 ratio	-99.99–99.99	1.00	-	Real-time	"H04_en.52" on page 671

3.6 H05 Position Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.00	2005-01h	Primary position reference source	2: Multi-position reference	2	-	Real-time	"H05_en.00" on page 671
H05.02	2005-03h	Pulses per revolution	0 PPR to 4294967295 PPR	0	PPR	At stop	"H05_en.02" on page 671
H05.04	2005-05h	First-order low-pass filter time constant	0.0 ms–6553.5 ms	0.0	ms	At stop	"H05_en.04" on page 672
H05.06	2005-07h	Moving average filter time constant 1	0.0 ms–128.0 ms	0.0	ms	At stop	"H05_en.06" on page 672
H05.07	2005-08h	Electronic gear ratio 1 (numerator)	1–1073741824	1	-	Real-time	"H05_en.07" on page 672
H05.09	2005-0Ah	Electronic gear ratio 1 (denominator)	1–1073741824	1	-	Real-time	"H05_en.09" on page 673

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.11	2005-0Ch	Electronic gear ratio 2 (numerator)	1–1073741824	1	-	Real-time	" H05_en.11" on page 673
H05.13	2005-0Eh	Electronic gear ratio 2 (denominator)	1–1073741824	1	-	Real-time	" H05_en.13" on page 673
H05.16	2005-11h	Clear action	0: Position deviation cleared upon S-ON OFF or fault 1: Position deviation cleared upon S-ON OFF or fault 2: Position deviation cleared upon active DI function 35 or non-operational state	0	-	At stop	" H05_en.16" on page 673
H05.17	2005-12h	Number of encoder frequency-division pulses	0 PPR to 4194303 PPR	2500	PPR	At stop	" H05_en.17" on page 674
H05.19	2005-14h	Speed feedforward control	0: No speed feedforward 1: Internal speed feedforward 2: H05.72 3: Zero phase	1	-	At stop	" H05_en.19" on page 674
H05.21	2005-16h	Threshold of positioning completed	1 to 65535	46976	Encoder unit	Real-time	" H05_en.21" on page 674
H05.22	2005-17h	Proximity threshold	1 to 65535	65535	Encoder unit	Real-time	" H05_en.22" on page 675
H05.30	2005-1Fh	Homing enable selection	0: Disabled 6: Current position	0	-	Real-time	" H05_en.30" on page 675
H05.35	2005-24h	Home search time limit	0–65535	10000	-	Real-time	" H05_en.35" on page 675
H05.36	2005-25h	Mechanical home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	" H05_en.36" on page 676
H05.38	2005-27h	Frequency-division output source	0: Encoder frequency-division output 2: Frequency-division output inhibited 3: Second encoder frequency-division output 4: H31.01 reference frequency output	0	-	Real-time	" H05_en.38" on page 676
H05.39	2005-28h	Electronic gear ratio switchover condition	0: Switchover after position reference is kept 0 for 2.5 ms 1: Switched in real time	0	-	At stop	" H05_en.39" on page 676

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.40	2005-29h	Mechanical home offset and action upon overtravel	0: H05.36 as the coordinate after homing, reverse homing applied after homing triggered again on overtravel 1: H05.36 as the relative offset after homing, reverse homing applied after homing triggered again on overtravel 2: H05.36 as the coordinate after homing, reverse homing auto-applied on overtravel 3: H05.36 as the relative offset after homing, reverse homing auto-applied on overtravel	0	-	Real-time	" H05_en.40" on page 677
H05.41	2005-2Ah	Z pulse output polarity	bit0: Frequency-division Z output polarity 0: Positive (high level upon active Z pulse) 1: Negative (low level upon active Z pulse) bit1: OCZ output polarity 0: Positive (high level upon active Z pulse) 1: Negative (low level upon active Z pulse) bit2: Inner loop probe Z signal source 0: Motor Z signal 1: Frequency-division output Z signal	1	-	At stop	" H05_en.41" on page 677
H05.44	2005-2Dh	Numerator of frequency-division output reduction ratio	1–16383	1	-	At stop	" H05_en.44" on page 678
H05.45	2005-2Eh	Denominator of frequency-division output reduction ratio	1–8191	1	-	At stop	" H05_en.45" on page 678
H05.46	2005-2Fh	DI selection of multi-turn frequency-division Z starting point	0: No operation 1: DI1 2: DI2 3: DI3 4: DI4 5: DI5	0	-	Real-time	" H05_en.46" on page 678
H05.47	2005-30h	Frequency-division Z pulse width	0 us to 400 us	0	us	Real-time	" H05_en.47" on page 679

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.48	2005-31h	Frequency-division output dead zone setting threshold	0–255	0	-	Real-time	" H05_en.48" on page 679
H05.50	2005-33h	Mechanical gear ratio in absolute position rotation mode (numerator)	1–65535	1	-	At stop	" H05_en.50" on page 679
H05.51	2005-34h	Mechanical gear ratio in absolute position rotation mode (denominator)	1–65535	1	-	At stop	" H05_en.51" on page 679
H05.52	2005-35h	Pulses per revolution of the load in absolute position rotation mode (low 32 bits)	0 to 4294967295	0	Encoder unit	At stop	" H05_en.52" on page 680
H05.54	2005-37h	Pulses per revolution of the load in absolute position rotation mode (high 32 bits)	0 to 4294967295	0	Encoder unit	At stop	" H05_en.54" on page 680
H05.58	2005-3Bh	Torque threshold in homing upon hit-and-stop	0.0% to 400.0%	100.0	%	Real-time	" H05_en.58" on page 680
H05.60	2005-3Dh	Hold time of positioning completed	0 ms–30000 ms	0	ms	Real-time	" H05_en.60" on page 681
H05.66	2005-43h	Homing time unit	0: 1 ms 1: 10 ms 2: 100 ms	2	-	At stop	" H05_en.66" on page 681

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H05.71	2005-48h	Motor Z signal width	1 ms–100 ms	4	ms	Real-time	" H05_en.71" on page 682
H05.72	2005-49h	External speed feedforward source selection	0: 60B1 1: AI1 2: AI2	0	-	Real-time	" H05_en.72" on page 682

3.7 H06 Speed Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.00	2006-01h	Source of main speed reference A	0: Digital setting (H06.03) 1: AI1 2: AI2	0	-	At stop	" H06_en.00" on page 682
H06.01	2006-02h	Source of auxiliary speed reference B	0: Digital setting (H06.03) 1: AI1 2: AI2 5: Multi-speed reference	1	-	At stop	" H06_en.01" on page 683
H06.02	2006-03h	Speed reference source	0: Source of main speed reference A 1: Source of auxiliary speed reference B 2: A+B 3: Switched between A and B 4: Communication	0	-	At stop	" H06_en.02" on page 683
H06.03	2006-04h	Speed reference set through keypad	-10000 rpm to +10000 rpm	200	RPM	Real-time	" H06_en.03" on page 683
H06.04	2006-05h	DI jog speed reference	0 rpm to 10000 rpm	150	RPM	Real-time	" H06_en.04" on page 684
H06.05	2006-06h	Acc. ramp time of speed reference	0 ms–65535 ms	0	ms	Real-time	" H06_en.05" on page 684
H06.06	2006-07h	Dec. ramp time of speed reference	0 ms–65535 ms	0	ms	Real-time	" H06_en.06" on page 685
H06.07	2006-08h	Maximum speed limit	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.07" on page 685
H06.08	2006-09h	Forward speed threshold	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.08" on page 685
H06.09	2006-0Ah	Reverse speed threshold	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.09" on page 685

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.10	2006-0Bh	Deceleration unit in emergency stop	0: Multiplied by 1 1: Multiplied by 10 2: Multiplied by 100	0	-	At stop	" H06_en.10" on page 686
H06.11	2006-0Ch	Torque feedforward control	0: No torque feedforward 1: Internal torque feedforward 2: 60B2h as external torque feedforward	1	-	Real-time	" H06_en.11" on page 686
H06.12	2006-0Dh	Acceleration ramp time of jog speed	0 ms–65535 ms	10	ms	Real-time	" H06_en.12" on page 686
H06.13	2006-0Eh	Speed feedforward smoothing filter	0us to 65535us	0	us	Real-time	" H06_en.13" on page 687
H06.15	2006-10h	Zero clamp speed threshold	0 rpm to 10000 rpm	10	RPM	Real-time	" H06_en.15" on page 687
H06.16	2006-11h	Threshold of TGON (motor rotation) signal	0 rpm to 1000 rpm	20	RPM	Real-time	" H06_en.16" on page 687
H06.17	2006-12h	Threshold of V-Cmp (speed matching) signal	0 RPM –100 RPM	10	RPM	Real-time	" H06_en.17" on page 687
H06.18	2006-13h	Threshold of speed reach signal	20 rpm to 10000 rpm	1000	RPM	Real-time	" H06_en.18" on page 688
H06.19	2006-14h	Threshold of zero speed output signal	1 rpm to 10000 rpm	10	RPM	Real-time	" H06_en.19" on page 688
H06.50	2006-33h	Speed S-curve enable switch	0: Disabled 1: Enabled	1	-	At stop	" H06_en.50" on page 688
H06.51	2006-34h	Increasing acceleration 1 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.51" on page 688
H06.52	2006-35h	Decreasing acceleration 1 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.52" on page 689

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.53	2006-36h	Decreasing deceleration 1 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.53" on page 689
H06.54	2006-37h	Decreasing acceleration 1 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.54" on page 689
H06.55	2006-38h	Increasing acceleration 2 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.55" on page 690
H06.56	2006-39h	Decreasing acceleration 2 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.56" on page 690
H06.57	2006-3Ah	Decreasing deceleration 2 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.57" on page 690
H06.58	2006-3Bh	Decreasing acceleration 2 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.58" on page 691
H06.59	2006-3Ch	Increasing acceleration 3 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.59" on page 691

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.60	2006-3Dh	Decreasing acceleration 3 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.60" on page 691
H06.61	2006-3Eh	Decreasing deceleration 3 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.61" on page 692
H06.62	2006-3Fh	Decreasing acceleration 3 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.62" on page 692
H06.63	2006-40h	Increasing acceleration 4 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.63" on page 692
H06.64	2006-41h	Decreasing acceleration 4 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.64" on page 693
H06.65	2006-42h	Decreasing deceleration 4 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.65" on page 693
H06.66	2006-43h	Decreasing acceleration 4 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.66" on page 693

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.67	2006-44h	Increasing acceleration 5 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.67" on page 694
H06.68	2006-45h	Decreasing acceleration 5 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.68" on page 694
H06.69	2006-46h	Decreasing deceleration 5 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.69" on page 694
H06.70	2006-47h	Decreasing acceleration 5 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.70" on page 695
H06.71	2006-48h	Increasing acceleration 6 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.71" on page 695
H06.72	2006-49h	Decreasing acceleration 6 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.72" on page 695
H06.73	2006-4Ah	Decreasing deceleration 6 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.73" on page 696

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.74	2006-4Bh	Decreasing acceleration 6 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.74" on page 696
H06.75	2006-4Ch	Increasing acceleration 7 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.75" on page 696
H06.76	2006-4Dh	Decreasing acceleration 7 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.76" on page 697
H06.77	2006-4Eh	Decreasing deceleration 7 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.77" on page 697
H06.78	2006-4Fh	Decreasing acceleration 7 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.78" on page 697
H06.79	2006-50h	Increasing acceleration 8 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.79" on page 698
H06.80	2006-51h	Decreasing acceleration 8 of speed S-curve acceleration segment	0.0% to 100.0%	50.0	%	At stop	" H06_en.80" on page 698

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H06.81	2006-52h	Decreasing deceleration 8 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.81" on page 698*
H06.82	2006-53h	Decreasing acceleration 8 of speed S-curve deceleration segment	0.0% to 100.0%	50.0	%	At stop	*" H06_en.82" on page 699*

3.8 H07 Torque Control Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H07.00	2007-01h	Source of main torque reference A	0: Keypad (H07.03) 1: AI1 2: AI2	0	-	At stop	*" H07_en.00" on page 699*
H07.01	2007-02h	Source of auxiliary torque reference B	0: Keypad (H07.03) 1: AI1 2: AI2	1	-	At stop	*" H07_en.01" on page 699*
H07.02	2007-03h	Torque reference source	0: Source of main torque reference A 1: Source of auxiliary torque reference B 2: Source of A+B 3: Switched between A and B 4: Communication	0	-	At stop	*" H07_en.02" on page 700*
H07.03	2007-04h	Torque reference set through keypad	-400.0% to 400.0%	0.0	%	Real-time	*" H07_en.03" on page 700*
H07.05	2007-06h	Torque reference filter time constant 1	0.00 ms–30.00 ms	0.50	ms	Real-time	*" H07_en.05" on page 700*
H07.06	2007-07h	Torque reference filter time constant 2	0.00 ms–30.00 ms	0.27	ms	Real-time	*" H07_en.06" on page 701*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H07.07	2007-08h	Torque Limit source	0: Positive/Negative internal torque limit 2: T_LMT limit	0	-	Real-time	*" H07_en.07" on page 701*
H07.08	2007-09h	T-LMT selection	1: AI1 2: AI2	1	-	Real-time	*" H07_en.08" on page 701*
H07.09	2007-0Ah	Positive internal torque limit	0.0% to 400.0%	350.0	%	Real-time	*" H07_en.09" on page 701*
H07.10	2007-0Bh	Negative internal torque limit	0.0% to 400.0%	350.0	%	Real-time	*" H07_en.10" on page 702*
H07.11	2007-0Ch	Positive external torque limit	0.0% to 400.0%	350.0	%	Real-time	*" H07_en.11" on page 702*
H07.12	2007-0Dh	Negative external torque limit	0.0% to 400.0%	350.0	%	Real-time	*" H07_en.12" on page 702*
H07.15	2007-10h	Emergency-stop torque	0.0% to 400.0%	100.0	%	Real-time	*" H07_en.15" on page 703*
H07.18	2007-13h	V-LMT selection	1: AI1 2: AI2	1	-	Real-time	*" H07_en.18" on page 703*
H07.19	2007-14h	Positive speed limit/Speed limit 1 in torque control	0 rpm to 10000 rpm	3000	RPM	Real-time	*" H07_en.19" on page 703*
H07.20	2007-15h	Negative speed limit/Speed limit 2 in torque control	0 rpm to 10000 rpm	3000	RPM	Real-time	*" H07_en.20" on page 703*
H07.21	2007-16h	Torque reach base value	0.0% to 400.0%	0.0	%	Real-time	*" H07_en.21" on page 704*
H07.22	2007-17h	Torque reach valid value	0.0% to 400.0%	20.0	%	Real-time	*" H07_en.22" on page 704*
H07.23	2007-18h	Torque reach invalid value	0.0% to 400.0%	10.0	%	Real-time	*" H07_en.23" on page 704*
H07.24	2007-19h	Field weakening depth	60% to 115%	115	%	Real-time	*" H07_en.24" on page 704*
H07.25	2007-1Ah	Max. permissible demagnetizing current	0% to 300%	100	%	Real-time	*" H07_en.25" on page 705*
H07.26	2007-1Bh	Field weakening selection	0: Disabled 1: Enabled	0	-	At stop	*" H07_en.26" on page 705*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H07.27	2007-1Ch	Flux weakening gain	0.001 Hz–1.000 Hz	0.030	Hz	Real-time	*" H07_en.27" on page 705*
H07.28	2007-1Dh	Speed of flux weakening point	0–65535	0	-	Unchangeable	*" H07_en.28" on page 706*
H07.35	2007-24h	Torque non-standard feature enable	bit0: Motor output correction enable bit1: Shield compensation data enable	0	-	At stop	*" H07_en.35" on page 706*
H07.36	2007-25h	Time constant of low-pass filter 2	0.00 ms–10.00 ms	0.00	ms	Real-time	*" H07_en.36" on page 706*
H07.37	2007-26h	Torque reference filter selection	0: First-order filter 1: Biquad filter	0	-	Real-time	*" H07_en.37" on page 706*
H07.38	2007-27h	Biquad filter attenuation ratio	0–50	16	-	Real-time	*" H07_en.38" on page 707*
H07.40	2007-29h	Speed limit threshold in torque control mode	0 ms–300 ms	10	ms	Real-time	*" H07_en.40" on page 707*
H07.42	2007-2Bh	Biquad low pass filter damping coefficient	0.001–10.000	1.000	-	Real-time	*" H07_en.42" on page 707*

3.9 H08 Gain Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H08.00	2008-01h	Speed loop gain	0.0 Hz–2000.0 Hz	40.0	Hz	Real-time	*" H08_en.00" on page 708*
H08.01	2008-02h	Speed loop integral time constant	0.15 ms–512.00 ms	19.89	ms	Real-time	*" H08_en.01" on page 708*
H08.02	2008-03h	Position loop gain	0.0 Hz–2000.0 Hz	64.0	Hz	Real-time	*" H08_en.02" on page 708*
H08.03	2008-04h	2nd speed loop gain	0.1 Hz–2000.0 Hz	75.0	Hz	Real-time	*" H08_en.03" on page 709*
H08.04	2008-05h	2nd speed loop integral time constant	0.15 ms–512.00 ms	10.61	ms	Real-time	*" H08_en.04" on page 709*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H08.05	2008-06h	2nd position loop gain	0.1 Hz–2000.0 Hz	120.0	Hz	Real-time	" H08_en.05" on page 709
H08.08	2008-09h	2nd gain mode setting	0: Fixed to the 1st gain, switched between P and PI as defined by bit26 of external 60FEh 1: Switched between the 1st and 2nd gain sets as defined by H08.09	1	-	Real-time	" H08_en.08" on page 710
H08.09	2008-0Ah	Gain switchover condition	0: Fixed to the 1st gain set (PS) 1: Switched as defined by bit26 of 60FEh 2: Torque reference too large (PS) 3: Speed reference too large (PS) 4: Speed reference change rate too large (PS) 5: Speed reference low/high speed threshold (PS) 6: Position deviation too large (P) 7: Position reference available (P) 8: Positioning unfinished (P) 9: Actual speed (P) 10: Position reference + Actual speed (P)	0	-	Real-time	" H08_en.09" on page 710
H08.10	2008-0Bh	Gain switchover delay	0.0 ms–1000.0 ms	5.0	ms	Real-time	" H08_en.10" on page 710
H08.11	2008-0Ch	Gain switchover level	0–20000	50	-	Real-time	" H08_en.11" on page 711
H08.12	2008-0Dh	Gain switchover hysteresis	0–20000	30	-	Real-time	" H08_en.12" on page 711
H08.13	2008-0Eh	Position gain switchover time	0.0 ms–1000.0 ms	3.0	ms	Real-time	" H08_en.13" on page 711
H08.15	2008-10h	Load moment of inertia ratio	0.00–120.00	1.00	-	Real-time	" H08_en.15" on page 712
H08.17	2008-12h	Zero phase delay	0.0 ms–4.0 ms	0.0	ms	Real-time	" H08_en.17" on page 712

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H08.18	2008-13h	Time constant of speed feedforward filter	0.00 ms–64.00 ms	0.50	ms	Real-time	*" H08_en.18" on page 712*
H08.19	2008-14h	Speed feedforward gain	0.0% to 100.0%	0.0	%	Real-time	*" H08_en.19" on page 713*
H08.20	2008-15h	Torque feedforward filter time constant	0.00 ms–64.00 ms	0.50	ms	Real-time	*" H08_en.20" on page 713*
H08.21	2008-16h	Torque feedforward gain	0.0% to 300.0%	0.0	%	Real-time	*" H08_en.21" on page 713*
H08.22	2008-17h	Speed feedback filtering option	0: Inhibited 1: 2 times 2: 4 times 3: 8 times 4: 16 times	0	-	At stop	*" H08_en.22" on page 714*
H08.23	2008-18h	Cutoff frequency of speed feedback low-pass filter	100 Hz–8000 Hz	8000	Hz	Real-time	*" H08_en.23" on page 714*
H08.24	2008-19h	PDFF control coefficient	0.0% to 200.0%	100.0	%	Real-time	*" H08_en.24" on page 715*
H08.27	2008-1Ch	Speed observer cutoff frequency	50 Hz–600 Hz	170	Hz	Real-time	*" H08_en.27" on page 715*
H08.28	2008-1Dh	Speed observer inertia correction coefficient	1% to 1600%	100	%	Real-time	*" H08_en.28" on page 716*
H08.29	2008-1Eh	Speed observer filter time	0.00 ms–10.00 ms	0.80	ms	Real-time	*" H08_en.29" on page 716*
H08.31	2008-20h	Disturbance cutoff frequency	1 Hz–4000 Hz	600	Hz	Real-time	*" H08_en.31" on page 716*
H08.32	2008-21h	Disturbance compensation gain	0% to 100%	0	%	Real-time	*" H08_en.32" on page 717*
H08.33	2008-22h	Disturbance observer inertia correction coefficient	1% to 1600%	100	%	Real-time	*" H08_en.33" on page 717*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H08.37	2008-26h	Phase modulation for medium-frequency jitter suppression 2	-90° to 90°	0	°	Real-time	" H08_en.37" on page 717
H08.38	2008-27h	Medium-frequency suppression 2 frequency	0 Hz–1000 Hz	0	Hz	Real-time	" H08_en.38" on page 717
H08.39	2008-28h	Compensation gain of medium-frequency jitter suppression 2	0% to 300%	0	%	Real-time	" H08_en.39" on page 718
H08.40	2008-29h	Speed observer selection	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.40" on page 718
H08.42	2008-2Bh	Model control selection	0: Disabled 1: Enabled 2: Reserved	0	-	Real-time	" H08_en.42" on page 718
H08.43	2008-2Ch	Model gain	0.1–2000.0	40.0	-	Real-time	" H08_en.43" on page 719
H08.46	2008-2Fh	Feedforward value	0.0–102.4	95.0	-	Real-time	" H08_en.46" on page 719
H08.53	2008-36h	Medium- and low-frequency jitter suppression frequency 3	0.0 Hz–300.0 Hz	0.0	Hz	Real-time	" H08_en.53" on page 719
H08.54	2008-37h	Medium- and low-frequency jitter suppression compensation 3	0% to 200%	0	%	Real-time	" H08_en.54" on page 720
H08.56	2008-39h	Medium- and low-frequency jitter suppression phase modulation 3	0% to 600%	100	%	Real-time	" H08_en.56" on page 720
H08.59	2008-3Ch	Medium- and low-frequency jitter suppression frequency 4	0.0 Hz–300.0 Hz	0.0	Hz	Real-time	" H08_en.59" on page 720

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H08.60	2008-3Dh	Medium- and low-frequency jitter suppression compensation 4	0% to 200%	0	%	Real-time	" H08_en.60" on page 720
H08.61	2008-3Eh	Medium- and low-frequency jitter suppression phase modulation 4	0% to 600%	100	%	Real-time	" H08_en.61" on page 721
H08.62	2008-3Fh	Position loop integral time constant	0.15–512.00	512.00	-	Real-time	" H08_en.62" on page 721
H08.63	2008-40h	2nd position loop integral time constant	0.15–512.00	512.00	-	Real-time	" H08_en.63" on page 721
H08.64	2008-41h	Speed observer feedback source	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.64" on page 722
H08.65	2008-42h	Zero deviation control selection	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.65" on page 722
H08.66	2008-43h	Zero deviation control position average filter	0.0 ms–320.0 ms	5.0	ms	Real-time	" H08_en.66" on page 722
H08.68	2008-45h	Speed feedforward of zero deviation control	0.0% to 100.0%	100.0	%	Real-time	" H08_en.68" on page 722
H08.69	2008-46h	Torque feedforward of zero deviation control	0.0% to 100.0%	100.0	%	Real-time	" H08_en.69" on page 723
H08.90	2008-5Bh	Encoder scale spacing ripple suppressor enable	0: Inhibited 1: 1st group activated only-adaptive mode 2: 1st group activated only-hysteresis mode 3: Two groups activated-adaptive mode 4: Two groups activated-hysteresis mode	0	-	Real-time	" H08_en.90" on page 723

3.10 H09 Auto-tuning Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.00	2009-01h	Auto-adjustment mode	0: Disabled, manual gain tuning required 1: Enabled, gain parameters generated automatically based on the stiffness level 2: Positioning mode, gain parameters generated automatically based on the stiffness level 3: Interpolation mode+Inertia auto-tuning 4: Normal mode+Inertia auto-tuning 6: Quick positioning mode+Inertia auto-tuning	4	-	Real-time	" H09_en.00" on page 724
H09.01	2009-02h	Stiffness level selection	0–41	15	-	Real-time	" H09_en.01" on page 724
H09.02	2009-03h	Adaptive notch mode	0: Adaptive notch no longer updated 1: One adaptive notch activated (3rd notch) 2: Two adaptive notches activated (3rd and 4th notches) 3: Resonance point tested only (displayed in H09.24) 4: Adaptive notch cleared, values of 3rd and 4th notches restored to default	3	-	Real-time	" H09_en.02" on page 724
H09.03	2009-04h	Online inertia auto-tuning mode	0: Disabled 1: Enabled, changing slowly 2: Enabled, changing normally 3: Enabled, changing quickly	2	-	Real-time	" H09_en.03" on page 725
H09.05	2009-06h	Offline inertia auto-tuning mode	0: Bi-directional 1: Unidirectional	0	-	At stop	" H09_en.05" on page 725
H09.06	2009-07h	Max. speed of inertia auto-tuning	100 RPM to 1000 RPM	500	RPM	At stop	" H09_en.06" on page 725
H09.07	2009-08h	Time constant for accelerating to max. speed during inertia auto-tuning	20 ms–800 ms	125	ms	At stop	" H09_en.07" on page 726

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.08	2009-09h	Interval time after an individual inertia auto-tuning	50 ms–10000 ms	800	ms	At stop	*" H09_en.08" on page 726*
H09.09	2009-0Ah	Number of motor revolutions per inertia auto-tuning	0.00–100.00	1.00	-	Real-time	*" H09_en.09" on page 726*
H09.11	2009-0Ch	Vibration threshold	0.0% to 100.0%	5.0	%	Real-time	*" H09_en.11" on page 727*
H09.12	2009-0Dh	Frequency of the 1st notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.12" on page 727*
H09.13	2009-0Eh	Width level of the 1st notch	0–20	2	-	Real-time	*" H09_en.13" on page 727*
H09.14	2009-0Fh	Depth level of the 1st notch	0–99	0	-	Real-time	*" H09_en.14" on page 728*
H09.15	2009-10h	Frequency of the 2nd notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.15" on page 728*
H09.16	2009-11h	Width level of the 2nd notch	0–20	2	-	Real-time	*" H09_en.16" on page 728*
H09.17	2009-12h	Depth level of the 2nd notch	0–99	0	-	Real-time	*" H09_en.17" on page 729*
H09.18	2009-13h	Frequency of the 3rd notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.18" on page 729*
H09.19	2009-14h	Width level of the 3rd notch	0–20	2	-	Real-time	*" H09_en.19" on page 729*
H09.20	2009-15h	Depth level of the 3rd notch	0–99	0	-	Real-time	*" H09_en.20" on page 729*
H09.21	2009-16h	Frequency of the 4th notch	50 Hz–8000 Hz	8000	Hz	Real-time	*" H09_en.21" on page 730*
H09.22	2009-17h	Width level of the 4th notch	0–20	2	-	Real-time	*" H09_en.22" on page 730*
H09.23	2009-18h	Depth level of the 4th notch	0–99	0	-	Real-time	*" H09_en.23" on page 730*
H09.24	2009-19h	Auto-tuned resonance frequency	0 Hz–5000 Hz	0	Hz	Unchangeable	*" H09_en.24" on page 730*
H09.32	2009-21h	Gravity compensation value	-100.0% to 100.0%	0.0	%	Real-time	*" H09_en.32" on page 731*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.33	2009-22h	Positive friction compensation value	0.0% to 100.0%	0.0	%	Real-time	" H09_en.33" on page 731
H09.34	2009-23h	Negative friction compensation value	-100.0% to 0.0%	0.0	%	Real-time	" H09_en.34" on page 731
H09.35	2009-24h	Friction compensation speed	0.0–20.0	2.0	-	Real-time	" H09_en.35" on page 732
H09.36	2009-25h	Friction compensation speed	0: Slow mode+Speed reference 1: Slow mode+Model speed 2: Slow mode+Speed feedback 3: Slow mode+Observe speed 16: Quick mode +Speed reference 17: Quick mode +Model speed 18: Quick mode +Speed feedback 19: Quick mode+Observe speed	0	-	Real-time	" H09_en.36" on page 732
H09.37	2009-26h	Vibration monitoring time	0–65535	300	-	Real-time	" H09_en.37" on page 732
H09.38	2009-27h	Frequency of low-frequency resonance suppression 1 at the mechanical end	1.0 Hz–100.0 Hz	100.0	Hz	Real-time	" H09_en.38" on page 733
H09.39	2009-28h	Low-frequency resonance suppression 1 at the mechanical end	0–3	2	-	At stop	" H09_en.39" on page 733
H09.44	2009-2Dh	Frequency of low-frequency resonance suppression 2 at mechanical load end	0.0–100.0	0.0	-	Real-time	" H09_en.44" on page 733

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.45	2009-2Eh	Responsiveness of low-frequency resonance suppression 2 at mechanical load end	0.01–10.00	1.00	-	Real-time	" H09_en.45" on page 734
H09.47	2009-30h	Width of low-frequency resonance suppression 2 at mechanical load end	0.00–2.00	1.00	-	Real-time	" H09_en.47" on page 734
H09.49	2009-32h	Frequency of low-frequency resonance suppression 3 at mechanical load end	0.0–100.0	0.0	-	Real-time	" H09_en.49" on page 734
H09.50	2009-33h	Responsiveness of low-frequency resonance suppression 3 at mechanical load end	0.01–10.00	1.00	-	Real-time	" H09_en.50" on page 734
H09.52	2009-35h	Width of low-frequency resonance suppression 3 at mechanical load end	0.00–2.00	1.00	-	Real-time	" H09_en.52" on page 735
H09.54	2009-37h	Resonance detection torque threshold	0.0% to 300.0%	50.0	%	Real-time	" H09_en.54" on page 735
H09.56	2009-39h	Max. overshoot allowed by ETune	0–65535	2936	-	Real-time	" H09_en.56" on page 735
H09.57	2009-3Ah	STune resonance suppression switchover frequency	0 Hz–4000 Hz	650	Hz	Real-time	" H09_en.57" on page 736

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H09.58	2009-3Bh	STune resonance suppression reset selection	0: Disabled 1: Enabled	0	-	Real-time	" H09_en.58" on page 736
H09.71	2009-48h	Starting frequency	0 Hz–8000 Hz	15	Hz	Real-time	" H09_en.71" on page 736
H09.72	2009-49h	End frequency	0 Hz–8000 Hz	8000	Hz	Real-time	" H09_en.72" on page 736
H09.73	2009-4Ah	Frequency subdivision	0–500	50	-	Real-time	" H09_en.73" on page 737
H09.74	2009-4Bh	Excitation amplitude	0.0% to 400.0%	15.0	%	Real-time	" H09_en.74" on page 737
H09.75	2009-4Ch	Starting frequency 2	0 Hz–8000 Hz	500	Hz	Real-time	" H09_en.75" on page 737
H09.76	2009-4Dh	Frequency subdivision 2	0–1000	500	-	Real-time	" H09_en.76" on page 738
H09.77	2009-4Eh	Biquad filter mode	0: Disabled 1: First-order low-pass 2: Second-order low-pass 3: Notch 4: Lead-lag 5: User-defined	0	-	Real-time	" H09_en.77" on page 738
H09.78	2009-4Fh	Biquad filter numerator frequency	0 Hz–16000 Hz	16000	Hz	Real-time	" H09_en.78" on page 738
H09.79	2009-50h	Biquad filter numerator damping coefficient	0.001–10.000	1.000	-	Real-time	" H09_en.79" on page 738
H09.80	2009-51h	Biquad filter denominator frequency	0 Hz–16000 Hz	8000	Hz	Real-time	" H09_en.80" on page 739
H09.81	2009-52h	Biquad filter denominator damping coefficient	0.001–10.000	1.000	-	Real-time	" H09_en.81" on page 739

3.11 H0A Fault and Protection Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.00	200A-01h	Power input phase loss and failure protection	0: Enable 1: Disable	0	-	Real-time	*" H0A_en.00" on page 739*
H0A.01	200A-02h	Absolute position limit	0: Disabled 1: Enabled 2: Enabled after homing	0	-	Real-time	*" H0A_en.01" on page 740*
H0A.04	200A-05h	Motor overload protection gain	50–300	100	-	Real-time	*" H0A_en.04" on page 740*
H0A.08	200A-09h	Overspeed threshold	0rpm to 20000rpm	0	RPM	Real-time	*" H0A_en.08" on page 740*
H0A.10	200A-0Bh	Threshold of excessive local position deviation	0 to 4294967295	27486951	Encoder unit	Real-time	*" H0A_en.10" on page 741*
H0A.12	200A-0Dh	Runaway protection enable	0: Disable 1: Enable	1	-	Real-time	*" H0A_en.12" on page 741*
H0A.13	200A-0Eh	Angle auto-tuning mode	0: pre-positioning 1: Inching 6: Static hall 8: Closed-loop pre-positioning 9: Position locking	0	-	At stop	*" H0A_en.13" on page 741*
H0A.18	200A-13h	IGBT over-temperature threshold	120°C–175°C	140	°C	Real-time	*" H0A_en.18" on page 742*
H0A.19	200A-14h	Filter time constant of touch probe 1	0.00us–6.30us	2.00	us	Real-time	*" H0A_en.19" on page 742*
H0A.20	200A-15h	Filter time constant of touch probe 2	0.00us–6.30us	2.00	us	Real-time	*" H0A_en.20" on page 742*
H0A.21	200A-16h	STO function display selection	0–7	0	-	Real-time	*" H0A_en.21" on page 743*
H0A.23	200A-18h	TZ signal filter time	0–31	15	25ns	At stop	*" H0A_en.23" on page 743*
H0A.25	200A-1Ah	Speed display DO low-pass filter time	0 ms–5000 ms	0	ms	At stop	*" H0A_en.25" on page 743*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.26	200A-1Bh	Motor overload detection	0: Show motor overload alarm (E909.0) and fault (E620.0) 1: Hide motor overload alarm (E909.0) and fault (E620.0)	0	-	Real-time	" H0A_en.26" on page 744
H0A.27	200A-1Ch	Average filter time for speed display DO	0 ms–100 ms	50	ms	At stop	" H0A_en.27" on page 744
H0A.29	200A-1Eh	Fully closed-loop encoder (ABZ) filter time	bit0: Fully closed loop encoder (ABZ) pulse signal filtering time bit8–bit15: Fully closed loop encoder (ABZ) wire breakage filter time	4111	25ns	At stop	" H0A_en.29" on page 744
H0A.32	200A-21h	Time threshold for locked motor overheat protection	10 ms–65535 ms	200	ms	Real-time	" H0A_en.32" on page 745
H0A.33	200A-22h	Locked motor overheat protection	0: Disabled 1: Enabled	1	-	Real-time	" H0A_en.33" on page 745
H0A.36	200A-25h	Encoder multi-turn overflow fault selection	0: Not hide 1: Hide	0	-	Real-time	" H0A_en.36" on page 745
H0A.40	200A-29h	Compensation function selection	bit0: Overtravel compensation 0: Enabled 1: Disabled bit1: Touch probe rising edge compensation 0: Disabled 1: Enabled bit2: Touch probe falling edge compensation 0: Disabled 1: Enabled bit3: Touch probe scheme 0: New scheme 1: Old scheme (same as SV660N) bit4: Probe 2 separate compensation time enable 0: Disabled 1: Enabled	6	-	At stop	" H0A_en.40" on page 746
H0A.41	200A-2Ah	Forward position of software position limit	-2147483648 to 2147483647	2147483647	Encoder unit	At stop	" H0A_en.41" on page 746

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.43	200A-2Ch	Reverse position of software position limit	-2147483648 to 2147483647	-2147483648	Encoder unit	At stop	*" H0A_en.43" on page 747*
H0A.49	200A-32h	Braking resistor overtemperature threshold	100°C–175°C	140	°C	Real-time	*" H0A_en.49" on page 747*
H0A.50	200A-33h	Encoder communication fault tolerance threshold	0–31	31	-	Real-time	*" H0A_en.50" on page 747*
H0A.51	200A-34h	Phase loss detection filter times	3–36	20	55ms	Real-time	*" H0A_en.51" on page 748*
H0A.52	200A-35h	Encoder temperature protection threshold	0°C–175°C	120	°C	Real-time	*" H0A_en.52" on page 748*
H0A.53	200A-36h	Probe DI ON compensation time	-3000–3000	200	25ns	Real-time	*" H0A_en.53" on page 748*
H0A.54	200A-37h	Probe DI OFF compensation time	-3000–3000	1512	25ns	Real-time	*" H0A_en.54" on page 749*
H0A.55	200A-38h	Runaway current threshold	100.0% to 400.0%	200.0	%	Real-time	*" H0A_en.55" on page 749*
H0A.56	200A-39h	Fault reset delay	0 ms–60000 ms	10000	ms	Real-time	*" H0A_en.56" on page 749*
H0A.57	200A-3Ah	Runaway speed threshold	1 rpm to 1000 rpm	50	RPM	Real-time	*" H0A_en.57" on page 749*
H0A.58	200A-3Bh	Runaway speed filter time	0.1 ms–100.0 ms	2.0	ms	Real-time	*" H0A_en.58" on page 750*
H0A.59	200A-3Ch	Runaway protection detection time	10 ms–1000 ms	30	ms	Real-time	*" H0A_en.59" on page 750*
H0A.60	200A-3Dh	Black box function mode	0: Disable 1: Any fault 2: Designated fault 3: Triggered based on designated condition	1	-	Real-time	*" H0A_en.60" on page 750*
H0A.61	200A-3Eh	Designated fault code	0.0–6553.5	0.0	-	Real-time	*" H0A_en.61" on page 751*
H0A.62	200A-3Fh	Trigger source	0–25	0	-	Real-time	*" H0A_en.62" on page 751*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.63	200A-40h	Trigger level	-2147483648–2147483647	0	-	Real-time	*" H0A_en.63" on page 751*
H0A.65	200A-42h	Trigger level	0: Rising edge 1: Equal 2: Falling edge 3: Edge-triggered	0	-	Real-time	*" H0A_en.65" on page 751*
H0A.66	200A-43h	Trigger position	0% to 100%	75	%	Real-time	*" H0A_en.66" on page 752*
H0A.67	200A-44h	Sampling frequency	0: Current loop 1: Position loop 2: Main cycle	0	-	Real-time	*" H0A_en.67" on page 752*
H0A.70	200A-47h	Overspeed threshold 2	0rpm to 20000rpm	0	RPM	Real-time	*" H0A_en.70" on page 752*
H0A.71	200A-48h	Internal function switch	0–65535	4098	-	Real-time	*" H0A_en.71" on page 753*
H0A.72	200A-49h	Maximum stop time in ramp-to-stop	0 ms–65535 ms	10000	ms	At stop	*" H0A_en.72" on page 754*
H0A.73	200A-4Ah	STO 24 V disconnection filter time	1 ms–5 ms	1	ms	Real-time	*" H0A_en.73" on page 754*
H0A.74	200A-4Bh	Filter time for two inconsistent STO channels	1 ms–1000 ms	100	ms	Real-time	*" H0A_en.74" on page 754*
H0A.75	200A-4Ch	Servo OFF delay after STO triggered	0 ms–25 ms	20	ms	Real-time	*" H0A_en.75" on page 755*
H0A.90	200A-5Bh	Speed display low-pass filter time	0 ms–100 ms	0	ms	At stop	*" H0A_en.90" on page 755*
H0A.91	200A-5Ch	Moving average filter time for torque display values	0 ms–100 ms	0	ms	At stop	*" H0A_en.91" on page 755*
H0A.92	200A-5Dh	Moving average filter time for position display values	0 ms–100 ms	0	ms	At stop	*" H0A_en.92" on page 755*
H0A.93	200A-5Eh	Low-pass filter time for voltage display values	0 ms–250 ms	0	ms	At stop	*" H0A_en.93" on page 756*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0A.94	200A-5Fh	Low-pass filter time for thermal display values	0 ms–250 ms	0	ms	At stop	*" H0A_en.94" on page 756*
H0A.95	200A-60h	Braking force detection enable	0: Not detected 1: Detected	0	-	At stop	*" H0A_en.95" on page 756*

3.12 H0b Monitoring Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.00	200b-01h	Motor speed actual value	-32767rpm to 32767rpm	0	RPM	Unchangeable	*" H0b_en.00" on page 757*
H0b.01	200b-02h	Speed reference	-32767rpm to 32767rpm	0	RPM	Unchangeable	*" H0b_en.01" on page 757*
H0b.02	200b-03h	Internal torque reference	-500.0% to 500.0%	0.0	%	Unchangeable	*" H0b_en.02" on page 757*
H0b.03	200b-04h	Input (DI) signal monitoring	0–65535	0	-	Unchangeable	*" H0b_en.03" on page 758*
H0b.05	200b-06h	Output (DO) signal monitoring	0–65535	0	-	Unchangeable	*" H0b_en.05" on page 758*
H0b.07	200b-08h	Absolute position counter	-2147483648p to 2147483647p	0	p	Unchangeable	*" H0b_en.07" on page 758*
H0b.09	200b-0Ah	Mechanical angle	0.0° to 360.0°	0.0	°	Unchangeable	*" H0b_en.09" on page 759*
H0b.10	200b-0Bh	Electrical angle	0.0° to 360.0°	0.0	°	Unchangeable	*" H0b_en.10" on page 759*
H0b.12	200b-0Dh	Average load ratio	0.0% to 800.0%	0.0	%	Unchangeable	*" H0b_en.12" on page 759*
H0b.15	200b-10h	Position following error (encoder unit)	-2147483648p to 2147483647p	0	p	Unchangeable	*" H0b_en.15" on page 760*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.17	200b-12h	Feedback pulse counter	-2147483648p to 2147483647p	0	p	Unchangeable	*" H0b_en.17" on page 760*
H0b.19	200b-14h	Total power-on time	0.0s to 655356553.5s	0.0	s	Unchangeable	*" H0b_en.19" on page 760*
H0b.21	200b-16h	Displayed AI1 voltage	-12.00 V–12.00 V	0.00	V	Unchangeable	*" H0b_en.21" on page 761*
H0b.22	200b-17h	Displayed AI2 voltage	-12.00 V–12.00 V	0.00	V	Unchangeable	*" H0b_en.22" on page 761*
H0b.24	200b-19h	Phase current RMS value	0.0 A–6553.5 A	0.0	A	Unchangeable	*" H0b_en.24" on page 761*
H0b.26	200b-1Bh	Bus voltage	0.0 V–6553.5 V	0.0	V	Unchangeable	*" H0b_en.26" on page 761*
H0b.27	200b-1Ch	Module temperature	-20°C–200°C	0	°C	Unchangeable	*" H0b_en.27" on page 762*
H0b.28	200b-1Dh	Absolute encoder fault information given by FPGA	0–65535	0	-	Unchangeable	*" H0b_en.28" on page 762*
H0b.29	200b-1Eh	Axis status information given by FPGA	0–65535	0	-	Unchangeable	*" H0b_en.29" on page 762*
H0b.30	200b-1Fh	Axis fault information given by FPGA	0–65535	0	-	Unchangeable	*" H0b_en.30" on page 763*
H0b.31	200b-20h	Encoder fault information	0–65535	0	-	Unchangeable	*" H0b_en.31" on page 763*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.33	200b-22h	Fault log	0: Present fault 1: Last fault 2: 2nd to last fault 3: 3rd to last fault 4: 4th to last fault 5: 5th to last fault 6: 6th to last fault 7: 7th to last fault 8: 8th to last fault 9: 9th to last fault 10: 10th to last fault 11: 11th to last fault 12: 12th to last fault 13: 13th to last fault 14: 14th to last fault 15: 15th to last fault 16: 16th to last fault 17: 17th to last fault 18: 18th to last fault 19: 19th to last fault	0	-	Real-time	*" H0b_en.33" on page 763*
H0b.34	200b-23h	Fault code of the selected fault	0–65535	0	-	Unchangeable	*" H0b_en.34" on page 764*
H0b.35	200b-24h	Timestamp of the selected fault	0.0s–429496729.5s	0.0	s	Unchangeable	*" H0b_en.35" on page 764*
H0b.37	200b-26h	Motor speed upon occurrence of the selected fault	-32767rpm to 32767rpm	0	RPM	Unchangeable	*" H0b_en.37" on page 765*
H0b.38	200b-27h	Motor phase U current upon occurrence of the selected fault	-3276.7 A–3276.7 A	0.0	A	Unchangeable	*" H0b_en.38" on page 765*
H0b.39	200b-28h	Motor phase V current upon occurrence of the selected fault	-3276.7 A–3276.7 A	0.0	A	Unchangeable	*" H0b_en.39" on page 765*
H0b.40	200b-29h	Bus voltage upon occurrence of the selected fault	0.0 V–6553.5 V	0.0	V	Unchangeable	*" H0b_en.40" on page 765*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.41	200b-2Ah	Input terminal state on selected fault	0–65535	0	-	Unchangeable	" H0b_en.41" on page 766
H0b.43	200b-2Ch	Output terminal status upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.43" on page 766
H0b.45	200b-2Eh	Internal fault code	0–65535	0	-	Unchangeable	" H0b_en.45" on page 766
H0b.46	200b-2Fh	Absolute encoder fault information given by FPGA upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.46" on page 767
H0b.47	200b-30h	System status information given by FPGA upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.47" on page 767
H0b.48	200b-31h	System fault information given by FPGA upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.48" on page 767
H0b.49	200b-32h	Encoder fault information upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.49" on page 767
H0b.51	200b-34h	Internal fault code upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.51" on page 768

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.52	200b-35h	FPGA timeout fault standard bit upon occurrence of the selected fault	0–65535	0	-	Unchangeable	" H0b_en.52" on page 768
H0b.53	200b-36h	Position following error (reference unit)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.53" on page 768
H0b.55	200b-38h	Motor speed actual value	-2147483648.0rpm to 2147483647.0rpm	0.0	RPM	Unchangeable	" H0b_en.55" on page 769
H0b.57	200b-3Ah	Control circuit bus voltage	0.0 V–6553.5 V	0.0	V	Unchangeable	" H0b_en.57" on page 769
H0b.58	200b-3Bh	Mechanical absolute position (low 32 bits)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.58" on page 769
H0b.60	200b-3Dh	Mechanical absolute position (high 32 bits)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.60" on page 769
H0b.63	200b-40h	NotRdy state	0: Normal 1: Control circuit error 2: Main circuit power input error 3: Bus undervoltage 4: Soft start failed 5: Encoder initialization undone 6: Short circuit to ground failed 7: Others 9: Fully closed-loop encoder initialization not completed	0	-	Unchangeable	" H0b_en.63" on page 770
H0b.66	200b-43h	Encoder temperature	-32768°C–32767°C	0	°C	Unchangeable	" H0b_en.66" on page 770
H0b.67	200b-44h	Load rate of braking resistor	0.0% to 200.0%	0.0	%	Unchangeable	" H0b_en.67" on page 771

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.70	200b-47h	Number of absolute encoder revolutions	-32768Rev to 32767Rev	0	Rev	Unchangeable	" H0b_en.70" on page 771
H0b.71	200b-48h	Single-turn position fed back by the absolute encoder	0p to 2147483647p	0	p	Unchangeable	" H0b_en.71" on page 771
H0b.74	200b-4Bh	System fault information given by FPGA	0–65535	0	-	Unchangeable	" H0b_en.74" on page 772
H0b.77	200b-4Eh	Encoder position (low 32 bits)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.77" on page 772
H0b.79	200b-50h	Encoder position (high 32 bits)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.79" on page 772
H0b.81	200b-52h	Single-turn position of the rotary load (low 32 bits)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.81" on page 772
H0b.83	200b-54h	Single-turn position of the rotary load (high 32 bits)	-2147483648p to 2147483647p	0	p	Unchangeable	" H0b_en.83" on page 773
H0b.85	200b-56h	Single-turn position of the rotary load (reference unit)	0p to 4294967295p	0	p	Unchangeable	" H0b_en.85" on page 773
H0b.87	200b-58h	IGBT junction temperature	0–200	0	-	Unchangeable	" H0b_en.87" on page 773
H0b.90	200b-5Bh	Group No. of the abnormal parameter	0–65535	0	-	Unchangeable	" H0b_en.90" on page 774
H0b.91	200b-5Ch	Offset within the group of the abnormal parameter	0–65535	0	-	Unchangeable	" H0b_en.91" on page 774
H0b.93	200b-5Eh	Closed loop state	0: Half closed loop 1: Fully closed loop	0	-	Unchangeable	" H0b_en.93" on page 774
H0b.94	200b-5Fh	Individual power-on time	0.0s–429496729.5s	0.0	s	Unchangeable	" H0b_en.94" on page 774

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0b.96	200b-61h	Individual power-on time upon occurrence of the selected fault	0.0s–429496729.5s	0.0	s	Unchangeable	"H0b_en.96" on page 775
H0b.98	200b-63h	Dynamic braking resistor load rate	0.0% to 200.0%	0.0	%	Unchangeable	"H0b_en.98" on page 775

3.13 H0C Fault and Protection Parameters 2

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0C.53	200C-36h	Probe DI ON compensation time 2	-3000–3000	200	25ns	Real-time	"H0C_en.53" on page 775
H0C.54	200C-37h	Probe DI OFF compensation time 2	-3000–3000	1512	25ns	Real-time	"H0C_en.54" on page 776
H0C.71	200C-48h	Internal function switch	0–65535	0	-	Real-time	"H0C_en.71" on page 776

3.14 H0d Auxiliary Function Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0d.00	200d-01h	Software Reset	0: No operation 1: Enable	0	-	At stop	"H0d_en.00" on page 776
H0d.01	200d-02h	Fault Reset	0: No operation 1: Enable	0	-	At stop	"H0d_en.01" on page 777
H0d.02	200d-03h	Inertia auto-tuning enable	0–65	0	-	Real-time	"H0d_en.02" on page 777
H0d.04	200d-05h	Read/write in encoder ROM	0: No operation 1: Write ROM 2: Read ROM 3: ROM failure	0	-	At stop	"H0d_en.04" on page 777
H0d.05	200d-06h	Emergency stop	0: No operation 1: Emergency stop	0	-	Real-time	"H0d_en.05" on page 778

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0d.06	200d-07h	Current loop auto-tuning test	0: No operation 1: Enable current loop auto-tuning 2: Enable current loop step test (static) 3: Enable current loop step test	0	-	At stop	" H0d_en.06" on page 778
H0d.10	200d-0Bh	Analog channel auto adjusting	0: No operation 1: Adjusted through AI1 2: Adjusted through AI2	0	-	At stop	" H0d_en.10" on page 778
H0d.12	200d-0Dh	Phase U/V current balance correction	0: Disabled 1: Enabled	0	-	At stop	" H0d_en.12" on page 779
H0d.17	200d-12h	Forced DI/DO enable switch	bit0: Forced DI enable switch 0: Disabled 1: Enabled bit1: Forced DO enable switch 0: Disabled 1: Enabled	0	-	Real-time	" H0d_en.17" on page 779
H0d.18	200d-13h	Forced DI value	0–31	31	-	Real-time	" H0d_en.18" on page 779
H0d.19	200d-14h	Forced DO value	0–3	0	-	Real-time	" H0d_en.19" on page 780
H0d.20	200d-15h	Absolute encoder reset	0: No operation 1: Reset fault 2: Reset fault and multi-turn data 3: Reset Inovance 2nd encoder fault 4: Reset Inovance 2nd encoder fault and multi-turn data	0	-	At stop	" H0d_en.20" on page 780
H0d.23	200d-18h	Motor cogging torque ripple auto-tuning enable	0: No auto-tuning 1: Enabled	0	-	At stop	" H0d_en.23" on page 780
H0d.29	200d-1Eh	Motor parameter auto-tuning	0: No operation 1: Enabled	0	-	At stop	" H0d_en.29" on page 781

3.15 H0E Communication Function Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.00	200E-01h	Node address	1–127	1	-	At stop	" H0E_en.00" on page 781
H0E.01	200E-02h	Save objects written through communication to e2prom	0: Not save 1: Save parameters 2: Save object dictionaries 3: Save parameters and object dictionaries 4: Save object dictionaries written before communication (OP) 255: Determine through H0E.03 and H0E.04	4	-	Real-time	" H0E_en.01" on page 781
H0E.03	200E-04h	Save objects written through software (commissioning protocol) to e2prom	0: Do not save 1: Save	1	-	Real-time	" H0E_en.03" on page 782
H0E.04	200E-05h	Save objects written through communication to e2prom (excluding commissioning protocol)	0: Do not save 1: Save	0	-	Real-time	" H0E_en.04" on page 782
H0E.07	200E-08h	Object dictionary unit selection	0: Reference unit system (p/s, p/s2) 1: User unit system (0.01 RPM, ms)	0	-	At stop	" H0E_en.07" on page 783
H0E.15	200E-10h	Select group 6000 index (last 2 bits)	0–255	255	-	Real-time	" H0E_en.15" on page 783
H0E.16	200E-11h	Select group 6000 sub-index	0–2	0	-	Real-time	" H0E_en.16" on page 783
H0E.20	200E-15h	EtherCAT slave name	0–65535	0	-	Unchangeable	" H0E_en.20" on page 783
H0E.21	200E-16h	EtherCAT slave alias	0–65535	0	-	At stop	" H0E_en.21" on page 784

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.22	200E-17h	Number of synchronous loss events allowed by EtherCAT	1–20	8	-	Real-time	" H0E_en.22" on page 784
H0E.24	200E-19h	Sync loss count	0–65535	0	-	Unchangeable	" H0E_en.24" on page 784
H0E.25	200E-1Ah	Max. error value and invalid frames of EtherCAT port 0 per unit time	0–65535	0	-	Unchangeable	" H0E_en.25" on page 785
H0E.26	200E-1Bh	Max. error value and invalid frames of EtherCAT port 1 per unit time	0–65535	0	-	Unchangeable	" H0E_en.26" on page 785
H0E.27	200E-1Ch	Max. transfer error of EtherCAT port per unit time	0–65535	0	-	Unchangeable	" H0E_en.27" on page 785
H0E.28	200E-1Dh	Max. EtherCAT data frame processing unit error per unit time	0–255	0	-	Unchangeable	" H0E_en.28" on page 785
H0E.29	200E-1Eh	Max. link loss value of EtherCAT port 0 per unit time	0–65535	0	-	Unchangeable	" H0E_en.29" on page 786
H0E.31	200E-20h	EtherCAT synchronization mode setting	0–3	2	-	At stop	" H0E_en.31" on page 786
H0E.32	200E-21h	EtherCAT synchronization error threshold	100 ns–8000 ns	4000	ns	At stop	" H0E_en.32" on page 786
H0E.33	200E-22h	EtherCAT state machine status and port connection status	0–65535	0	-	Unchangeable	" H0E_en.33" on page 786

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.34	200E-23h	Excessive CSP position command increment count	1–30	20	-	Real-time	" H0E_en.34" on page 787
H0E.35	200E-24h	AL fault code	0–65535	0	-	Unchangeable	" H0E_en.35" on page 787
H0E.36	200E-25h	EtherCAT enhanced link enable	0: Disabled 1: Enabled	0	-	Real-time	" H0E_en.36" on page 787
H0E.37	200E-26h	EtherCAT XML reset selection	0: Disabled 1: Enabled	0	-	Real-time	" H0E_en.37" on page 788
H0E.38	200E-27h	DC clock sync function tuning	0–65535	0	-	Real-time	" H0E_en.38" on page 788
H0E.73	200E-4Ah	EtherCAT port control mode and status display	0–65535	0	-	Unchangeable	" H0E_en.73" on page 788
H0E.80	200E-51h	Modbus baud rate	0: 300 bps 1: 600 bps 2: 1200 bps 3: 2400 bps 4: 4800 bps 5: 9600 bps 6: 19200 bps 7: 38400 bps 8: 57600 bps 9: 115200 bps	9	-	Real-time	" H0E_en.80" on page 788
H0E.81	200E-52h	Modbus data format	0: No parity, 2 stop bits (N-2) 1: Even parity, 1 stop bit (E-1) 2: Odd parity, 1 stop bit (O-1) 3: No parity, 1 stop bit (N-1)	3	-	Real-time	" H0E_en.81" on page 789
H0E.82	200E-53h	Modbus response delay	0 ms–20 ms	0	ms	Real-time	" H0E_en.82" on page 789
H0E.83	200E-54h	Modbus communication timeout	0 ms–600 ms	0	ms	Real-time	" H0E_en.83" on page 790
H0E.84	200E-55h	Sequence of Modbus communication data bits	0: High bits before low bits 1: Low bits before high bits	1	-	Real-time	" H0E_en.84" on page 790

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0E.90	200E-5Bh	Communication version	0.00–655.35	0.00	-	Unchangeable	*" H0E_en.90" on page 790*
H0E.96	200E-61h	XML version information	0.00–655.35	0.00	-	Unchangeable	*" H0E_en.96" on page 791*

3.16 H0F Fully Closed-loop Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0F.00	200F-01h	Encoder feedback mode	0: Internal encoder feedback 1: External encoder feedback 2: Inner/Outer loop switchover	0	-	Real-time	*" H0F_en.00" on page 791*
H0F.01	200F-02h	External encoder usage mode	0: Standard operating direction 1: Reverse operating direction	0	-	Real-time	*" H0F_en.01" on page 792*
H0F.04	200F-05h	External encoder pulses per revolution	0–2147483647	10000	-	At stop	*" H0F_en.04" on page 792*
H0F.08	200F-09h	Excessive deviation threshold in compound control mode	0–2147483647	1000	-	Real-time	*" H0F_en.08" on page 793*
H0F.10	200F-0Bh	Clear deviation in compound control mode	0 Rev to 100 Rev	1	Rev	Real-time	*" H0F_en.10" on page 793*
H0F.13	200F-0Eh	Compound vibration suppression filter time	0.0 ms–6553.5 ms	0.0	ms	At stop	*" H0F_en.13" on page 794*
H0F.16	200F-11h	Pulse deviation display in compound control mode	-2147483648 to 2147483647	0	Encoder unit	Unchangeable	*" H0F_en.16" on page 794*
H0F.18	200F-13h	Internal position pulse feedback display	-2147483648 to 2147483647	0	Encoder unit	Unchangeable	*" H0F_en.18" on page 795*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H0F.20	200F-15h	External position pulse feedback display	-2147483648 to 2147483647	0	Encoder unit	Unchangeable	" H0F_en.20" on page 795
H0F.22	200F-17h	External encoder phase Z detection invalid (quadrature pulse feedback)	0: Detected 1: Not detected	0	-	Real-time	" H0F_en.22" on page 795
H0F.25	200F-1Ah	Set the source of touch probe Z signal in fully closed-loop mode.	0: Motor Z signal 1: External feedback Z signal	0	-	Real-time	" H0F_en.25" on page 796
H0F.45	200F-2Eh	Positioning completed/ Position deviation threshold in fully closed-loop mode	0: Threshold scaled to outer loop unit 1: Same threshold used for inner and outer loops	0	-	At stop	" H0F_en.45" on page 796
H0F.46	200F-2Fh	Fully closed-loop speed feedback selection	0: Internal encoder feedback 1: External encoder feedback	0	-	At stop	" H0F_en.46" on page 796

3.17 H11 Multi-Position Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.00	2011-01h	Multi-position running mode	0: Single run (number of displacements selected in H11.01) 1: Cyclic operation (number of displacement selected in H11.01) 2: DI-based operation (selected by DI) 3: Sequential operation 5: Axis-controlled continuous operation	1	-	At stop	*" H11_en.00" on page 797*
H11.01	2011-02h	Number of displacement references in multi-position mode	1–16	1	-	At stop	*" H11_en.01" on page 800*
H11.02	2011-03h	Starting displacement No. after pause	0: Continue to execute the unexecuted displacements 1: Start from displacement 1	0	-	At stop	*" H11_en.02" on page 800*
H11.03	2011-04h	Interval time unit	0: ms 1: s	0	-	At stop	*" H11_en.03" on page 801*
H11.04	2011-05h	Displacement reference type	0: Relative displacement reference 1: Absolute displacement reference	0	-	Real-time	*" H11_en.04" on page 801*
H11.05	2011-06h	Starting displacement No. in sequential operation	0–16	0	-	At stop	*" H11_en.05" on page 802*
H11.09	2011-0Ah	Deceleration upon axis control OFF	0 ms–65535 ms	65535	ms	Real-time	*" H11_en.09" on page 802*
H11.10	2011-0Bh	Starting speed of displacement 1	0 rpm to 10000 rpm	0	RPM	Real-time	*" H11_en.10" on page 802*
H11.11	2011-0Ch	Stop speed of displacement 1	0 rpm to 10000 rpm	0	RPM	Real-time	*" H11_en.11" on page 803*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.12	2011-0Dh	Displacement 1	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.12" on page 803*
H11.14	2011-0Fh	Max. speed of displacement 1	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.14" on page 803*
H11.15	2011-10h	Acc/Dec time of displacement 1	0 ms–65535 ms	10	ms	Real-time	*" H11_en.15" on page 804*
H11.16	2011-11h	Interval time after displacement 1	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.16" on page 804*
H11.17	2011-12h	Displacement 2	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.17" on page 805*
H11.19	2011-14h	Max. speed of displacement 2	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.19" on page 805*
H11.20	2011-15h	Acc/Dec time of displacement 2	0 ms–65535 ms	10	ms	Real-time	*" H11_en.20" on page 805*
H11.21	2011-16h	Interval time after displacement 2	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.21" on page 806*
H11.22	2011-17h	Displacement 3	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.22" on page 806*
H11.24	2011-19h	Max. speed of displacement 3	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.24" on page 806*
H11.25	2011-1Ah	Acc/Dec time of displacement 3	0 ms–65535 ms	10	ms	Real-time	*" H11_en.25" on page 807*
H11.26	2011-1Bh	Interval time after displacement 3	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.26" on page 807*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.27	2011-1Ch	Displacement 4	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.27" on page 807*
H11.29	2011-1Eh	Max. speed of displacement 4	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.29" on page 807*
H11.30	2011-1Fh	Acc/Dec time of displacement 4	0 ms–65535 ms	10	ms	Real-time	*" H11_en.30" on page 808*
H11.31	2011-20h	Interval time after displacement 4	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.31" on page 808*
H11.32	2011-21h	Displacement 5	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.32" on page 808*
H11.34	2011-23h	Max. speed of displacement 5	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.34" on page 808*
H11.35	2011-24h	Acc/Dec time of displacement 5	0 ms–65535 ms	10	ms	Real-time	*" H11_en.35" on page 809*
H11.36	2011-25h	Interval time after displacement 5	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.36" on page 809*
H11.37	2011-26h	Displacement 6	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.37" on page 809*
H11.39	2011-28h	Max. speed of displacement 6	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.39" on page 810*
H11.40	2011-29h	Acc/Dec time of displacement 6	0 ms–65535 ms	10	ms	Real-time	*" H11_en.40" on page 810*
H11.41	2011-2Ah	Interval time after displacement 6	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.41" on page 810*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.42	2011-2Bh	Displacement 7	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.42" on page 810*
H11.44	2011-2Dh	Max. speed of displacement 7	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.44" on page 811*
H11.45	2011-2Eh	Acc/Dec time of displacement 7	0 ms–65535 ms	10	ms	Real-time	*" H11_en.45" on page 811*
H11.46	2011-2Fh	Interval time after displacement 7	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.46" on page 811*
H11.47	2011-30h	Displacement 8	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.47" on page 811*
H11.49	2011-32h	Max. speed of displacement 8	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.49" on page 812*
H11.50	2011-33h	Acc/Dec time of displacement 8	0 ms–65535 ms	10	ms	Real-time	*" H11_en.50" on page 812*
H11.51	2011-34h	Interval time after displacement 8	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.51" on page 812*
H11.52	2011-35h	Displacement 9	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.52" on page 813*
H11.54	2011-37h	Max. speed of displacement 9	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.54" on page 813*
H11.55	2011-38h	Acc/Dec time of displacement 9	0 ms–65535 ms	10	ms	Real-time	*" H11_en.55" on page 813*
H11.56	2011-39h	Interval time after displacement 9	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.56" on page 813*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.57	2011-3Ah	Displacement 10	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.57" on page 814*
H11.59	2011-3Ch	Max. speed of displacement 10	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.59" on page 814*
H11.60	2011-3Dh	Acc/Dec time of displacement 10	0 ms–65535 ms	10	ms	Real-time	*" H11_en.60" on page 814*
H11.61	2011-3Eh	Interval time after displacement 10	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.61" on page 814*
H11.62	2011-3Fh	Displacement 11	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.62" on page 815*
H11.64	2011-41h	Max. speed of displacement 11	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.64" on page 815*
H11.65	2011-42h	Acc/Dec time of displacement 11	0 ms–65535 ms	10	ms	Real-time	*" H11_en.65" on page 815*
H11.66	2011-43h	Interval time after displacement 11	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.66" on page 815*
H11.67	2011-44h	Displacement 12	-1073741824 to 1073741824	10000	Reference unit	Real-time	*" H11_en.67" on page 816*
H11.69	2011-46h	Max. speed of displacement 12	1 rpm to 10000 rpm	200	RPM	Real-time	*" H11_en.69" on page 816*
H11.70	2011-47h	Acc/Dec time of displacement 12	0 ms–65535 ms	10	ms	Real-time	*" H11_en.70" on page 816*
H11.71	2011-48h	Interval time after displacement 12	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	*" H11_en.71" on page 817*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.72	2011-49h	Displacement 13	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.72" on page 817
H11.74	2011-4Bh	Max. speed of displacement 13	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.74" on page 817
H11.75	2011-4Ch	Acc/Dec time of displacement 13	0 ms–65535 ms	10	ms	Real-time	" H11_en.75" on page 817
H11.76	2011-4Dh	Interval time after displacement 13	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.76" on page 818
H11.77	2011-4Eh	Displacement 14	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.77" on page 818
H11.79	2011-50h	Max. speed of displacement 14	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.79" on page 818
H11.80	2011-51h	Acc/Dec time of displacement 14	0 ms–65535 ms	10	ms	Real-time	" H11_en.80" on page 818
H11.81	2011-52h	Interval time after displacement 14	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.81" on page 819
H11.82	2011-53h	Displacement 15	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.82" on page 819
H11.84	2011-55h	Max. speed of displacement 15	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.84" on page 819
H11.85	2011-56h	Acc/Dec time of displacement 15	0 ms–65535 ms	10	ms	Real-time	" H11_en.85" on page 820
H11.86	2011-57h	Interval time after displacement 15	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.86" on page 820

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H11.87	2011-58h	Displacement 16	-1073741824 to 1073741824	10000	Reference unit	Real-time	" H11_en.87" on page 820
H11.89	2011-5Ah	Max. speed of displacement 16	1 rpm to 10000 rpm	200	RPM	Real-time	" H11_en.89" on page 820
H11.90	2011-5Bh	Acc/Dec time of displacement 16	0 ms–65535 ms	10	ms	Real-time	" H11_en.90" on page 821
H11.91	2011-5Ch	Interval time after displacement 16	0 ms(s) to 10000 ms(s)	10	ms (s)	Real-time	" H11_en.91" on page 821

3.18 H12 Multi-Speed Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.00	2012-01h	Multi-speed operation mode	0: Individual operation (number of speeds selected in H12.01) 1: Cyclic operation (number of speeds selected in H12.01) 2: DI-based operation	1	-	At stop	" H12_en.00" on page 821
H12.01	2012-02h	Number of speed references in multi-speed mode	1–16	16	-	At stop	" H12_en.01" on page 822
H12.02	2012-03h	Operating time unit	0: s 1: min	0	-	At stop	" H12_en.02" on page 822
H12.03	2012-04h	Acceleration time 1	0 ms–65535 ms	10	ms	Real-time	" H12_en.03" on page 823
H12.04	2012-05h	Deceleration time 1	0 ms–65535 ms	10	ms	Real-time	" H12_en.04" on page 823
H12.05	2012-06h	Acceleration time 2	0 ms–65535 ms	50	ms	Real-time	" H12_en.05" on page 823
H12.06	2012-07h	Deceleration time 2	0 ms–65535 ms	50	ms	Real-time	" H12_en.06" on page 824
H12.07	2012-08h	Acceleration time 3	0 ms–65535 ms	100	ms	Real-time	" H12_en.07" on page 824

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.08	2012-09h	Deceleration time 3	0 ms–65535 ms	100	ms	Real-time	*"H12_en.08" on page 824*
H12.09	2012-0Ah	Acceleration time 4	0 ms–65535 ms	150	ms	Real-time	*"H12_en.09" on page 825*
H12.10	2012-0Bh	Deceleration time 4	0 ms–65535 ms	150	ms	Real-time	*"H12_en.10" on page 825*
H12.20	2012-15h	1st speed reference	-10000 RPM to +10000 RPM	0	RPM	Real-time	*"H12_en.20" on page 825*
H12.21	2012-16h	Operating time of speed 1	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.21" on page 826*
H12.22	2012-17h	1st speed rise/drop and curve smoothing parameter time	bit0-bit7: Speed rise and drop time 0: Zero acc and dec time 1: Acc and dec time 1 2: Acc and dec time 2 3: Acc and dec time 3 4: Acc and dec time 4 bit8-bit15: S curve smoothing parameter 1: Smoothing parameter 1 2: Smoothing parameter 2 3: Smoothing parameter 3 4: Smoothing parameter 4 5: Smoothing parameter 5 6: Smoothing parameter 6 7: Smoothing parameter 7 8: Smoothing parameter 8	256	-	Real-time	*"H12_en.22" on page 826*
H12.23	2012-18h	Reference 2	-10000 RPM to +10000 RPM	100	RPM	Real-time	*"H12_en.23" on page 828*
H12.24	2012-19h	Operating time of speed 2	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.24" on page 829*
H12.25	2012-1Ah	2nd speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*"H12_en.25" on page 829*
H12.26	2012-1Bh	Reference 3	-10000 RPM to +10000 RPM	300	RPM	Real-time	*"H12_en.26" on page 829*
H12.27	2012-1Ch	Operating time of speed 3	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*"H12_en.27" on page 829*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.28	2012-1Dh	3nd speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.28" on page 830*
H12.29	2012-1Eh	Reference 4	-10000 RPM to +10000 RPM	500	RPM	Real-time	*" H12_en.29" on page 830*
H12.30	2012-1Fh	Operating time of speed 4	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.30" on page 830*
H12.31	2012-20h	4th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.31" on page 830*
H12.32	2012-21h	Reference 5	-10000 RPM to +10000 RPM	700	RPM	Real-time	*" H12_en.32" on page 831*
H12.33	2012-22h	Operating time of speed 5	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.33" on page 831*
H12.34	2012-23h	5th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.34" on page 831*
H12.35	2012-24h	Reference 6	-10000 RPM to +10000 RPM	900	RPM	Real-time	*" H12_en.35" on page 831*
H12.36	2012-25h	Operating time of speed 6	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.36" on page 832*
H12.37	2012-26h	6th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.37" on page 832*
H12.38	2012-27h	Reference 7	-10000 RPM to +10000 RPM	600	RPM	Real-time	*" H12_en.38" on page 832*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.39	2012-28h	Operating time of speed 7	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.39" on page 833*
H12.40	2012-29h	7th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.40" on page 833*
H12.41	2012-2Ah	Reference 8	-10000 RPM to +10000 RPM	300	RPM	Real-time	*" H12_en.41" on page 833*
H12.42	2012-2Bh	Operating time of speed 8	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.42" on page 833*
H12.43	2012-2Ch	8th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.43" on page 834*
H12.44	2012-2Dh	Reference 9	-10000 RPM to +10000 RPM	100	RPM	Real-time	*" H12_en.44" on page 834*
H12.45	2012-2Eh	Operating time of speed 9	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.45" on page 834*
H12.46	2012-2Fh	9th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.46" on page 834*
H12.47	2012-30h	Reference 10	-10000 RPM to +10000 RPM	-100	RPM	Real-time	*" H12_en.47" on page 835*
H12.48	2012-31h	Operating time of speed 10	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.48" on page 835*
H12.49	2012-32h	10th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.49" on page 835*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.50	2012-33h	Reference 11	-10000 RPM to +10000 RPM	-300	RPM	Real-time	*" H12_en.50" on page 835*
H12.51	2012-34h	Operating time of speed 11	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.51" on page 836*
H12.52	2012-35h	11th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.52" on page 836*
H12.53	2012-36h	Reference 12	-10000 RPM to +10000 RPM	-500	RPM	Real-time	*" H12_en.53" on page 836*
H12.54	2012-37h	Operating time of speed 12	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.54" on page 837*
H12.55	2012-38h	12th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.55" on page 837*
H12.56	2012-39h	Reference 13	-10000 RPM to +10000 RPM	-700	RPM	Real-time	*" H12_en.56" on page 837*
H12.57	2012-3Ah	Operating time of speed 13	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.57" on page 837*
H12.58	2012-3Bh	13th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	*" H12_en.58" on page 838*
H12.59	2012-3Ch	Reference 14	-10000 RPM to +10000 RPM	-900	RPM	Real-time	*" H12_en.59" on page 838*
H12.60	2012-3Dh	Operating time of speed 14	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	*" H12_en.60" on page 838*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H12.61	2012-3Eh	14th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.61" on page 838
H12.62	2012-3Fh	Reference 15	-10000 RPM to +10000 RPM	-600	RPM	Real-time	"H12_en.62" on page 839
H12.63	2012-40h	Operating time of speed 15	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.63" on page 839
H12.64	2012-41h	15th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.64" on page 839
H12.65	2012-42h	Reference 16	-10000 RPM to +10000 RPM	-300	RPM	Real-time	"H12_en.65" on page 839
H12.66	2012-43h	Operating time of speed 16	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	"H12_en.66" on page 840
H12.67	2012-44h	16th speed rise/drop time and curve smoothing parameter time	See H12.22.	256	-	Real-time	"H12_en.67" on page 840

3.19 H17 Virtual DI/DO Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.90	2017-5Bh	Communication VDI enable	0: Disabled 1: Enabled	0	-	At stop	"H17_en.90" on page 840
H17.91	2017-5Ch	VDI default value after power-on	bit0: VDI1 bit1: VDI2 bit2: VDI3 bit3: VDI4 bit4: VDI5 bit5: VDI6 bit6: VDI7 bit7: VDI8 bit8: VDI9 bit9: VDI10 bit10: VDI11 bit11: VDI12 bit12: VDI13 bit13: VDI14 bit14: VDI15 bit15: VDI16	0	-	Real-time	"H17_en.91" on page 841
H17.00	2017-01h	VDI1 function	0: Undefined 1: Servo enabled 2: Alarm reset signal 5: Multi-run reference direction selection 6: Multi-run reference switching CMD1 7: Multi-run reference switching CMD2 8: Multi-run reference switching CMD3 9: Multi-run reference switching CMD4 14: Positive limit switch 15: Negative limit switch 18: Forward jog 19: Reverse jog 24: Electronic gear selection 28: Multi-position reference enabled 31: Home switch 34: Emergency stop 40: Multi-speed enabled	0	-	Real-time	"H17_en.00" on page 841

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.01	2017-02h	VDI1 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.01" on page 842*
H17.02	2017-03h	VDI2 function	See H17.00.	0	-	Real-time	*" H17_en.02" on page 842*
H17.03	2017-04h	VDI2 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.03" on page 843*
H17.04	2017-05h	VDI3 function	See H17.00.	0	-	Real-time	*" H17_en.04" on page 843*
H17.05	2017-06h	VDI3 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.05" on page 843*
H17.06	2017-07h	VDI4 function	See H17.00.	0	-	Real-time	*" H17_en.06" on page 843*
H17.07	2017-08h	VDI4 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.07" on page 844*
H17.08	2017-09h	VDI5 function	See H17.00.	0	-	Real-time	*" H17_en.08" on page 844*
H17.09	2017-0Ah	VDI5 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.09" on page 844*
H17.10	2017-0Bh	VDI6 function	See H17.00.	0	-	Real-time	*" H17_en.10" on page 845*
H17.11	2017-0Ch	VDI6 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.11" on page 845*
H17.12	2017-0Dh	VDI7 function	See H17.00.	0	-	Real-time	*" H17_en.12" on page 845*
H17.13	2017-0Eh	VDI7 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*" H17_en.13" on page 845*
H17.14	2017-0Fh	VDI8 function	See H17.00.	0	-	Real-time	*" H17_en.14" on page 846*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.15	2017-10h	VDI8 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.15" on page 846
H17.16	2017-11h	VDI9 function	See H17.00.	0	-	Real-time	" H17_en.16" on page 846
H17.17	2017-12h	VDI9 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.17" on page 846
H17.18	2017-13h	VDI10 function	See H17.00.	0	-	Real-time	" H17_en.18" on page 847
H17.19	2017-14h	VDI10 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.19" on page 847
H17.20	2017-15h	VDI11 function	See H17.00.	0	-	Real-time	" H17_en.20" on page 847
H17.21	2017-16h	VDI11 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.21" on page 848
H17.22	2017-17h	VDI12 function	See H17.00.	0	-	Real-time	" H17_en.22" on page 848
H17.23	2017-18h	VDI12 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.23" on page 848
H17.24	2017-19h	VDI13 function	See H17.00.	0	-	Real-time	" H17_en.24" on page 848
H17.25	2017-1Ah	VDI13 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.25" on page 849
H17.26	2017-1Bh	VDI14 function	See H17.00.	0	-	Real-time	" H17_en.26" on page 849
H17.27	2017-1Ch	VDI14 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	" H17_en.27" on page 849
H17.28	2017-1Dh	VDI15 function	See H17.00.	0	-	Real-time	" H17_en.28" on page 849

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.29	2017-1Eh	VDI15 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*"H17_en.29" on page 850*
H17.30	2017-1Fh	VDI16 function	See H17.00.	0	-	Real-time	*"H17_en.30" on page 850*
H17.31	2017-20h	VDI16 logic level selection	0: Active when the written value is 1 1: Active when the written value changes from 0 to 1	0	-	Real-time	*"H17_en.31" on page 850*
H17.92	2017-5Dh	Communication VDO enable	0: Disabled 1: Enabled	0	-	At stop	*"H17_en.92" on page 851*
H17.93	2017-5Eh	VDO default value after power-on	bit0: VDO1 bit1: VDO2 bit2: VDO3 bit3: VDO4 bit4: VDO5 bit5: VDO6 bit6: VDO7 bit7: VDO8 bit8: VDO9 bit9: VDO10 bit10: VDO11 bit11: VDO12 bit12: VDO13 bit13: VDO14 bit14: VDO15 bit15: VDO16	0	-	At stop	*"H17_en.93" on page 851*
H17.32	2017-21h	VDO virtual level	0–65535	0	-	Unchangeable	*"H17_en.32" on page 852*
H17.33	2017-22h	VDO1 function	0: Undefined 1: Servo ready 2: Motor rotation signal 9: Braking 10: Warning 11: Failure 26: Closed-loop state 32: EDM output	0	-	Real-time	*"H17_en.33" on page 852*
H17.34	2017-23h	VDO1 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*"H17_en.34" on page 852*
H17.35	2017-24h	VDO2 function	See H17.33.	0	-	Real-time	*"H17_en.35" on page 853*
H17.36	2017-25h	VDO2 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	*"H17_en.36" on page 853*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.37	2017-26h	VDO3 function	See H17.33.	0	-	Real-time	"H17_en.37" on page 853
H17.38	2017-27h	VDO3 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.38" on page 853
H17.39	2017-28h	VDO4 function	See H17.33.	0	-	Real-time	"H17_en.39" on page 854
H17.40	2017-29h	VDO4 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.40" on page 854
H17.41	2017-2Ah	VDO5 function	See H17.33.	0	-	Real-time	"H17_en.41" on page 854
H17.42	2017-2Bh	VDO5 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.42" on page 855
H17.43	2017-2Ch	VDO6 function	See H17.33.	0	-	Real-time	"H17_en.43" on page 855
H17.44	2017-2Dh	VDO6 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.44" on page 855
H17.45	2017-2Eh	VDO7 function	See H17.33.	0	-	Real-time	"H17_en.45" on page 855
H17.46	2017-2Fh	VDO7 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.46" on page 856
H17.47	2017-30h	VDO8 function	See H17.33.	0	-	Real-time	"H17_en.47" on page 856
H17.48	2017-31h	VDO8 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.48" on page 856
H17.49	2017-32h	VDO9 function	See H17.33.	0	-	Real-time	"H17_en.49" on page 856
H17.50	2017-33h	VDO9 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.50" on page 857
H17.51	2017-34h	VDO10 function	See H17.33.	0	-	Real-time	"H17_en.51" on page 857
H17.52	2017-35h	VDO10 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.52" on page 857
H17.53	2017-36h	VDO11 function	See H17.33.	0	-	Real-time	"H17_en.53" on page 858
H17.54	2017-37h	VDO11 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.54" on page 858
H17.55	2017-38h	VDO12 function	See H17.33.	0	-	Real-time	"H17_en.55" on page 858
H17.56	2017-39h	VDO12 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.56" on page 858
H17.57	2017-3Ah	VDO13 function	See H17.33.	0	-	Real-time	"H17_en.57" on page 859

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H17.58	2017-3Bh	VDO13 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.58" on page 859
H17.59	2017-3Ch	VDO14 function	See H17.33.	0	-	Real-time	"H17_en.59" on page 859
H17.60	2017-3Dh	VDO14 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.60" on page 859
H17.61	2017-3Eh	VDO15 function	See H17.33.	0	-	Real-time	"H17_en.61" on page 860
H17.62	2017-3Fh	VDO15 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.62" on page 860
H17.63	2017-40h	VDO16 function	See H17.33.	0	-	Real-time	"H17_en.63" on page 860
H17.64	2017-41h	VDO16 logic level selection	0: Output 1 upon active logic 1: Output 0 upon active logic	0	-	Real-time	"H17_en.64" on page 861

3.20 H18 Position Comparison Output Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H18.00	2018-01h	Position comparison output selection	0: Disable 1: Enable (rising edge-triggered)	0	-	Real-time	"H18_en.00" on page 861
H18.01	2018-02h	Position comparison output feedback source	0: Motor encoder feedback 1: Fully closed-loop position feedback	0	-	Real-time	"H18_en.01" on page 861
H18.02	2018-03h	Position comparison resolution	0: 24-bit 1: 23-bit 2: 22-bit 3: 21-bit 4: 20-bit 5: 19-bit 6: 18-bit 7: 17-bit	1	-	Real-time	"H18_en.02" on page 861
H18.03	2018-04h	Position comparison mode	0: Individual comparison mode 1: Cyclic comparison mode 2: Fixed cyclic comparison mode	0	-	Real-time	"H18_en.03" on page 862

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H18.04	2018-05h	Current position as zero	0: Disable 1: Enable (rising edge-triggered)	0	-	Real-time	"H18_en.04" on page 862
H18.05	2018-06h	Position comparison output width	0.1 ms–204.7 ms	0.1	ms	Real-time	"H18_en.05" on page 863
H18.06	2018-07h	Position comparison output ABZ port polarity	Bit 0: OCZ output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic Bit 1: Z port output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic bit2: A/B output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic	0	-	Real-time	"H18_en.06" on page 863
H18.07	2018-08h	Position comparison start point	0–40	0	-	Real-time	"H18_en.07" on page 863
H18.08	2018-09h	Position comparison end point	0–40	0	-	Real-time	"H18_en.08" on page 864
H18.09	2018-0Ah	Current state of position comparison	0–1024	0	-	Unchangeable	"H18_en.09" on page 864
H18.10	2018-0Bh	Real-time position of position comparison	-2147483648–2147483647	0	-	Unchangeable	"H18_en.10" on page 864
H18.12	2018-0Dh	Zero offset of position comparison	-2147483648–2147483647	0	-	Real-time	"H18_en.12" on page 864
H18.14	2018-0Fh	Position comparison output delay compensation	–12.00 µs to +12.00 µs	0.00	us	Real-time	"H18_en.14" on page 865
H18.15	2018-10h	Fixed cyclic comparison	1–65535	1	-	Real-time	"H18_en.15" on page 865

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H18.16	2018-11h	ABZ output function setting	bit0: OCZ output function 0: Frequency-division output 1: Position comparison bit1: Z port output function 0: Frequency-division output 1: Position comparison bit2: A/B port output function 0: Frequency-division output 1: Position comparison	0	-	Real-time	*" H18_en.16" on page 865*
H18.17	2018-12h	Number of fixed mode cycles	0–65535	0	-	Unchangeable	*" H18_en.17" on page 866*

3.21 H19 Target Position Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.00	2019-01h	Target value of position comparison 1	-2147483648–2147483647	0	-	Real-time	*" H19_en.00" on page 866*
H19.02	2019-03h	Attribute value of position comparison 1	Bit0: Current position changes from "less than" to "more than" the comparison point bit1: Current position changes from "more than" to "less than" the comparison point bit2: N/A bit3: N/A bit4: N/A bit5: N/A bit6: N/A bit7: DO1 output bit8: DO2 output bit9: Nabit10: bit10: N/A bit11: N/A bit12: Frequency-division A output bit13: Frequency-division B output bit14: Frequency-division Z output bit15: Frequency-division OCZ output	0	-	Real-time	*" H19_en.02" on page 867*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.03	2019-04h	Target value of position comparison 2	-2147483648–2147483647	0	-	Real-time	*" H19_en.03" on page 867*
H19.05	2019-06h	Attribute value of position comparison 2	See H19.02.	0	-	Real-time	*" H19_en.05" on page 867*
H19.06	2019-07h	Target value of position comparison 3	-2147483648–2147483647	0	-	Real-time	*" H19_en.06" on page 868*
H19.08	2019-09h	Attribute value of position comparison 3	See H19.02.	0	-	Real-time	*" H19_en.08" on page 868*
H19.09	2019-0Ah	Target value of position comparison 4	-2147483648–2147483647	0	-	Real-time	*" H19_en.09" on page 868*
H19.11	2019-0Ch	Attribute value of position comparison 4	See H19.02.	0	-	Real-time	*" H19_en.11" on page 869*
H19.12	2019-0Dh	Target value of position comparison 5	-2147483648–2147483647	0	-	Real-time	*" H19_en.12" on page 869*
H19.14	2019-0Fh	Attribute value of position comparison 5	See H19.02.	0	-	Real-time	*" H19_en.14" on page 869*
H19.15	2019-10h	Target value of position comparison 6	-2147483648–2147483647	0	-	Real-time	*" H19_en.15" on page 869*
H19.17	2019-12h	Attribute value of position comparison 6	See H19.02.	0	-	Real-time	*" H19_en.17" on page 870*
H19.18	2019-13h	Target value of position comparison 7	-2147483648–2147483647	0	-	Real-time	*" H19_en.18" on page 870*
H19.20	2019-15h	Attribute value of position comparison 7	See H19.02.	0	-	Real-time	*" H19_en.20" on page 870*
H19.21	2019-16h	Target value of position comparison 8	-2147483648–2147483647	0	-	Real-time	*" H19_en.21" on page 870*
H19.23	2019-18h	Attribute value of position comparison 8	See H19.02.	0	-	Real-time	*" H19_en.23" on page 871*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.24	2019-19h	Target value of position comparison 9	-2147483648–2147483647	0	-	Real-time	*" H19_en.24" on page 871*
H19.26	2019-1Bh	Attribute value of position comparison 9	See H19.02.	0	-	Real-time	*" H19_en.26" on page 871*
H19.27	2019-1Ch	Target value of position comparison 10	-2147483648–2147483647	0	-	Real-time	*" H19_en.27" on page 871*
H19.29	2019-1Eh	Attribute value of position comparison 10	See H19.02.	0	-	Real-time	*" H19_en.29" on page 872*
H19.30	2019-1Fh	Target value of position comparison 11	-2147483648–2147483647	0	-	Real-time	*" H19_en.30" on page 872*
H19.32	2019-21h	Attribute value of position comparison 11	See H19.02.	0	-	Real-time	*" H19_en.32" on page 872*
H19.33	2019-22h	Target value of position comparison 12	-2147483648–2147483647	0	-	Real-time	*" H19_en.33" on page 873*
H19.35	2019-24h	Attribute value of position comparison 12	See H19.02.	0	-	Real-time	*" H19_en.35" on page 873*
H19.36	2019-25h	Target value of position comparison 13	-2147483648–2147483647	0	-	Real-time	*" H19_en.36" on page 873*
H19.38	2019-27h	Attribute value of position comparison 13	See H19.02.	0	-	Real-time	*" H19_en.38" on page 873*
H19.39	2019-28h	Target value of position comparison 14	-2147483648–2147483647	0	-	Real-time	*" H19_en.39" on page 874*
H19.41	2019-2Ah	Attribute value of position comparison 14	See H19.02.	0	-	Real-time	*" H19_en.41" on page 874*
H19.42	2019-2Bh	Target value of position comparison 15	-2147483648–2147483647	0	-	Real-time	*" H19_en.42" on page 874*
H19.44	2019-2Dh	Attribute value of position comparison 15	See H19.02.	0	-	Real-time	*" H19_en.44" on page 874*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.45	2019-2Eh	Target value of position comparison 16	-2147483648–2147483647	0	-	Real-time	" H19_en.45" on page 875
H19.47	2019-30h	Attribute value of position comparison 16	See H19.02.	0	-	Real-time	" H19_en.47" on page 875
H19.48	2019-31h	Target value of position comparison 17	-2147483648–2147483647	0	-	Real-time	" H19_en.48" on page 875
H19.50	2019-33h	Attribute value of position comparison 17	See H19.02.	0	-	Real-time	" H19_en.50" on page 875
H19.51	2019-34h	Target value of position comparison 18	-2147483648–2147483647	0	-	Real-time	" H19_en.51" on page 876
H19.53	2019-36h	Attribute value of position comparison 18	See H19.02.	0	-	Real-time	" H19_en.53" on page 876
H19.54	2019-37h	Target value of position comparison 19	-2147483648–2147483647	0	-	Real-time	" H19_en.54" on page 876
H19.56	2019-39h	Attribute value of position comparison 19	See H19.02.	0	-	Real-time	" H19_en.56" on page 877
H19.57	2019-3Ah	Target value of position comparison 20	-2147483648–2147483647	0	-	Real-time	" H19_en.57" on page 877
H19.59	2019-3Ch	Attribute value of position comparison 20	See H19.02.	0	-	Real-time	" H19_en.59" on page 877
H19.60	2019-3Dh	Target value of position comparison 21	-2147483648–2147483647	0	-	Real-time	" H19_en.60" on page 877
H19.62	2019-3Fh	Attribute value of position comparison 21	See H19.02.	0	-	Real-time	" H19_en.62" on page 878
H19.63	2019-40h	Target value of position comparison 22	-2147483648–2147483647	0	-	Real-time	" H19_en.63" on page 878
H19.65	2019-42h	Attribute value of position comparison 22	See H19.02.	0	-	Real-time	" H19_en.65" on page 878

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.66	2019-43h	Target value of position comparison 23	-2147483648–2147483647	0	-	Real-time	*" H19_en.66" on page 878*
H19.68	2019-45h	Attribute value of position comparison 23	See H19.02.	0	-	Real-time	*" H19_en.68" on page 879*
H19.69	2019-46h	Target value of position comparison 24	-2147483648–2147483647	0	-	Real-time	*" H19_en.69" on page 879*
H19.71	2019-48h	Attribute value of position comparison 24	See H19.02.	0	-	Real-time	*" H19_en.71" on page 879*
H19.72	2019-49h	Target value of position comparison 25	-2147483648–2147483647	0	-	Real-time	*" H19_en.72" on page 879*
H19.74	2019-4Bh	Attribute value of position comparison 25	See H19.02.	0	-	Real-time	*" H19_en.74" on page 880*
H19.75	2019-4Ch	Target value of position comparison 26	-2147483648–2147483647	0	-	Real-time	*" H19_en.75" on page 880*
H19.77	2019-4Eh	Attribute value of position comparison 26	See H19.02.	0	-	Real-time	*" H19_en.77" on page 880*
H19.78	2019-4Fh	Target value of position comparison 27	-2147483648–2147483647	0	-	Real-time	*" H19_en.78" on page 881*
H19.80	2019-51h	Attribute value of position comparison 27	See H19.02.	0	-	Real-time	*" H19_en.80" on page 881*
H19.81	2019-52h	Target value of position comparison 28	-2147483648–2147483647	0	-	Real-time	*" H19_en.81" on page 881*
H19.83	2019-54h	Attribute value of position comparison 28	See H19.02.	0	-	Real-time	*" H19_en.83" on page 881*
H19.84	2019-55h	Target value of position comparison 29	-2147483648–2147483647	0	-	Real-time	*" H19_en.84" on page 882*
H19.86	2019-57h	Attribute value of position comparison 29	See H19.02.	0	-	Real-time	*" H19_en.86" on page 882*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.87	2019-58h	Target value of position comparison 30	-2147483648–2147483647	0	-	Real-time	" H19_en.87" on page 882
H19.89	2019-5Ah	Attribute value of position comparison 30	See H19.02.	0	-	Real-time	" H19_en.89" on page 882
H19.90	2019-5Bh	Target value of position comparison 31	-2147483648–2147483647	0	-	Real-time	" H19_en.90" on page 883
H19.92	2019-5Dh	Attribute value of position comparison 31	See H19.02.	0	-	Real-time	" H19_en.92" on page 883
H19.93	2019-5Eh	Target value of position comparison 32	-2147483648–2147483647	0	-	Real-time	" H19_en.93" on page 883
H19.95	2019-60h	Attribute value of position comparison 32	See H19.02.	0	-	Real-time	" H19_en.95" on page 883
H19.96	2019-61h	Target value of position comparison 33	-2147483648–2147483647	0	-	Real-time	" H19_en.96" on page 884
H19.98	2019-63h	Attribute value of position comparison 33	See H19.02.	0	-	Real-time	" H19_en.98" on page 884
H19.99	2019-64h	Target value of position comparison 34	-2147483648–2147483647	0	-	Real-time	" H19_en.99" on page 884
H19.101	2019-66h	Attribute value of position comparison 34	See H19.02.	0	-	Real-time	" H19_en.101" on page 885
H19.102	2019-67h	Target value of position comparison 35	-2147483648–2147483647	0	-	Real-time	" H19_en.102" on page 885
H19.104	2019-69h	Attribute value of position comparison 35	See H19.02.	0	-	Real-time	" H19_en.104" on page 885
H19.105	2019-6Ah	Target value of position comparison 36	-2147483648–2147483647	0	-	Real-time	" H19_en.105" on page 885
H19.107	2019-6Ch	Attribute value of position comparison 36	See H19.02.	0	-	Real-time	" H19_en.107" on page 886

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H19.108	2019-6Dh	Target value of position comparison 37	-2147483648–2147483647	0	-	Real-time	" H19_en.108" on page 886
H19.110	2019-6Fh	Attribute value of position comparison 37	See H19.02.	0	-	Real-time	" H19_en.110" on page 886
H19.111	2019-70h	Target value of position comparison 38	-2147483648–2147483647	0	-	Real-time	" H19_en.111" on page 886
H19.113	2019-72h	Attribute value of position comparison 38	See H19.02.	0	-	Real-time	" H19_en.113" on page 887
H19.114	2019-73h	Target value of position comparison 39	-2147483648–2147483647	0	-	Real-time	" H19_en.114" on page 887
H19.116	2019-75h	Attribute value of position comparison 39	See H19.02.	0	-	Real-time	" H19_en.116" on page 887
H19.117	2019-76h	Target value of position comparison 40	-2147483648–2147483647	0	-	Real-time	" H19_en.117" on page 887
H19.119	2019-78h	Attribute value of position comparison 40	See H19.02.	0	-	Real-time	" H19_en.119" on page 888

3.22 H21 Current Loop Gain Switchover Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H21.00	2021-01h	Current loop gain switchover	0: No operation 1: Enabled	0	-	Real-time	" H21_en.00" on page 888

3.23 H22 Process Segment Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.00	2022-01h	Process segment command trigger	0–1000	0	-	Real-time	" H22_en.00" on page 888
H22.01	2022-02h	Process segment triggered by the event rising edge	0–65535	0	-	Real-time	" H22_en.01" on page 889
H22.02	2022-03h	Process segment triggered by the event falling edge	0–65535	0	-	Real-time	" H22_en.02" on page 890
H22.03	2022-04h	Acceleration/ Deceleration time upon technology segment pause	0: Acceleration/Deceleration time 1: Acceleration/Deceleration time 1 2: Acceleration/Deceleration time 2 3: Acceleration/Deceleration time 3 4: Acceleration/Deceleration time 4 5: Acceleration/Deceleration time 5 6: Acceleration/Deceleration time 6 7: Acceleration/Deceleration time 7	0	-	Real-time	" H22_en.03" on page 890
H22.04	2022-05h	Positive software position limit	-2147483648 to 2147483647	2147483647	Reference unit	Real-time	" H22_en.04" on page 891
H22.06	2022-07h	Negative software position limit	-2147483648 to 2147483647	-2147483648	Reference unit	Real-time	" H22_en.06" on page 891
H22.08	2022-09h	Process segment number	0–65535	0	-	Unchangeable	" H22_en.08" on page 892
H22.09	2022-0Ah	Process segment function switch	0–65535	0	-	At stop	" H22_en.09" on page 892
H22.19	2022-14h	Target speed	0.1 rpm to 6000.0 rpm	50.0	RPM	Real-time	" H22_en.19" on page 892

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.20	2022-15h	Target speed 1	0.1 rpm to 6000.0 rpm	200.0	RPM	Real-time	" H22_en.20" on page 893
H22.21	2022-16h	Target speed 2	0.1 rpm to 6000.0 rpm	500.0	RPM	Real-time	" H22_en.21" on page 893
H22.22	2022-17h	Target speed 3	0.1 rpm to 6000.0 rpm	1000.0	RPM	Real-time	" H22_en.22" on page 893
H22.23	2022-18h	Target speed 4	0.1 rpm to 6000.0 rpm	1500.0	RPM	Real-time	" H22_en.23" on page 893
H22.24	2022-19h	Target speed 5	0.1 rpm to 6000.0 rpm	2000.0	RPM	Real-time	" H22_en.24" on page 894
H22.25	2022-1Ah	Target speed 6	0.1 rpm to 6000.0 rpm	2500.0	RPM	Real-time	" H22_en.25" on page 894
H22.26	2022-1Bh	Target speed 7	0.1 rpm to 6000.0 rpm	3000.0	RPM	Real-time	" H22_en.26" on page 894
H22.35	2022-24h	Accel/Decel time	0 ms–65535 ms	50	ms	Real-time	" H22_en.35" on page 894
H22.36	2022-25h	Acceleration/ Deceleration time 1	0 ms–65535 ms	200	ms	Real-time	" H22_en.36" on page 895
H22.37	2022-26h	Acceleration/ Deceleration time 2	0 ms–65535 ms	500	ms	Real-time	" H22_en.37" on page 895
H22.38	2022-27h	Acceleration/ Deceleration time 3	0 ms–65535 ms	1000	ms	Real-time	" H22_en.38" on page 895
H22.39	2022-28h	Acceleration/ Deceleration time 4	0 ms–65535 ms	1500	ms	Real-time	" H22_en.39" on page 896
H22.40	2022-29h	Acceleration/ Deceleration time 5	0 ms–65535 ms	2000	ms	Real-time	" H22_en.40" on page 896
H22.41	2022-2Ah	Acceleration/ Deceleration time 6	0 ms–65535 ms	2500	ms	Real-time	" H22_en.41" on page 896
H22.42	2022-2Bh	Acceleration/ Deceleration time 7	0 ms–65535 ms	3000	ms	Real-time	" H22_en.42" on page 896
H22.51	2022-34h	Delay after completion of the process segment	0 ms–65535 ms	0	ms	Real-time	" H22_en.51" on page 897

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.52	2022-35h	Delay time 1 after completion of the process segment	0 ms–65535 ms	50	ms	Real-time	" H22_en.52" on page 897
H22.53	2022-36h	Delay time 2 after completion of the process segment	0 ms–65535 ms	200	ms	Real-time	" H22_en.53" on page 897
H22.54	2022-37h	Delay time 3 after completion of the process segment	0 ms–65535 ms	500	ms	Real-time	" H22_en.54" on page 898
H22.55	2022-38h	Delay time 4 after completion of the process segment	0 ms–65535 ms	1000	ms	Real-time	" H22_en.55" on page 898
H22.56	2022-39h	Delay time 5 after completion of the process segment	0 ms–65535 ms	1500	ms	Real-time	" H22_en.56" on page 898
H22.57	2022-3Ah	Delay time 6 after completion of the process segment	0 ms–65535 ms	2000	ms	Real-time	" H22_en.57" on page 898
H22.58	2022-3Bh	Delay time 7 after completion of the process segment	0 ms–65535 ms	3000	ms	Real-time	" H22_en.58" on page 899
H22.70	2022-47h	Homing mode	-32768–32767	-2	-	Real-time	" H22_en.70" on page 899
H22.71	2022-48h	Speed of high-speed search for home switch signal	0 RPM to 3000 RPM	100	RPM	Real-time	" H22_en.71" on page 899
H22.72	2022-49h	Speed of low-speed search for home switch signal	0 rpm to 1000 rpm	10	RPM	Real-time	" H22_en.72" on page 900

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H22.73	2022-4Ah	Acceleration/ Deceleration time during homing	0 ms–1000 ms	1000	ms	Real-time	*" H22_en.73" on page 900*
H22.74	2022-4Bh	Home search time limit	0 ms–65535 ms	10000	ms	Real-time	*" H22_en.74" on page 900*
H22.75	2022-4Ch	Mechanical home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	*" H22_en.75" on page 900*
H22.79	2022-50h	Relative/ Absolute homing	0–65535	0	-	Real-time	*" H22_en.79" on page 901*

3.24 H23 Process Segment Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H23.00	2023-01h	Definition of homing	0–4294967295	0	-	Real-time	*" H23_en.00" on page 901*
H23.02	2023-03h	Homing data	-2147483648–2147483647	0	-	Real-time	*" H23_en.02" on page 901*
H23.04	2023-05h	Definition of process segment 1	0–4294967295	0	-	Real-time	*" H23_en.04" on page 902*
H23.06	2023-07h	Data of process segment 1	-2147483648–2147483647	0	-	Real-time	*" H23_en.06" on page 902*
H23.08	2023-09h	Definition of process segment 2	0–4294967295	0	-	Real-time	*" H23_en.08" on page 902*
H23.10	2023-0Bh	Data of process segment 2	-2147483648–2147483647	0	-	Real-time	*" H23_en.10" on page 903*
H23.12	2023-0Dh	Definition of process segment 3	0–4294967295	0	-	Real-time	*" H23_en.12" on page 903*
H23.14	2023-0Fh	Data of process segment 3	-2147483648–2147483647	0	-	Real-time	*" H23_en.14" on page 903*
H23.16	2023-11h	Definition of process segment 4	0–4294967295	0	-	Real-time	*" H23_en.16" on page 904*
H23.18	2023-13h	Data of process segment 4	-2147483648–2147483647	0	-	Real-time	*" H23_en.18" on page 904*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H23.20	2023-15h	Definition of process segment 5	0–4294967295	0	-	Real-time	" H23_en.20" on page 904
H23.22	2023-17h	Data of process segment 5	-2147483648–2147483647	0	-	Real-time	" H23_en.22" on page 904
H23.24	2023-19h	Definition of process segment 6	0–4294967295	0	-	Real-time	" H23_en.24" on page 905
H23.26	2023-1Bh	Data of process segment 6	-2147483648–2147483647	0	-	Real-time	" H23_en.26" on page 905
H23.28	2023-1Dh	Definition of process segment 7	0–4294967295	0	-	Real-time	" H23_en.28" on page 905
H23.30	2023-1Fh	Data of process segment 7	-2147483648–2147483647	0	-	Real-time	" H23_en.30" on page 905
H23.32	2023-21h	Definition of process segment 8	0–4294967295	0	-	Real-time	" H23_en.32" on page 906
H23.34	2023-23h	Data of process segment 8	-2147483648–2147483647	0	-	Real-time	" H23_en.34" on page 906
H23.36	2023-25h	Definition of process segment 9	0–4294967295	0	-	Real-time	" H23_en.36" on page 906
H23.38	2023-27h	Data of process segment 9	-2147483648–2147483647	0	-	Real-time	" H23_en.38" on page 907
H23.40	2023-29h	Definition of process segment 10	0–4294967295	0	-	Real-time	" H23_en.40" on page 907
H23.42	2023-2Bh	Data of process segment 10	-2147483648–2147483647	0	-	Real-time	" H23_en.42" on page 907
H23.44	2023-2Dh	Definition of process segment 11	0–4294967295	0	-	Real-time	" H23_en.44" on page 907
H23.46	2023-2Fh	Data of process segment 11	-2147483648–2147483647	0	-	Real-time	" H23_en.46" on page 908
H23.48	2023-31h	Definition of process segment 12	0–4294967295	0	-	Real-time	" H23_en.48" on page 908
H23.50	2023-33h	Data of process segment 12	-2147483648–2147483647	0	-	Real-time	" H23_en.50" on page 908
H23.52	2023-35h	Definition of process segment 13	0–4294967295	0	-	Real-time	" H23_en.52" on page 908

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H23.54	2023-37h	Data of process segment 13	-2147483648–2147483647	0	-	Real-time	" H23_en.54" on page 909
H23.56	2023-39h	Definition of process segment 14	0–4294967295	0	-	Real-time	" H23_en.56" on page 909
H23.58	2023-3Bh	Data of process segment 14	-2147483648–2147483647	0	-	Real-time	" H23_en.58" on page 909
H23.60	2023-3Dh	Definition of process segment 15	0–4294967295	0	-	Real-time	" H23_en.60" on page 910
H23.62	2023-3Fh	Data of process segment 15	-2147483648–2147483647	0	-	Real-time	" H23_en.62" on page 910

3.25 H30 Related Variables Read through Communication

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H30.00	2030-01h	Servo state read by communication	0–65535	0	-	Unchangeable	" H30_en.00" on page 910
H30.01	2030-02h	DO function state 1 read through communication	0–65535	0	-	Unchangeable	" H30_en.01" on page 910
H30.02	2030-03h	DO function state 2 read through communication	0–65535	0	-	Unchangeable	" H30_en.02" on page 911
H30.16	2030-11h	Encoder communication timeout timing	0–65535	0	-	Unchangeable	" H30_en.16" on page 911
H30.17	2030-12h	Encoder communication CRC error count	0–65535	0	-	Unchangeable	" H30_en.17" on page 911
H30.18	2030-13h	Encoder communication frame stop bit error count	0–65535	0	-	Unchangeable	" H30_en.18" on page 912

3.26 H31 References Set through Communication

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H31.00	2031-01h	VDI virtual level set through communication	0–65535	0	-	Real-time	" H31_en.00" on page 912
H31.01	2031-02h	Frequency-division output frequency set through communication	0 Hz–16000000 Hz	0	Hz	Real-time	" H31_en.01" on page 912
H31.04	2031-05h	DO state set through communication	0–65535	0	-	Real-time	" H31_en.04" on page 913
H31.05	2031-06h	AO set through communication	-10000 mV–10000 mV	0	mV	Real-time	" H31_en.05" on page 913
H31.09	2031-0Ah	Speed reference set via communication	–10000.000 RPM to +10000.000 RPM	0.000	RPM	Real-time	" H31_en.09" on page 913
H31.11	2031-0Ch	Torque reference set via communication	-100.000% to 100.000%	0.000	%	Real-time	" H31_en.11" on page 914

3.27 H32 Direct Drive Parameters

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.00	2032-01h	Encoder interpolator mismatch alarm (E124)	0: Disabled 1: Enabled	1	-	At stop	" H32_en.00" on page 914
H32.02	2032-03h	Angle auto-tuning upon power-on	0: Disabled 1: Enabled	0	-	At stop	" H32_en.02" on page 914
H32.03	2032-04h	Angle auto-tuning switch controlled by control word	0: Disabled 1: Control word 6 2: Control word 7	0	-	At stop	" H32_en.03" on page 915
H32.04	2032-05h	Angle auto-tuning state	bit0: bit7 of 6041 bit1: E602.9	0	-	At stop	" H32_en.04" on page 915

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.05	2032-06h	Pre-positioning retract selection	0: Disabled 1: Enabled	0	-	At stop	" H32_en.05" on page 915
H32.06	2032-07h	Position feedback	0: Disabled 1: Enabled	0	-	At stop	" H32_en.06" on page 916
H32.07	2032-08h	Incremental homing method	0: Z Signal short circuit 1: Only first short circuit	1	-	At stop	" H32_en.07" on page 916
H32.08	2032-09h	Homing signal width	100–65535	800	-	At stop	" H32_en.08" on page 916
H32.10	2032-0Bh	Max. reference current in angle auto-tuning through inching	10.0% to 300.0%	100.0	%	At stop	" H32_en.10" on page 916
H32.13	2032-0Eh	Motor operation threshold (ROT/DDR) in angle auto-tuning through inching	0.001deg to 20.000deg	0.200	deg	At stop	" H32_en.13" on page 917
H32.14	2032-0Fh	Motor standstill threshold (ROT/DDR) in angle auto-tuning through inching	0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]	1.0	[mm/s]/[rpm]	At stop	" H32_en.14" on page 917
H32.15	2032-10h	Motor operation threshold (DDL) in angle auto-tuning through inching	0.001 millimeters–20.000 millimeters	0.200	mm	At stop	" H32_en.15" on page 917
H32.16	2032-11h	Motor standstill threshold (DDL) in angle auto-tuning through inching	0.1 mm/s–100.0 mm/s	1.0	mm/s	At stop	" H32_en.16" on page 918
H32.18	2032-13h	Motor standstill threshold for inching angle auto-tuning	0.1s to 10.0s	0.5	s	At stop	" H32_en.18" on page 918

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.20	2032-15h	Max. reference current in angle auto-tuning through pre-positioning (closed-loop)	10.0% to 300.0%	100.0	%	At stop	" H32_en.20" on page 918
H32.22	2032-17h	Electrical angle reference in angle auto-tuning through pre-positioning (closed-loop)	0.0deg to 360.0deg	0.0	deg	At stop	" H32_en.22" on page 919
H32.23	2032-18h	Electrical angle reference change range in angle auto-tuning through pre-positioning (closed-loop)	10.0deg to 170.0deg	90.0	deg	At stop	" H32_en.23" on page 919
H32.24	2032-19h	Motor stop threshold (ROT/DDR) in angle auto-tuning through pre-positioning (closed-loop)	0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]	1.0	[mm/s]/[rpm]	At stop	" H32_en.24" on page 919
H32.25	2032-1Ah	Motor stop threshold (DDL) in angle auto-tuning through pre-positioning (closed-loop)	0.1 mm/s–100.0 mm/s	1.0	mm/s	At stop	" H32_en.25" on page 919
H32.26	2032-1Bh	Damping in angle auto-tuning through pre-positioning (closed-loop)	0.00[N/(m/s)]/[N·m/rpm]–655.35[N/(m/s)]/[N·m/rpm]	0.00	[N/(m/s)]/[N·m/rpm]	At stop	" H32_en.26" on page 920
H32.29	2032-1Eh	Motor standstill threshold for close-loop pre-positioning angle auto-tuning	0.1s to 10.0s	0.5	s	At stop	" H32_en.29" on page 920

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.30	2032-1Fh	Max. reference current in angle auto-tuning through position lock	10.0% to 300.0%	100.0	%	At stop	" H32_en.30" on page 920
H32.33	2032-22h	Motor operation threshold (ROT/DDR) in angle auto-tuning through position lock	0.001deg to 20.000deg	0.200	deg	At stop	" H32_en.33" on page 921
H32.34	2032-23h	Motor standstill threshold (ROT/DDR) in angle auto-tuning through position lock	0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]	1.0	[mm/s]/[rpm]	At stop	" H32_en.34" on page 921
H32.35	2032-24h	Motor operation threshold (DDL) in angle auto-tuning through position lock	0.001 millimeters–20.000 millimeters	0.200	mm	At stop	" H32_en.35" on page 921
H32.36	2032-25h	Motor standstill threshold (DDL) in angle auto-tuning through position lock	0.1 mm/s–100.0 mm/s	1.0	mm/s	At stop	" H32_en.36" on page 922
H32.37	2032-26h	Angle gain in angle auto-tuning through position lock	0deg/(p/s)–10000deg/(p/s)	1000	deg/(p/s)	At stop	" H32_en.37" on page 922
H32.38	2032-27h	Inertia ratio in angle auto-tuning through position lock	0.00–120.00	0.00	-	At stop	" H32_en.38" on page 922
H32.39	2032-28h	Gain class in angle auto-tuning through position lock	4level to 31level	16	level	At stop	" H32_en.39" on page 923
H32.40	2032-29h	Left/Right limit function	1. Left limit being positive 2. Left limit being negative	0	-	Real-time	" H32_en.40" on page 923
H32.41	2032-2Ah	Angle auto-tuning delay upon power-on	0 ms–65535 ms	3	ms	Real-time	" H32_en.41" on page 923

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.53	2032-36h	Motor standstill threshold for position lock angle auto-tuning	0.1s to 10.0s	0.5	s	At stop	" H32_en.53" on page 924
H32.54	2032-37h	Hall auto-tuning selection	0–65535	0	-	At stop	" H32_en.54" on page 924
H32.55	2032-38h	Hall signal UVW manual adjustment	0–7	0	-	At stop	" H32_en.55" on page 924
H32.56	2032-39h	UVW filter time of Hall signal	0 ms–10 ms	5	ms	Real-time	" H32_en.56" on page 925
H32.57	2032-3Ah	Hall closed-loop locked-rotor speed	0[mm/s]/[rpm]–65535[mm/s]/[rpm]	2	[mm/s]/[rpm]	At stop	" H32_en.57" on page 925
H32.58	2032-3Bh	Hall closed-loop locked-rotor current	0.0% to 300.0%	120.0	%	At stop	" H32_en.58" on page 925
H32.59	2032-3Ch	Hall closed-loop locked-rotor window time	0 ms–2000 ms	10	ms	At stop	" H32_en.59" on page 925
H32.60	2032-3Dh	Hall closed-loop inertia ratio	0.00–120.00	0.00	-	At stop	" H32_en.60" on page 926
H32.61	2032-3Eh	Hall closed-loop rigidity	4–31	16	-	At stop	" H32_en.61" on page 926
H32.62	2032-3Fh	Electrical angle save flag	0–65535	0	-	Real-time	" H32_en.62" on page 926
H32.63	2032-40h	Hall1 electric angle	0–65535	0	-	At stop	" H32_en.63" on page 926
H32.64	2032-41h	Hall2 electric angle	0–65535	0	-	At stop	" H32_en.64" on page 927
H32.65	2032-42h	Hall3 electric angle	0–65535	0	-	At stop	" H32_en.65" on page 927
H32.66	2032-43h	Hall4 electric angle	0–65535	0	-	At stop	" H32_en.66" on page 927
H32.67	2032-44h	Hall5 electric angle	0–65535	0	-	At stop	" H32_en.67" on page 928
H32.68	2032-45h	Hall6 electric angle	0–65535	0	-	At stop	" H32_en.68" on page 928

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.70	2032-47h	Motor overload protection mode	0: Internal motor overload curve 1: External motor overload curve 2: Current limit overload protection 3: Hide motor overload protection	0	-	At stop	" H32_en.70" on page 928
H32.73	2032-4Ah	Thermal threshold current of overload current limit	100.0% to 750.0%	115.0	%	At stop	" H32_en.73" on page 928
H32.74	2032-4Bh	Peak current of overload current limit	100.0% to 750.0%	300.0	%	At stop	" H32_en.74" on page 929
H32.75	2032-4Ch	Max. current duration of overload protection	0.01s to 655.35s	1.00	s	At stop	" H32_en.75" on page 929
H32.76	2032-4Dh	Current limit time constant of overload protection	0.01–655.35	1.00	-	At stop	" H32_en.76" on page 929
H32.77	2032-4Eh	Current limit alarm threshold of overload protection	0.0% to 750.0%	0.0	%	At stop	" H32_en.77" on page 930
H32.78	2032-4Fh	Current limit fault threshold of overload protection	0.0% to 750.0%	0.0	%	At stop	" H32_en.78" on page 930
H32.79	2032-50h	Thermal threshold current of overload	100.0% to 750.0%	115.0	%	At stop	" H32_en.79" on page 930
H32.80	2032-51h	Thermal current interval of overload	0.1% to 204.8%	6.4	%	At stop	" H32_en.80" on page 930
H32.81	2032-52h	Overload heat dissipation current interval	0.1% to 204.8%	6.4	%	At stop	" H32_en.81" on page 931

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
H32.82	2032-53h	Length of overload heat dissipation curve	1–200	1	-	At stop	*" H32_en.82" on page 931*
H32.83	2032-54h	Length of overload heat dissipation curve	1–200	1	-	At stop	*" H32_en.83" on page 931*

3.28 H33 Compensation Parameters

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.00	0x3300	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.00" on page 932*
H33.01	0x3301	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.01" on page 932*
H33.02	0x3302	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.02" on page 932*
H33.03	0x3303	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.03" on page 932*
H33.04	0x3304	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.04" on page 933*
H33.05	0x3305	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.05" on page 933*
H33.06	0x3306	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.06" on page 933*
H33.07	0x3307	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.07" on page 934*
H33.08	0x3308	Compensation data BUFFER	0–65535	0	-	At stop	*" H33_en.08" on page 934*

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.09	0x3309	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.09" on page 934
H33.10	0x330A	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.10" on page 934
H33.11	0x330B	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.11" on page 935
H33.12	0x330C	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.12" on page 935
H33.13	0x330D	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.13" on page 935
H33.14	0x330E	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.14" on page 935
H33.15	0x330F	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.15" on page 936
H33.16	0x3310	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.16" on page 936
H33.17	0x3311	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.17" on page 936
H33.18	0x3312	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.18" on page 936
H33.19	0x3313	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.19" on page 937
H33.20	0x3314	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.20" on page 937
H33.21	0x3315	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.21" on page 937
H33.22	0x3316	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.22" on page 938

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.23	0x3317	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.23" on page 938
H33.24	0x3318	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.24" on page 938
H33.25	0x3319	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.25" on page 938
H33.26	0x331A	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.26" on page 939
H33.27	0x331B	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.27" on page 939
H33.28	0x331C	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.28" on page 939
H33.29	0x331D	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.29" on page 939
H33.30	0x331E	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.30" on page 940
H33.31	0x331F	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.31" on page 940
H33.32	0x3320	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.32" on page 940
H33.33	0x3321	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.33" on page 940
H33.34	0x3322	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.34" on page 941
H33.35	0x3323	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.35" on page 941
H33.36	0x3324	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.36" on page 941

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.37	0x3325	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.37" on page 942
H33.38	0x3326	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.38" on page 942
H33.39	0x3327	Compensation data BUFFER	0–65535	0	-	At stop	" H33_en.39" on page 942
H33.40	0x3328	Current Compensation BUFFER group number	0–65535	0	-	At stop	" H33_en.40" on page 942
H33.41	0x3329	Compensation data sum	0–32767	0	-	At stop	" H33_en.41" on page 943
H33.44	0x332C	Data command	0–1	1	-	At stop	" H33_en.44" on page 943
H33.45	0x332D	Data storage position	0: Servo RAM 1: Servo FLASH 2: Encoder FLASH	1	-	At stop	" H33_en.45" on page 943
H33.46	0x332E	Data clear	0–3	0	-	At stop	" H33_en.46" on page 943
H33.47	0x332F	Software tool write status	0–2	0	-	At stop	" H33_en.47" on page 944
H33.48	0x3330	Servo read status	0–65535	0	-	Unchangeable	" H33_en.48" on page 944
H33.49	0x3331	Software tool read status	0–2	0	-	At stop	" H33_en.49" on page 944
H33.50	0x3332	Servo write status	0–2	0	-	Unchangeable	" H33_en.50" on page 945
H33.51	0x3333	Data transmission completed flag	0–1	0	-	At stop	" H33_en.51" on page 945

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.52	0x3334	Servo data transfer completed flag	0–1	0	-	At stop	" H33_en.52" on page 945
H33.60	0x333C	Accuracy compensation function	0–1	0	-	At stop	" H33_en.60" on page 945
H33.61	0x333D	Accuracy compensation sum	0count to 65535count	0	count	At stop	" H33_en.61" on page 946
H33.62	0x333E	Starting offset address of accuracy compensation	-2147483.48[mm]/[deg]–2147483.47[mm]/[deg]	0.00	[mm]/[deg]	At stop	" H33_en.62" on page 946
H33.64	0x3340	Accuracy compensation data interval	-327.67[mm]/[deg]–327.67[mm]/[deg]	0.00	[mm]/[deg]	At stop	" H33_en.64" on page 946
H33.65	0x3341	Accuracy compensation dial phase sequence	0–65535	0	-	At stop	" H33_en.65" on page 946
H33.66	0x3342	Accuracy compensation dial reference direction	0–1	0	-	At stop	" H33_en.66" on page 947
H33.67	0x3343	Servo homing completed	0–65535	0	-	Unchangeable	" H33_en.67" on page 947
H33.68	0x3344	Current acting index of accuracy compensation	0–65535	0	-	Unchangeable	" H33_en.68" on page 947

Parameter	Comm. Add.	Name	Value	Default	Unit	Change Mode	Page
H33.69	0x3345	Forced homing start	0–1	0	-	At stop	" H33_en.69" on page 948
H33.70	0x3346	Forced homing mode	-32768–32767	-2	-	At stop	" H33_en.70" on page 948
H33.71	0x3347	Forced homing at low speed	0[mm/s]/[rpm]–1000[mm/s]/[rpm]	10	[mm/s]/[rpm]	At stop	" H33_en.71" on page 948
H33.72	0x3348	Single-turn absolute position of accuracy compensation home of absolute encoder	0p to 4294967295p	0	p	At stop	" H33_en.72" on page 948
H33.74	0x334A	Min.pulse width of frequency-division output accuracy compensation	2count to 7count	3	count	At stop	" H33_en.74" on page 949
H33.75	0x334B	Accuracy compensation data unit	0: [um]/[arcsec] 1: [mm]/[mrad]	0	-	At stop	" H33_en.75" on page 949
H33.81	0x3351	Motor cogging torque ripple compensation sum	0count to 65535count	2000	count	At stop	" H33_en.81" on page 949

3.29 List of 1000h Object Dictionary

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1000.00h	1000-00h	Device type	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1000_en.00h" on page 950*
1001.00h	1001-00h	Error Register	0s to 0xFF	0	-	Unchangeable	*"1001_en.00h" on page 950*
1018.01h	1018-01h	Vendor ID	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1018_en.01h" on page 950*
1018.02h	1018-02h	Product Code	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1018_en.02h" on page 950*
1018.03h	1018-03h	Revision	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1018_en.03h" on page 951*
1018.04h	1018-04h	Serial number	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1018_en.04h" on page 951*
1600.00h	1600-00h	Number of valid mapped objects in RPDO1	0–20	0	-	Unchangeable	*"1600_en.00h" on page 951*
1600.01h	1600-01h	Mapped object 1 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1600_en.01h" on page 951*
1600.02h	1600-02h	Mapped object 2 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1600_en.02h" on page 952*
1600.03h	1600-03h	Mapped object 3 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1600_en.03h" on page 952*
1600.04h	1600-04h	Mapped object 4 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1600_en.04h" on page 952*
1600.05h	1600-05h	Mapped object 5 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1600_en.05h" on page 953*
1600.06h	1600-06h	Mapped object 6 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*"1600_en.06h" on page 953*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1600.07h	1600-07h	Mapped object 7 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.07h" on page 953
1600.08h	1600-08h	Mapped object 8 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.08h" on page 954
1600.09h	1600-09h	Mapped object 9 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.09h" on page 954
1600.0Ah	1600-0Ah	Mapped object 10 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.0Ah" on page 954
1600.0Bh	1600-0Bh	Mapped object 11 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.0Bh" on page 954
1600.0Ch	1600-0Ch	Mapped object 12 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.0Ch" on page 955
1600.0Dh	1600-0Dh	Mapped object 13 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.0Dh" on page 955
1600.0Eh	1600-0Eh	Mapped object 14 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.0Eh" on page 955
1600.0Fh	1600-0Fh	Mapped object 15 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.0Fh" on page 955
1600.10h	1600-10h	Mapped object 16 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.10h" on page 956
1600.11h	1600-11h	Mapped object 17 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.11h" on page 956
1600.12h	1600-12h	Mapped object 18 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.12h" on page 956
1600.13h	1600-13h	Mapped object 19 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.13h" on page 956
1600.14h	1600-14h	Mapped object 20 in RPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1600_en.14h" on page 957

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1A00.00h	1A00-00h	Number of valid mapped objects in TPDO1	0–20	0	-	Unchangeable	" 1A00_en.00h" on page 957
1A00.01h	1A00-01h	Mapped object 1 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.01h" on page 957
1A00.02h	1A00-02h	Mapped object 2 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.02h" on page 958
1A00.03h	1A00-03h	Mapped object 3 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.03h" on page 958
1A00.04h	1A00-04h	Mapped object 4 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.04h" on page 958
1A00.05h	1A00-05h	Mapped object 5 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.05h" on page 959
1A00.06h	1A00-06h	Mapped object 6 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.06h" on page 959
1A00.07h	1A00-07h	Mapped object 7 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.07h" on page 959
1A00.08h	1A00-08h	Mapped object 8 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.08h" on page 959
1A00.09h	1A00-09h	Mapped object 9 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.09h" on page 960
1A00.0Ah	1A00-0Ah	Mapped object 10 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.0Ah" on page 960
1A00.0Bh	1A00-0Bh	Mapped object 11 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.0Bh" on page 960
1A00.0Ch	1A00-0Ch	Mapped object 12 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.0Ch" on page 960
1A00.0Dh	1A00-0Dh	Mapped object 13 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1A00_en.0Dh" on page 961

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1A00.0Eh	1A00-0Eh	Mapped object 14 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.0Eh" on page 961*
1A00.0Fh	1A00-0Fh	Mapped object 15 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.0Fh" on page 961*
1A00.10h	1A00-10h	Mapped object 16 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.10h" on page 962*
1A00.11h	1A00-11h	Mapped object 17 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.11h" on page 962*
1A00.12h	1A00-12h	Mapped object 18 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.12h" on page 962*
1A00.13h	1A00-13h	Mapped object 19 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.13h" on page 962*
1A00.14h	1A00-14h	Mapped object 20 in TPDO1	0s to 0xFFFFFFFF	0	-	Unchangeable	*" 1A00_en.14h" on page 963*
1C12.00h	1C12-00h	Number of assigned PDOs	0–2	2	-	Unchangeable	*" 1C12_en.00h" on page 963*
1C12.01h	1C12-01h	PDO mapping object index of assigned RxPDO1	0x1600 to 0x17FF	0x1701	-	Unchangeable	*" 1C12_en.01h" on page 963*
1C12.02h	1C12-02h	PDO mapping object index of assigned RxPDO2	0x1600 to 0x17FF	0x170A	-	Unchangeable	*" 1C12_en.02h" on page 963*
1C13.00h	1C13-00h	Number of assigned PDOs	0–2	2	-	Unchangeable	*" 1C13_en.00h" on page 964*
1C13.01h	1C13-01h	PDO mapping object index of assigned TxPDO1	0x1A00 to 0x1BFF	0x1B01	-	Unchangeable	*" 1C13_en.01h" on page 964*
1C13.02h	1C13-02h	PDO mapping object index of assigned TxPDO1	0x1A00 to 0x1BFF	0x1B0A	-	Unchangeable	*" 1C13_en.02h" on page 964*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
1C32.01h	1C32-01h	Sync mode	0s to 0xFFFF	0	-	Unchangeable	" 1C32_en.01h" on page 965
1C32.02h	1C32-02h	Cycle time	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1C32_en.02h" on page 965
1C32.04h	1C32-04h	Sync modes supported	0s to 0xFFFF	0	-	Unchangeable	" 1C32_en.04h" on page 965
1C32.05h	1C32-05h	Minimum cycle time	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1C32_en.05h" on page 965
1C33.01h	1C33-01h	Sync mode	0s to 0xFFFF	0	-	Unchangeable	" 1C33_en.01h" on page 966
1C33.02h	1C33-02h	Cycle time	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1C33_en.02h" on page 966
1C33.04h	1C33-04h	Sync modes supported	0s to 0xFFFF	0	-	Unchangeable	" 1C33_en.04h" on page 966
1C33.05h	1C33-05h	Minimum cycle time	0s to 0xFFFFFFFF	0	-	Unchangeable	" 1C33_en.05h" on page 966

3.30 List of 6000h Object Dictionary

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
603Fh	603Fh	Error code	0–65535	0	-	Unchangeable	" 603Fh" on page 967
6040h	6040h	Control word	0–65535	0	-	Real-time	" 6040h" on page 967
6041h	6041h	Status word	0–65535	0	-	Unchangeable	" 6041h" on page 967

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
605Ah	605Ah	Quick stop mode	0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state 2: Ramp to stop as defined by 6085h, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 5: Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock state 6: Ramp to stop as defined by 6085h, keeping position lock state 7: Stop at emergency stop torque, keeping position lock state	2	-	Real-time	*" 605Ah" on page 968*
605Ch	605Ch	Stop mode at S-OFF	–4: Ramp to stop as defined by 6085h, keeping dynamic braking state –3: at zero speed, keeping dynamic braking state –2: Ramp to stop as defined by 6084h/609Ah (HM), keeping dynamic braking state –1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state 2: Dynamic braking stop, keeping de-energized state	0	-	Real-time	*" 605Ch" on page 968*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
605Dh	605Dh	Halt mode	1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping position lock state 2: Ramp to stop as defined by 6085h, keeping position lock state 3: Stop at emergency stop torque, keeping position lock state	1	-	Real-time	*" 605Dh" on page 969*
605Eh	605Eh	Stop mode at No. 2 fault	–5: Stop at zero speed, keeping dynamic braking state –4: Stop at emergency stop torque, keeping dynamic braking state –3: Ramp to stop as defined by 6085h, keeping dynamic braking state –2: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping dynamic braking state –1: Dynamic braking stop, keeping dynamic braking state 0: Coast to stop, keeping de-energized state 1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping de-energized state 2: Ramp to stop as defined by 6085h, keeping de-energized state 3: Stop at emergency stop torque, keeping de-energized state 4: Dynamic braking stop, keeping de-energized state	2	-	Real-time	*" 605Eh" on page 970*
6060h	6060h	Servo drive mode	1: Profile position (PP) mode 3: Profile velocity (PV) mode 4: Profile torque (PT) mode 6: Homing (HM) mode 8: CSP mode 9: CSV mode 10: CST mode	0	-	Real-time	*" 6060h" on page 970*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
6061h	6061h	Operation mode display	1: Profile position (PP) mode 3: Profile velocity (PV) mode 4: Profile torque (PT) mode 6: Homing (HM) mode 8: CSP mode 9: CSV mode 10: CST mode	0	-	Unchangeable	"6061h" on page 971
6062h	6062h	Position reference	-2147483648 to 2147483647	0	Reference unit	Unchangeable	"6062h" on page 971
6063h	6063h	Position actual value	–2147483648 to +2147483647	0	Pulse	Unchangeable	"6063h" on page 972
6064h	6064h	Position actual value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	"6064h" on page 972
6065h	6065h	Following error window	0 to 4294967295	27486951	Reference unit	Real-time	"6065h" on page 972
6066h	6066h	Defines the time lapse to trigger excessive position deviation (EB00.0).	0 ms–65535 ms	0	ms	Real-time	"6066h" on page 973
6067h	6067h	Position window	0 to 4294967295	5872	Reference unit	Real-time	"6067h" on page 973
6068h	6068h	Position window time	0 ms–65535 ms	0	ms	Real-time	"6068h" on page 973
606Ch	606Ch	Actual speed	–2147483648 to +2147483647	0	Reference unit/s	Unchangeable	"606Ch" on page 974
606Dh	606Dh	Velocity window	0 RPM to 65535 RPM	10	RPM	Real-time	"606Dh" on page 974
606Eh	606Eh	Velocity window time	0 ms–65535 ms	0	ms	Real-time	"606Eh" on page 974
606Fh	606Fh	Zero speed signal threshold	0 RPM to 65535 RPM	10	RPM	Real-time	"606Fh" on page 975
6070h	6070h	Velocity threshold time	0 ms–65535 ms	0	ms	Real-time	"6070h" on page 975
6071h	6071h	Target torque	-4000–4000	0	0.001	Real-time	"6071h" on page 975

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
6072h	6072h	Max. torque reference	0–4000	3500	0.001	Real-time	*"6072h" on page 975*
6074h	6074h	Torque reference	-4000–4000	0	0.001	Unchangeable	*"6074h" on page 976*
6077h	6077h	Actual torque	-4000–4000	0	0.001	Unchangeable	*"6077h" on page 976*
607Ah	607Ah	Target position	-2147483648 to 2147483647	0	Reference unit	Real-time	*"607Ah" on page 976*
607Ch	607Ch	Home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	*"607Ch" on page 977*
607D.01h	607D-01h	Min. position limit	-2147483648 to 2147483647	-2147483648	Reference unit	Real-time	*"607D_en.01h" on page 977*
607D.02h	607D-02h	Max. position limit	-2147483648 to 2147483647	2147483647	Reference unit	Real-time	*"607D_en.02h" on page 978*
607Eh	607Eh	Reference polarity	0–255	0	-	Real-time	*"607Eh" on page 978*
607Fh	607Fh	Max. speed	0 to 4294967295	4294967295	Reference unit/s	Real-time	*"607Fh" on page 978*
6081h	6081h	Profile velocity	0 to 4294967295	11184810	Reference unit/s	Real-time	*"6081h" on page 979*
6083h	6083h	Profile acceleration	0 to 4294967295	4294967295	Reference unit/s^2	Real-time	*"6083h" on page 979*
6084h	6084h	Profile deceleration	0 to 4294967295	4294967295	Reference unit/s^2	Real-time	*"6084h" on page 980*
6085h	6085h	Quick stop deceleration	0 to 4294967295	2147483647	Reference unit/s^2	Real-time	*"6085h" on page 980*
6087h	6087h	Torque slope	0–4294967295	4294967295	0.1%/s	Real-time	*"6087h" on page 980*
6091.01h	6091-01h	Motor resolution	1–4294967295	1	-	At stop	*"6091_en.01h" on page 981*
6091.02h	6091-02h	Shaft resolution	1–4294967295	1	-	At stop	*"6091_en.02h" on page 981*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
6098h	6098h	Homing method	-3–35	1	-	Real-time	*"6098h" on page 982*
6099.01h	6099-01h	Speed during search for switch	0 to 4294967295	11184810 6	Reference unit/s	At stop	*"6099_en.01h" on page 983*
6099.02h	6099-02h	Speed during search for zero	0 to 4294967295	11184810	Reference unit/s	At stop	*"6099_en.02h" on page 983*
609Ah	609Ah	Homing acceleration	0 to 4294967295	42949672 95	Reference unit/s²	Real-time	*"609Ah" on page 983*
60B0h	60B0h	Position offset	-2147483648 to 2147483647	0	Reference unit	Real-time	*"60B0h" on page 984*
60B1h	60B1h	Velocity offset	–2147483648 to +2147483647	0	Reference unit/s	Real-time	*"60B1h" on page 984*
60B2h	60B2h	Torque offset	-4000–4000	0	0.001	Real-time	*"60B2h" on page 984*
60B8h	60B8h	Touch probe function	0–65535	0	-	Real-time	*"60B8h" on page 985*
60B9h	60B9h	Touch probe status	0–65535	0	-	Unchangeable	*"60B9h" on page 986*
60BAh	60BAh	Touch probe 1 positive edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BAh" on page 987*
60BBh	60BBh	Touch probe 1 negative edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BBh" on page 987*
60BCh	60BCh	Touch probe 2 positive edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BCh" on page 988*
60BDh	60BDh	Touch probe 2 negative edge position value	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*"60BDh" on page 988*
60C5h	60C5h	Max. acceleration	0 to 4294967295	42949672 95	Reference unit/s²	Real-time	*"60C5h" on page 988*
60C6h	60C6h	Max. deceleration	0 to 4294967295	42949672 95	Reference unit/s²	Real-time	*"60C6h" on page 988*
60D5h	60D5h	Touch probe 1 positive edge counter	0–65535	0	-	Unchangeable	*"60D5h" on page 989*

Parameter	Communication Address	Name	Value	Default	Unit	Change Mode	Page
60D6h	60D6h	Touch probe 1 negative edge counter	0–65535	0	-	Unchangeable	*" 60D6h" on page 989*
60D7h	60D7h	Touch probe 2 positive edge counter	0–65535	0	-	Unchangeable	*" 60D7h" on page 989*
60D8h	60D8h	Touch probe 2 negative edge counter	0–65535	0	-	Unchangeable	*" 60D8h" on page 990*
60E0h	60E0h	Positive torque limit	0–4000	3500	0.001	Real-time	*" 60E0h" on page 990*
60E1h	60E1h	Negative torque limit	0–4000	3500	0.001	Real-time	*" 60E1h" on page 990*
60F4h	60F4h	Position deviation	-2147483648 to 2147483647	0	Reference unit	Unchangeable	*" 60F4h" on page 990*
60FCh	60FCh	Position reference	-2147483648p to 2147483647p	0	p	Unchangeable	*" 60FCh" on page 991*
60FDh	60FDh	DI state	0–4294967295	0	-	Unchangeable	*" 60FDh" on page 991*
60FFh	60FFh	PV, CSV mode speed reference	–2147483648 to +2147483647	0	Reference unit/s	Real-time	*" 60FFh" on page 992*
60FE.01h	60FE-01h	Physical output	0–4294967295	0	-	Real-time	*" 60FE_en.01h" on page 992*
60FE.02h	60FE-02h	Bitmask	0–4294967295	0	-	Real-time	*" 60FE_en.02h" on page 993*

4 Description of Parameters [N]

4.1 H00 Servo Motor Parameters

H00.00 Motor SN

Hex:	2000-01h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	14101	Change:	At stop

Value Range:

20000: Linear motor - pulse encoder
14202: Linear motor - Inovance 23-bit encoder
20001: DDR motor - pulse encoder
14201: DDR motor - Inovance communication 23-bit encoder
20002: Rotary motor - pulse encoder
14000: Rotary motor - Inovance communication 20-bit encoder
14101: Rotary motor - Inovance communication 23-bit encoder
14020: Rotary motor - Harmonic 20-bit encoder - 2.5M baud rate
14021: Rotary motor - Harmonic 17-bit encoder - 2.5M baud rate
14022: Rotary motor - Harmonic 17-bit encoder - 4M baud rate
14120: Rotary motor - Nikon 20-bit encoder - 2.5M baud rate
14121: Rotary motor - Nikon 17-bit encoder - 2.5M baud rate
14122: Rotary motor - Nikon 17-bit encoder - 4M baud rate
14130: Rotary motor - TAMAGAWA 17-bit encoder
14131: Rotary motor - TAMAGAWA 23-bit encoder

Description

20000: Linear motor - pulse encoder
14202: Linear motor - Inovance 23-bit encoder
20001: DDR motor - pulse encoder
14201: DDR motor - Inovance communication 23-bit encoder
20002: Rotary motor - pulse encoder
14000: Rotary motor - Inovance communication 20-bit encoder
14101: Rotary motor - Inovance communication 23-bit encoder
14020: Rotary motor - Harmonic 20-bit encoder - 2.5M baud rate
14021: Rotary motor - Harmonic 17-bit encoder - 2.5M baud rate
14022: Rotary motor - Harmonic 17-bit encoder - 4M baud rate
14120: Rotary motor - Nikon 20-bit encoder - 2.5M baud rate
14121: Rotary motor - Nikon 17-bit encoder - 2.5M baud rate
14122: Rotary motor - Nikon 17-bit encoder - 4M baud rate
14130: Rotary motor - TAMAGAWA 17-bit encoder
14131: Rotary motor - TAMAGAWA 23-bit encoder

H00.02 **Customized No.**

Hex:	2000-03h	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	4294967295.00	Data Type:	UInt32
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–4294967295.00

Description

Differentiates the customized MCU software version, which is not applicable to standard models.

H00.04 **Encoder version**

Hex:	2000-05h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–6553.5

Description

Saved in the encoder and used to differentiate the encoder software version.

H00.05 **Serial-type motor code**

Hex:	2000-06h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays the code of the serial-type motor, which is determined by the motor model and unchangeable.

H00.06 **FPGA customized SN**

Hex:	2000-07h	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–655.35

Description

Differentiates the customized FPGA software version, which is not applicable to standard models.

H00.07 STO version

Hex:	2000-08h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	655.4	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–655.4

Description

Display the software version number of STO function.

H00.08 Bus encoder type

Hex:	2000-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

14100: Multi-turn absolute encoder
Others: Single-turn absolute encoder

H00.40 Motor control type

Hex:	2000-29h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: General-purpose rotary motor (ROT)
1: Direct drive rotary motor (DDR)
2: Direct drive linear motor (DDL)
3: Voice coil motor (VOL)

Description

The motor type supported by the drive.
0: General-purpose rotary motor (ROT)
1: Direct drive rotary motor (DDR)
2: Direct drive linear motor (DDL)
3: Voice coil motor (VOL)

H00.45 Encoder pitch 1

Hex:	2000-2Eh	Effective mode:	Upon the next power-on
Min.:	0.01	Unit:	[mm]/[deg]
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	At stop

Value Range:
0.01[mm]/[deg]–655.35[mm]/[deg]
Description
Defines the encoder pitch characteristics, which should be used together with encoder pitch fluctuation suppressor 1 (see details in H08.90).

H00.46 Encoder pitch 2

Hex:	2000-2Fh	Effective mode:	Upon the next power-on
Min.:	0.01	Unit:	[mm]/[deg]
Max.:	655.35	Data Type:	UInt16
Default:	0.50	Change:	At stop

Value Range:
0.01[mm]/[deg]–655.35[mm]/[deg]
Description
Defines the encoder pitch characteristics, which should be used together with encoder pitch fluctuation suppressor 2 (see details in H08.90).

H00.48 Linear motor pole pitch (N-S)

Hex:	2000-31h	Effective mode:	Upon the next power-on
Min.:	0.00	Unit:	mm
Max.:	655.35	Data Type:	UInt16
Default:	16.00	Change:	At stop

Value Range:
0.00 millimeters–655.35 millimeters
Description
Linear motor pole pitch.

H00.49 **Direct drive motor encoder resolution**

Hex:	2000-32h	Effective mode:	Upon the next power-on
Min.:	0.000	Unit:	um/p
Max.:	65.535	Data Type:	UInt16
Default:	1.000	Change:	At stop

Value Range:

0.000um/p–65.535um/p

Description

Direct drive motor encoder resolution.

H00.55 **Rated torque**

Hex:	2000-38h	Effective mode:	Upon the next power-on
Min.:	0.00	Unit:	[N]/[N·m]
Max.:	42949672.95	Data Type:	UInt32
Default:	2.00	Change:	At stop

Value Range:

0.00[N]/[N·m]–42949672.95[N]/[N·m]

Description

-

H00.57 **Max. torque**

Hex:	2000-3Ah	Effective mode:	Upon the next power-on
Min.:	0.00	Unit:	[N]/[N·m]
Max.:	42949672.95	Data Type:	UInt32
Default:	7.00	Change:	At stop

Value Range:

0.00[N]/[N·m]–42949672.95[N]/[N·m]

Description

-

H00.59 **Encoder counting direction**

Hex:	2000-3Ch	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Forward

1: Reverse

Description
Motor phase sequence:
0: Forward
1: Reverse

4.2 H01 Servo Drive Parameters

H01.00 MCU software version

Hex:	2001-01h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0–6553.5
Description
Displays MCU software version (with one decimal place).

H01.01 FPGA software version

Hex:	2001-02h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0–6553.5
Description
Displays the FPGA software version, with 1 decimal place.

H01.02 Servo drive series No.

Hex:	2001-03h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
Display servo drive serial number, with 0 decimal place.

H01.06 **Board software version**

Hex:	2001-07h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–6553.5

Description

Display board software version number, with 1 decimal place.

H01.10 **Drive series No.**

Hex:	2001-0Bh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	3	Change:	At stop

Value Range:

2: S1R6
3: S2R8
5: S5R5
6: S7R6
7: S012
8: S018
9: S022
10: S027
10001: T3R5
10002: T5R4
10003: T8R4
10004: T012
10005: T017
10006: T021
10007: T026

Description

Displays the drive series number, with no decimal place.

H01.11 **DC-AC voltage class**

Hex:	2001-0Ch	Effective mode:	-
Min.:	0	Unit:	V
Max.:	65535	Data Type:	UInt16
Default:	220	Change:	Unchangeable

Value Range:
0 V–65535 V
Description
Display inverter voltage level, with 0 decimal place.

H01.12 Drive rated power

Hex:	2001-0Dh	Effective mode:	-
Min.:	0.00	Unit:	kW
Max.:	10737418.24	Data Type:	UInt32
Default:	0.40	Change:	Unchangeable

Value Range:
0.00 kW–10737418.24kW
Description
Display the rated power of the drive, with 2 decimal places.

H01.14 Max. output power of the drive

Hex:	2001-0Fh	Effective mode:	-
Min.:	0.00	Unit:	kW
Max.:	10737418.24	Data Type:	UInt32
Default:	0.40	Change:	Unchangeable

Value Range:
0.00 kW–10737418.24kW
Description
Displays the maximum output power of the drive, with 2 decimal places.

H01.16 Rated output current of the drive

Hex:	2001-11h	Effective mode:	-
Min.:	0.00	Unit:	A
Max.:	10737418.24	Data Type:	UInt32
Default:	2.80	Change:	Unchangeable

Value Range:
0.00 A–10737418.24 A
Description
Displays the rated output current of the drive, with 2 decimal places.

H01.18 Max. output current of the drive

Hex:	2001-13h	Effective mode:	-

Min.:	0.00	Unit:	A
Max.:	10737418.24	Data Type:	UInt32
Default:	10.10	Change:	Unchangeable

Value Range:

0.00 A–10737418.24 A

Description

Displays the maximum output current of the drive, with 2 decimal places.

H01.40 **DC bus overvoltage protection threshold**

Hex:	2001-29h	Effective mode:	Real time
Min.:	0	Unit:	V
Max.:	2000	Data Type:	UInt16
Default:	420	Change:	Real-time

Value Range:

0 V–2000 V

Description

Displays DC bus overvoltage protection threshold, with 0 decimal place.

H01.75 **Current loop amplification factor**

Hex:	2001-4Ch	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00–655.35

Description

Displays current loop amplification coefficient, with 2 decimal places.

H01.88 **Junction temperature parameter version 1**

Hex:	2001-59h	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0–6553.5

Description

Displays version 1 of the junction temperature parameter.

H01.89 **Junction temperature parameter version 2**

Hex:	2001-5Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays version 2 of the junction temperature parameter.

H01.90 **Motor property mask**

Hex:	2001-5Bh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

The setpoint 1 indicates the bit function of H0060 is being masked.

4.3 H02 Basic Control Parameters

H02.00 **Control mode**

Hex:	2002-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	9	Change:	At stop

Value Range:

0: Velocity mode

1: Position mode

2: Torque mode

9: EtherCAT mode

Description

0: Velocity mode

1: Position mode

2: Torque mode

9: EtherCAT mode

H02.01 **Absolute system selection**

Hex:	2002-02h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Incremental mode

1: Absolute position linear mode

2: Absolute position rotation mode

3: Absolute position linear mode (without encoder overflow alarm)

4: Absolute position single-turn mode

Description

Used to set the absolute position function.

H02.02 **Rotation direction selection**

Hex:	2002-03h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Counterclockwise (CCW) as forward direction

1: Clockwise (CW) as forward direction

Description

Defines the forward direction of the motor when viewed from the motor shaft side.

H02.03 **Output pulse phase**

Hex:	2002-04h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Phase A leads phase B

1: Phase A lags behind phase B

Description

Defines the relationship between phase A and phase B on the condition that the motor direction of rotation remains unchanged when pulse output is enabled.

H02.05 Stop mode at S-ON OFF

Hex:	2002-06h	Effective mode:	At stop
Min.:	-4	Unit:	-
Max.:	2	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

–4: Ramp to stop as defined by 6085h, keeping dynamic braking state
–3: at zero speed, keeping dynamic braking state
–2: Ramp to stop as defined by 6084h/609Ah (HM), keeping dynamic braking state
–1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state
2: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the motor for stopping rotating upon S-ON OFF and the motor status after stop.
Note: If the brake is enabled, H02.05 is forced to –4: Ramp to stop as defined by 6085h, keeping dynamic braking state.

H02.06 Stop mode at No. 2 fault

Hex:	2002-07h	Effective mode:	At stop
Min.:	-5	Unit:	-
Max.:	4	Data Type:	Int16
Default:	2	Change:	Real-time

Value Range:

–5: Stop at zero speed, keeping dynamic braking state
–4: Stop at emergency stop torque, keeping dynamic braking state
–3: Ramp to stop as defined by 6085h, keeping dynamic braking state
–2: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping dynamic braking state
–1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping de-energized state
2: Ramp to stop as defined by 6085h, keeping de-energized state
3: Stop at emergency stop torque, keeping de-energized state
4: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when a No. 2 fault occurs.
Note: If the brake is enabled, H02.06 is forced to –3: Ramp to stop as defined by 6085h, keeping dynamic braking state.

H02.07 Stop mode at overtravel

Hex:	2002-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Coast to stop, keeping de-energized state
1: Stop at zero speed, keeping position lock state
2: Stop at zero speed, keeping de-energized state
3: Stop based on ramp, keeping de-energized state
4: Stop based on ramp, keeping position lock state
5: Dynamic braking stop, keeping de-energized state
6: Dynamic braking stop, keeping dynamic braking state
7: Not responding to overtravel

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when overtravel occurs.
Note: When H02.07 is set to 7 (Not responding to overtravel), some PLC may stop sending position references to stop the drive.
Note: After the brake function is enabled, H02.07 will be forcibly set to "4: Ramp to stop as defined by 6085h, keeping position lock state".

H02.08 Stop mode at No.1 fault

Hex:	2002-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0: Coast to stop, keeping de-energized state
1: Dynamic braking stop, keeping de-energized state
2: Dynamic braking stop, keeping dynamic braking state

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when a No. 1 fault occurs.
Note: After the brake function is enabled, H02.08 will be forcibly set to "2: Dynamic braking stop, keeping dynamic braking state".

H02.09 Delay from brake output ON to command received

Hex:	2002-0Ah	Effective mode:	At stop
Min.:	0	Unit:	ms
Max.:	500	Data Type:	UInt16
Default:	250	Change:	Real-time

Value Range:
0 ms–500 ms
Description
Defines the delay from the moment the brake output signal is ON to the moment the servo drive starts to receive commands after power-on.

H02.10 Delay from brake output OFF to motor de-energized

Hex:	2002-0Bh	Effective mode:	Real time
Min.:	50	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:
50 ms–1000 ms
Description
Defines the delay from the moment brake output is OFF to the moment when the motor at standstill enters the de-energized status.

H02.11 Motor speed threshold at brake output OFF in rotation state

Hex:	2002-0Ch	Effective mode:	Real time
Min.:	20	Unit:	RPM
Max.:	3000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:
20 rpm to 3000 rpm
Description
Defines the motor speed threshold when brake (BK) output is OFF in the rotating state.

H02.12 Delay from S-ON OFF to brake output OFF in rotation state

Hex:	2002-0Dh	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:

1 ms–65535 ms

Description

Sets the delay time from BK OFF to S-ON OFF when the motor is in rotating state.

H02.15 LED Alarm Display

Hex:	2002-10h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output alarm information immediately

1: Not output alarm information

Description

Defines whether to switch the keypad to the fault display mode when a No. 3 fault occurs.

H02.17 Stop mode upon main circuit power failure

Hex:	2002-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Keep current action

1: Stop upon fault as defined by H02.06

2: Stop at S-ON OFF as defined by H02.05

3: Stop quickly as defined by H02.18

Description

Defines the stop mode of the motor for stopping rotating upon main circuit power failure.

H02.18 **Quick stop mode**

Hex:	2002-13h	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state
2: Ramp to stop as defined by 6085h, keeping de-energized state
3: Stop at emergency stop torque, keeping de-energized state
5: Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock state
6: Ramp to stop as defined by 6085h, keeping position lock state
7: Stop at emergency stop torque, keeping position lock state

Description

Defines the deceleration mode of the motor for stopping rotating upon quick stop and the motor status after stop.
Note: When the brake function is enabled and the value of H02.18 is lower than 4, the stop mode is forcibly set to "2: Ramp to stop as defined by 6085h, keeping de-energized state".

H02.21 **Permissible minimum resistance of braking resistor**

Hex:	2002-16h	Effective mode:	-
Min.:	1	Unit:	Ω
Max.:	1000	Data Type:	UInt16
Default:	40	Change:	Unchangeable

Value Range:

1Ω to 1000Ω

Description

-

H02.22 **Power of built-in braking resistor**

Hex:	2002-17h	Effective mode:	-
Min.:	0	Unit:	W
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Unchangeable

Value Range:

0W–65535W

Description

The power of the built-in braking resistor is only related to the servo drive model, which is unmodifiable.

H02.23 Resistance of built-in braking resistor

Hex:	2002-18h	Effective mode:	-
Min.:	0	Unit:	Ω
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Unchangeable

Value Range:

0Ω to 65535Ω

Description

The resistance of the built-in braking resistor is only related to the servo drive model, which is unmodifiable.

H02.24 Resistor heat dissipation coefficient

Hex:	2002-19h	Effective mode:	Real time
Min.:	10	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

10% to 100%

Description

Defines the heat dissipation coefficient of the braking resistor, which is applicable to both external and built-in braking resistors.

Defines the heat dissipation coefficient of the braking resistor, which is applicable to both external and built-in braking resistors.

Set this parameter properly according to actual heat dissipation conditions of the resistor.

Recommendations:

Generally, the value of H02.24 cannot exceed 30% for natural cooling.

The value of H02.24 cannot exceed 50% for forced air cooling.

H02.25 Braking resistor type

Hex:	2002-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:
0: Built-in
1: External, natural cooling
2: External, forced air cooling
3: No resistor needed
Description
Defines the resistor type and the mode of absorbing and releasing the braking energy.

H02.26 Power of external braking resistor

Hex:	2002-1Bh	Effective mode:	Real time
Min.:	1	Unit:	W
Max.:	65535	Data Type:	UInt16
Default:	40	Change:	Real-time

Value Range:
1 W–65535W
Description
Defines the power of external braking resistor.

H02.27 Resistance of external braking resistor

Hex:	2002-1Ch	Effective mode:	Real time
Min.:	15	Unit:	Ω
Max.:	1000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
15Ω to 1000Ω
Description
Defines the resistance of the external braking resistor.

H02.28 Parameters Initialization

Hex:	2002-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Parameters in group H02 and above initialized
1: Parameters in group H00, H02 and above initialized
2: All parameters initialized (default values used for model-related parameters)

Description

Settings of factory restore.

0: Parameters in group H02 and above initialized

1: Parameters in group H00, H02 and above initialized

2: All parameters initialized (default values used for model-related parameters)

H02.30 User password

Hex:	2002-1Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

-

H02.31 System parameter initialization

Hex:	2002-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Restore default settings

2: Clear fault records

Description

Used to restore default values or clear fault records.

H02.32 Selection of parameters in group H0b

Hex:	2002-21h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0–99

Description

Sets the offset of H0b parameters to be displayed on the operating panel.

For example, the setpoint 0 indicates the value of H0b.00 (Motor speed actual value) is displayed on the keypad.
The setpoint 1 indicates the value of H0b.01 is displayed on the operating panel.

H02.35 Keypad data update frequency

Hex:	2002-24h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 Hz–20 Hz
Description
-

H02.38 Overload time of external resistor

Hex:	2002-27h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	s
Max.:	200	Data Type:	UInt16
Default:	40	Change:	Real-time

Value Range:
0s to 200s
Description
Set the overload time threshold of the external braking resistor.

H02.41 Manufacturer password

Hex:	2002-2Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–65535
Description
-

H02.47 Delay time from power cable breakage to brake OFF

Hex:	2002-30h	Effective mode:	Real time
Min.:	0	Unit:	ms

Max.:	1000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–1000 ms

Description

Sets the delay time from power cable breakage to brake OFF.

4.4 H03 Terminal Input Parameters

H03.02 **DI1 function**

Hex:	2003-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	14	Change:	Real-time

Value Range:

0: Undefined
1: Servo enabled
2: Alarm reset signal
5: Multi-run reference direction selection
6: Multi-run reference switching CMD1
7: Multi-run reference switching CMD2
8: Multi-run reference switching CMD3
9: Multi-run reference switching CMD4
14: Positive limit switch
15: Negative limit switch
18: Forward jog
19: Reverse jog
24: Electronic gear selection
28: Multi-position reference enabled
31: Home switch
34: Emergency stop
38: Probe 1
39: Probe 2
40: Multi-speed enabled

Description

Defines the function of DI1.

H03.03 **DI1 logic selection**

Hex:	2003-04h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

Used to set the level logic of DI1 when the function assigned to DI is active.

H03.04 DI2 function

Hex:	2003-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:

See H03.02.

Description

-

H03.05 DI2 logic selection

Hex:	2003-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H03.06 DI3 function

Hex:	2003-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	31	Change:	Real-time

Value Range:

See H03.02.

Description

Defines the function of DI3.

H03.07 **DI3 logic selection**

Hex:	2003-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Normally open
1: Closed
Description
-

H03.08 **DI4 function**

Hex:	2003-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	34	Change:	Real-time

Value Range:
See H03.02.
Description
-

H03.09 **DI4 logic selection**

Hex:	2003-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Normally open
1: Closed
Description
-

H03.10 **DI5 function**

Hex:	2003-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	38	Change:	Real-time

Value Range:

See H03.02.

Description

-

H03.11 DI5 logic selection

Hex:	2003-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open

1: Closed

Description

-

H03.50 Voltage-type AI1 offset

Hex:	2003-33h	Effective mode:	Real time
Min.:	-5000	Unit:	mV
Max.:	5000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-5000 mV–5000 mV

Description

Defines the actual AI1 input voltage when the drive sampling voltage is 0 after zero drift correction.

H03.51 Voltage-type AI1 input filter time constant

Hex:	2003-34h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00 ms–655.35 ms

Description

It sets the filter time constant of voltage signal input from AI1.

Set this parameter properly to avoid motor reference fluctuation caused by unstable analog voltage input and reduce motor misoperation caused by interference signals.

The filter function cannot eliminate or suppress zero drift or dead zone.

H03.53 Voltage-type AI1 dead zone

Hex:	2003-36h	Effective mode:	Real time
Min.:	0.0	Unit:	mV
Max.:	1000.0	Data Type:	UInt16
Default:	10.0	Change:	Real-time

Value Range:

0.0 mV–1000.0 mV

Description

Defines the AI1 input voltage range when the drive sampling voltage is 0.

H03.54 Voltage-type AI1 zero drift

Hex:	2003-37h	Effective mode:	Real time
Min.:	-500.0	Unit:	mV
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-500.0 mV–500.0 mV

Description

Zero drift refers to the value of the drive o sampling voltage relative to GND upon zero AI voltage.

Set H0d.10 (Automatic adjustment of analog channels) to 1 (AI1 adjustment) to perform automatic adjustment on AI1 zero drift. The AI1 zero drift after adjustment will be saved into H03.54.

H03.55 Voltage-type AI2 offset

Hex:	2003-38h	Effective mode:	Real time
Min.:	-5000	Unit:	mV
Max.:	5000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-5000 mV–5000 mV

Description

Defines the actual AI2 input voltage when the drive sampling voltage is 0 after zero drift correction.

H03.56 Voltage-type AI2 input filter time constant

Hex:	2003-39h	Effective mode:	Real time

Min.:	0.00	Unit:	ms
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00 ms–655.35 ms

Description

It sets the filter time constant of voltage signal input from AI2.

Set this parameter properly to avoid motor reference fluctuation caused by unstable analog voltage input and reduce motor misoperation caused by interference signals.

The filter function cannot eliminate or suppress zero drift or dead zone.

H03.58 Voltage-type AI2 dead zone

Hex:	2003-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	mV
Max.:	1000.0	Data Type:	UInt16
Default:	10.0	Change:	Real-time

Value Range:

0.0 mV–1000.0 mV

Description

Defines the AI2 input voltage range when the drive sampling voltage is 0.

H03.59 Voltage-type AI2 zero drift

Hex:	2003-3Ch	Effective mode:	Real time
Min.:	-500.0	Unit:	mV
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-500.0 mV–500.0 mV

Description

Zero drift refers to the value of the drive o sampling voltage relative to GND upon zero AI voltage.

Set H0d.10 (Automatic adjustment of analog channels) to 1 (AI2 adjustment) to perform automatic adjustment on AI2 zero drift. The AI1 zero drift after adjustment will be saved into H03.59.

H03.60 DI1 fitter time

Hex:	2003-3Dh	Effective mode:	Real time

Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI1. The DI function is active only after the effective level is kept within the time defined by H03.60.

H03.61 **DI2 fitter time**

Hex:	2003-3Eh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI2. The DI function is active only after the effective level is kept within the time defined by H03.61.

H03.62 **DI3 fitter time**

Hex:	2003-3Fh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI3. The DI function is active only after the effective level is kept within the time defined by H03.62.

H03.63 **DI4 fitter time**

Hex:	2003-40h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI4. The DI function is active only after the effective level is kept within the time defined by H03.63.

H03.64 DI5 fitter time

Hex:	2003-41h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Real-time

Value Range:

0.00 ms–500.00 ms

Description

Defines the filter time of DI5. The DI function is active only after the effective level is kept within the time defined by H03.64.

H03.80 Speed corresponding to analog 10 V

Hex:	2003-51h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	3000	Change:	At stop

Value Range:

0rpm to 10000rpm

Description

Defines the corresponding motor speed when the sampling voltage is 10 V.

Speed reference value = Sampling voltage/10 x H03.80

H03.81 Torque corresponding to analog 10 V

Hex:	2003-52h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	8.00	Data Type:	UInt16
Default:	1.00	Change:	At stop

Value Range:

0.00–8.00

Description

Defines the motor torque corresponding to a sampling voltage of 10 V.

Torque reference value = Sampling voltage/10 × H03.81

4.5 H04 Terminal Output Parameters

H04.00 DO1 function

Hex:	2004-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Undefined
1: Servo ready
2: Motor rotation signal
9: Braking
10: Warning
11: Failure
25: Comparison DO

26: Closed-loop state
31: Forced communication DO
32: EDM output

Description

Defines the function of DO1.

H04.01 DO1 logic selection

Hex:	2004-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open
1: Closed

Description

Defines the level logic of DO1 when the function assigned to DO is active.

H04.02 DO2 function

Hex:	2004-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	9	Change:	Real-time

Value Range:

0: Undefined
1: Servo ready
2: Motor rotation signal
9: Braking
10: Warning
11: Failure
25: Comparison DO

26: Closed-loop state
31: Forced communication DO
32: EDM output

Description

-

H04.03 DO2 logic selection

Hex:	2004-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Normally open
1: Closed

Description

-

H04.22 DO source selection

Hex:	2004-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	DO1 output source	0: DO1 function output
		1: Bit 0 of H31.04 set through communication
1	DO2 output source	0: DO2 function output
		1: Bit 1 of H31.04 set through communication

Description

Defines whether the logic of a physical DO terminal is defined by the actual state of the drive or by communication.

H04.23 ECAT communication-forced DO logic in non-OP status

Hex:	2004-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	DO1	0: Status unchanged
		1: No output
1	DO2	0: Status unchanged
		1: No output

Description

Sets DO state upon ECAT communication failure.

H04.50 AO1 signal selection

Hex:	2004-33h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Motor speed (1 V/1000 rpm)
1: Speed reference (1 V/1000 rpm)
2: Torque reference (1 V/100 x rated torque)
3: Position deviation (0.5 mV/1 reference unit)
4: Position deviation (0.5 mV/1 encoder unit)
5: Position reference speed (1 V/1000 rpm)
6: Positioning completed
8: AI1 voltage
9: AI2 voltage
10: Defined by H31.05

Description

Defines the physical value source of AO1.

H04.51 **AO1 offset voltage**

Hex:	2004-34h	Effective mode:	Real time
Min.:	-10000	Unit:	mV
Max.:	10000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-10000 mV–10000 mV

Description

Defines the actual AO1 output voltage after offset when the output voltage is 0 V in theory.

H04.52 **AO1 ratio**

Hex:	2004-35h	Effective mode:	Real time
Min.:	-99.99	Unit:	-
Max.:	99.99	Data Type:	Int16
Default:	1.00	Change:	Real-time

Value Range:

-99.99–99.99

Description

Defines the actual AO1 output voltage after amplification when the output voltage is 1V in theory.

4.6 H05 Position Control Parameters

H05.00 **Primary position reference source**

Hex:	2005-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

2: Multi-position reference

Description

Defines the position reference source in position control mode.

H05.02 **Pulses per revolution**

Hex:	2005-03h	Effective mode:	Upon the next power-on

Min.:	0	Unit:	PPR
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0 PPR to 4294967295 PPR

Description

Defines the number of pulses required per revolution of the motor.

H05.04 First-order low-pass filter time constant

Hex:	2005-05h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0 ms–6553.5 ms

Description

Defines the first-order low pass filter time constant of position references.

H05.06 Moving average filter time constant 1

Hex:	2005-07h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	128.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0 ms–128.0 ms

Description

Defines the moving average filter time constant of position references.

H05.07 Electronic gear ratio 1 (numerator)

Hex:	2005-08h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	1	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the numerator of electronic gear ratio 1.

H05.09 **Electronic gear ratio 1 (denominator)**

Hex:	2005-0Ah	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	1	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the denominator of electronic gear ratio 1.

H05.11 **Electronic gear ratio 2 (numerator)**

Hex:	2005-0Ch	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	1	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the numerator of electronic gear ratio 2.

H05.13 **Electronic gear ratio 2 (denominator)**

Hex:	2005-0Eh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data Type:	UInt32
Default:	1	Change:	Real-time

Value Range:

1–1073741824

Description

Defines the denominator of electronic gear ratio 2.

H05.16 **Clear action**

Hex:	2005-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Position deviation cleared upon S-ON OFF or fault
1: Position deviation cleared upon S-ON OFF or fault
2: Position deviation cleared upon active DI function 35 or non-operational state

Description

Defines the condition for clearing the position deviation.

H05.17 Number of encoder frequency-division pulses

Hex:	2005-12h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	PPR
Max.:	4194303	Data Type:	UInt32
Default:	2500	Change:	At stop

Value Range:

0 PPR to 4194303 PPR

Description

Defines the number of pulses output by PAO or PBO per revolution.
Pulse output resolution per revolution = (H05.17) x 4

H05.19 Speed feedforward control

Hex:	2005-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: No speed feedforward
1: Internal speed feedforward
2: H05.72
3: Zero phase

Description

Defines the source of the speed loop feedforward signal.
When the external speed feedforward is set, the feedforward source is set by H05.72.

H05.21 Threshold of positioning completed

Hex:	2005-16h	Effective mode:	Real time
Min.:	1	Unit:	Encoder unit
Max.:	65535	Data Type:	UInt16
Default:	46976	Change:	Real-time

Value Range:

1 to 65535

Description

Defines the threshold of the absolute value of position deviation when the drive outputs the positioning completed signal.

H05.22 Proximity threshold

Hex:	2005-17h	Effective mode:	Real time
Min.:	1	Unit:	Encoder unit
Max.:	65535	Data Type:	UInt16
Default:	65535	Change:	Real-time

Value Range:

1 to 65535

Description

Defines the threshold of the absolute value of position deviation when the drive outputs the proximity signal.

H05.30 Homing enable selection

Hex:	2005-1Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	6	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled6: Current position as home

Description

Defines the homing mode and the trigger signal source.

H05.35 Home search time limit

Hex:	2005-24h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:

0–65535

Description

Set the maximum home search time, depending on the setting of H05.66.

H05.36 Mechanical home offset

Hex:	2005-25h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the absolute position of the motor after homing.

H05.38 Frequency-division output source

Hex:	2005-27h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Encoder frequency-division output

2: Frequency-division output inhibited

3: Second encoder frequency-division output

4: H31.01 reference frequency output

Description

Defines the output source of the pulse output terminal.

H05.39 Electronic gear ratio switchover condition

Hex:	2005-28h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Switchover after position reference is kept 0 for 2.5 ms

1: Switched in real time

Description

Defines the condition for switching the electronic gear ratio. After the fully closed-loop function is enabled and H0F.00 is set to 2, the setpoint is forcibly set to 0.

When its value is 0: when H0F.00 = 2, the switching condition is that the position command is 0 and positioning is completed and lasts for 2.5 ms; when H0F.00 is not 2, the switching condition is that the position command keeps at 0 for 2.5 ms.

H05.40 **Mechanical home offset and action upon overtravel**

Hex:	2005-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: H05.36 as the coordinate after homing, reverse homing applied after homing triggered again on overtravel

1: H05.36 as the relative offset after homing, reverse homing applied after homing triggered again on overtravel

2: H05.36 as the coordinate after homing, reverse homing auto-applied on overtravel

3: H05.36 as the relative offset after homing, reverse homing auto-applied on overtravel

Description

Defines the offset relationship between the mechanical home and mechanical zero point, and the action upon overtravel during homing.

H05.41 **Z pulse output polarity**

Hex:	2005-2Ah	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

bit	Name	Description
0	Frequency-division Z output polarity	0: Positive (high level upon active Z pulse)
		1: Negative (low level upon active Z pulse)
1	OCZ output polarity	0: Positive (high level upon active Z pulse)
		1: Negative (low level upon active Z pulse)
2	Inner loop probe Z signal source	0: Motor Z signal
		1: Frequency-division output Z signal

Description

Defines the output level when the Z pulse of pulse output terminal is active.

H05.44 Numerator of frequency-division output reduction ratio

Hex:	2005-2Dh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16383	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–16383

Description

Defines the numerator of frequency-division output reduction ratio.

H05.45 Denominator of frequency-division output reduction ratio

Hex:	2005-2Eh	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	8191	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–8191

Description

Defines the denominator of frequency-division output reduction ratio.

H05.46 DI selection of multi-turn frequency-division Z starting point

Hex:	2005-2Fh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: No operation
1: DI1
2: DI2
3: DI3
4: DI4
5: DI5

Description

Sets the start point for frequency-division output. It is only effective when the frequency division ratio is greater than 1.

H05.47 Frequency-division Z pulse width

Hex:	2005-30h	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	400	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0us to 400us

Description

Defines the minimum output width (us) of frequency-division output PZ. When the pulse signal is used as master encoder and fully closed-loop encoder, the setpoint 0 indicates the original Z signal will be outputted. Other setpoints indicate the frequency-division Z signal will be output.

H05.48 Frequency-division output dead zone setting threshold

Hex:	2005-31h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–255

Description

Defines the dead zone threshold of frequency-division output to prevent frequency-division output caused by encoder jitter.

H05.50 Mechanical gear ratio in absolute position rotation mode (numerator)

Hex:	2005-33h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–65535

Description

Defines the transmission ratio between the mechanical rotary load and the motor in the absolute position rotation mode.

H05.51 Mechanical gear ratio in absolute position rotation mode (denominator)

Hex:	2005-34h	Effective mode:	Real time

Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–65535

Description

Defines the transmission ratio between the mechanical rotary load and the motor in the absolute position rotation mode.

H05.52 Pulses per revolution of the load in absolute position rotation mode (low 32 bits)

Hex:	2005-35h	Effective mode:	Real time
Min.:	0	Unit:	Encoder unit
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0 to 4294967295

Description

Defines the number of pulses per revolution of the rotary load in the absolute position rotation mode.

H05.54 Pulses per revolution of the load in absolute position rotation mode (high 32 bits)

Hex:	2005-37h	Effective mode:	Real time
Min.:	0	Unit:	Encoder unit
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0 to 4294967295

Description

Defines the number of pulses per revolution of the rotary load in the absolute position rotation mode.

H05.58 Torque threshold in homing upon hit-and-stop

Hex:	2005-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the maximum positive/negative torque limit in homing upon hit-and-stop.

H05.60 Hold time of positioning completed

Hex:	2005-3Dh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	30000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–30000 ms

Description

Defines the hold time of an active positioning completed signal.

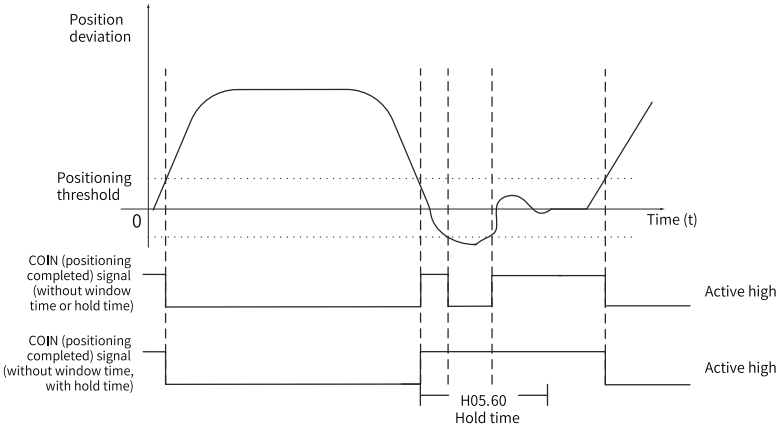


Figure 4-1 Schematic diagram for the window time (H05.59) and hold time (H05.60) of positioning completed signal

When the COIN (positioning completed) signal has a hold time of 0, it remains active until the next position reference is received.

H05.66 Homing time unit

Hex:	2005-43h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	2	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0: 1 ms

1: 10 ms

2: 100 ms

Description

Defines the homing time unit. The actual timeout time is H05.35 x H05.66 ms.

H05.71 Motor Z signal width

Hex:	2005-48h	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	4	Change:	Real-time

Value Range:

1 ms–100 ms

Description

Output pulse width when motor Z signal is active.

H05.72 External speed feedforward source selection

Hex:	2005-49h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: 60B1

1: AI1

2: AI2

Description

External speed feedforward source selection

4.7 H06 Speed Control Parameters

H06.00 Source of main speed reference A

Hex:	2006-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16

Default:	0	Change:	At stop

Value Range:

0: Digital setting (H06.03)

1: AI1

2: AI2

Description

Defines the source of main speed reference A.

H06.01 Source of auxiliary speed reference B

Hex:	2006-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Digital setting (H06.03)

1: AI1

2: AI2

5: Multi-speed reference

Description

Defines the source of auxiliary speed reference B.

H06.02 Speed reference source

Hex:	2006-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Source of main speed reference A

1: Source of auxiliary speed reference B

2: A+B

3: Switched between A and B

4: Communication

Description

Defines the source of speed references.

H06.03 Speed reference set through keypad

Hex:	2006-04h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM

Max.:	10000	Data Type:	Int16
Default:	200	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

Defines the speed reference value set through the keypad.

H06.04 DI jog speed reference

Hex:	2006-05h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	150	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the DI jog speed reference.

H06.05 Acc. ramp time of speed reference

Hex:	2006-06h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Sets acceleration ramp time of speed reference. The acceleration/deceleration time constant of multi-speed references are defined only by parameters in group H12.

H06.05 defines the time for the speed reference to change from 0 rpm to 1000 rpm.

H06.06 defines the time for the speed reference to change from 1000 rpm to 0 rpm.

The formulas for calculating the actual acceleration/deceleration time are as follows:

Actual acceleration time t1= Speed reference ÷ 1000 x Acceleration ramp time of speed reference

Actual deceleration time t2= Speed reference ÷ 1000 x Deceleration ramp time of speed reference

H06.06 **Dec. ramp time of speed reference**

Hex:	2006-07h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Sets deceleration ramp time of speed reference.

H06.07 **Maximum speed limit**

Hex:	2006-08h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the maximum speed limit.

H06.08 **Forward speed threshold**

Hex:	2006-09h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the forward speed threshold.

H06.09 **Reverse speed threshold**

Hex:	2006-0Ah	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the reverse speed threshold.

H06.10 Deceleration unit in emergency stop

Hex:	2006-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Multiplied by 1

1: Multiplied by 10

2: Multiplied by 100

Description

Sets the deceleration unit in emergency stop.

H06.11 Torque feedforward control

Hex:	2006-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: No torque feedforward

1: Internal torque feedforward

2: 60B2h as external torque feedforward

Description

Defines the source for torque feedforward control.

H06.12 Acceleration ramp time of jog speed

Hex:	2006-0Dh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Sets the acceleration ramp time of jog speed.

H06.13 Speed feedforward smoothing filter

Hex:	2006-0Eh	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0us to 65535us

Description

Defines the speed feedforward smoothing filter time.

H06.15 Zero clamp speed threshold

Hex:	2006-10h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the zero clamp speed threshold.

H06.16 Threshold of TGON (motor rotation) signal

Hex:	2006-11h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

0 rpm to 1000 rpm

Description

Sets the threshold of TGON (motor rotation) signal.

H06.17 Threshold of V-Cmp (speed matching) signal

Hex:	2006-12h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	100	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 RPM –100 RPM

Description
Defines the threshold of speed match signal.

H06.18 Threshold of speed reach signal

Hex:	2006-13h	Effective mode:	Real time
Min.:	20	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:
20rpm to 10000rpm
Description
Defines the threshold of speed reached signal.

H06.19 Threshold of zero speed output signal

Hex:	2006-14h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
1rpm to 10000rpm
Description
Defines the threshold of zero speed output signal.

H06.50 Speed S-curve enable switch

Hex:	2006-33h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
0: Disabled
1: Enabled
Description
0: Accelerate/Decelerate at fixed acceleration rate
1: Accelerate/Decelerate based on the S-curve

H06.51 Increasing acceleration 1 of speed S-curve acceleration segment

Hex:	2006-34h	Effective mode:	Real time

Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.52 Decreasing acceleration 1 of speed S-curve acceleration segment

Hex:	2006-35h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.53 Decreasing deceleration 1 of speed S-curve deceleration segment

Hex:	2006-36h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.54 Decreasing acceleration 1 of speed S-curve deceleration segment

Hex:	2006-37h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16

Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.55 Increasing acceleration 2 of speed S-curve acceleration segment

Hex:	2006-38h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.56 Decreasing acceleration 2 of speed S-curve acceleration segment

Hex:	2006-39h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.57 Decreasing deceleration 2 of speed S-curve deceleration segment

Hex:	2006-3Ah	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.58 Decreasing acceleration 2 of speed S-curve deceleration segment

Hex:	2006-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.59 Increasing acceleration 3 of speed S-curve acceleration segment

Hex:	2006-3Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.60 Decreasing acceleration 3 of speed S-curve acceleration segment

Hex:	2006-3Dh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.61 Decreasing deceleration 3 of speed S-curve deceleration segment

Hex:	2006-3Eh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.62 Decreasing acceleration 3 of speed S-curve deceleration segment

Hex:	2006-3Fh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.63 Increasing acceleration 4 of speed S-curve acceleration segment

Hex:	2006-40h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference. Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.64 Decreasing acceleration 4 of speed S-curve acceleration segment

Hex:	2006-41h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.65 Decreasing deceleration 4 of speed S-curve deceleration segment

Hex:	2006-42h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference. Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.66 Decreasing acceleration 4 of speed S-curve deceleration segment

Hex:	2006-43h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:

0.0% to 100.0%

Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.67 Increasing acceleration 5 of speed S-curve acceleration segment

Hex:	2006-44h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.68 Decreasing acceleration 5 of speed S-curve acceleration segment

Hex:	2006-45h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.69 Decreasing deceleration 5 of speed S-curve deceleration segment

Hex:	2006-46h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.70 Decreasing acceleration 5 of speed S-curve deceleration segment

Hex:	2006-47h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.71 Increasing acceleration 6 of speed S-curve acceleration segment

Hex:	2006-48h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.72 Decreasing acceleration 6 of speed S-curve acceleration segment

Hex:	2006-49h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.73 Decreasing deceleration 6 of speed S-curve deceleration segment

Hex:	2006-4Ah	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.74 Decreasing acceleration 6 of speed S-curve deceleration segment

Hex:	2006-4Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.75 Increasing acceleration 7 of speed S-curve acceleration segment

Hex:	2006-4Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.76 Decreasing acceleration 7 of speed S-curve acceleration segment

Hex:	2006-4Dh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.77 Decreasing deceleration 7 of speed S-curve deceleration segment

Hex:	2006-4Eh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.78 Decreasing acceleration 7 of speed S-curve deceleration segment

Hex:	2006-4Fh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

H06.79 Increasing acceleration 8 of speed S-curve acceleration segment

Hex:	2006-50h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Increasing acceleration time at acceleration segment: The percentage of motor increasing acceleration time in the selected acceleration time.

H06.80 Decreasing acceleration 8 of speed S-curve acceleration segment

Hex:	2006-51h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at acceleration segment: The percentage of motor decreasing acceleration time in the selected acceleration time.

H06.81 Decreasing deceleration 8 of speed S-curve deceleration segment

Hex:	2006-52h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description

8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing deceleration time in the selected deceleration time.

H06.82 Decreasing acceleration 8 of speed S-curve deceleration segment

Hex:	2006-53h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	50.0	Change:	At stop

Value Range:
0.0% to 100.0%
Description
8 groups of S curve smoothing parameters can be set for each speed reference.
Decreasing acceleration time at deceleration segment: The percentage of motor decreasing acceleration time in the selected deceleration time.

4.8 H07 Torque Control Parameters

H07.00 Source of main torque reference A

Hex:	2007-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Keypad (H07.03)
1: AI1
2: AI2
Description
Defines the source of the main torque reference A.

H07.01 Source of auxiliary torque reference B

Hex:	2007-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Keypad (H07.03)
1: AI1
2: AI2

Description

Defines the source of auxiliary torque references.

H07.02 Torque reference source

Hex:	2007-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Source of main torque reference A
1: Source of auxiliary torque reference B
2: Source of A+B
3: Switched between A and B
4: Communication

Description

Selects the source of torque references.

H07.03 Torque reference set through keypad

Hex:	2007-04h	Effective mode:	Real time
Min.:	-400.0	Unit:	%
Max.:	400.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-400.0% to 400.0%

Description

Defines the torque reference value that set through the keypad.

H07.05 Torque reference filter time constant 1

Hex:	2007-06h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	30.00	Data Type:	UInt16
Default:	0.50	Change:	Real-time

Value Range:

0.00 ms–30.00 ms

Description

Defines torque reference source of torque reference filter.

H07.06 Torque reference filter time constant 2

Hex:	2007-07h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	30.00	Data Type:	UInt16
Default:	0.27	Change:	Real-time

Value Range:

0.00 ms–30.00 ms

Description

Defines torque reference source of torque reference filter.

H07.07 Torque Limit source

Hex:	2007-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Positive/Negative internal torque limit

2: T_LMT limit

Description

Defines the torque reference source of torque limit source.

H07.08 T-LMT selection

Hex:	2007-09h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

1: AI1

2: AI2

Description

Sets the AI as the torque limit source.

H07.09 Positive internal torque limit

Hex:	2007-0Ah	Effective mode:	Real time

Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of positive internal torque.

H07.10 Negative internal torque limit

Hex:	2007-0Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of negative internal torque.

H07.11 Positive external torque limit

Hex:	2007-0Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of positive external torque limit.

H07.12 Negative external torque limit

Hex:	2007-0Dh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of negative external torque limit.

H07.15 Emergency-stop torque

Hex:	2007-10h	Effective mode:	At stop
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Set torque command source for emergency stop.

H07.18 V-LMT selection

Hex:	2007-13h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

1: AI1

2: AI2

Description

Sets the AI as the speed limit source.

H07.19 Positive speed limit/Speed limit 1 in torque control

Hex:	2007-14h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the positive torque reference source in torque control.

H07.20 Negative speed limit/Speed limit 2 in torque control

Hex:	2007-15h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

Defines the negative torque reference source in torque control.

H07.21 Torque reach base value

Hex:	2007-16h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of the base value for torque reach.

H07.22 Torque reach valid value

Hex:	2007-17h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	20.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of torque reach DO.

H07.23 Torque reach invalid value

Hex:	2007-18h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	10.0	Change:	Real-time

Value Range:

0.0% to 400.0%

Description

Defines the torque reference source of torque reach DO.

H07.24 Field weakening depth

Hex:	2007-19h	Effective mode:	Real time
Min.:	60	Unit:	%

Max.:	115	Data Type:	UInt16
Default:	115	Change:	Real-time

Value Range:

60% to 115%

Description

Defines the torque reference source of flux weakening.

H07.25 Max. permissible demagnetizing current

Hex:	2007-1Ah	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	300	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0% to 300%

Description

Defines the torque reference source of max. permissible demagnetizing current.

H07.26 Field weakening selection

Hex:	2007-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

Defines the torque reference source of flux weakening.

H07.27 Flux weakening gain

Hex:	2007-1Ch	Effective mode:	Real time
Min.:	0.001	Unit:	Hz
Max.:	1.000	Data Type:	UInt16
Default:	0.030	Change:	Real-time

Value Range:

0.001 Hz–1.000 Hz

Description

Defines the torque reference source of flux weakening.

H07.28 Speed of flux weakening point

Hex:	2007-1Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Defines the torque reference source of flux weakening point.

H07.35 Torque non-standard feature enable

Hex:	2007-24h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

bit0: Motor output correction enable

bit1: Shield compensation data enable

Description

Torque non-standard feature enable switch.

H07.36 Time constant of low-pass filter 2

Hex:	2007-25h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	10.00	Data Type:	UInt16
Default:	0.00	Change:	Real-time

Value Range:

0.00 ms–10.00 ms

Description

Defines the torque reference source of low-pass filter 2.

H07.37 Torque reference filter selection

Hex:	2007-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: First-order filter
1: Biquad filter

Description

Defines torque reference source of torque reference filter.
When second-order filter is selected, the filter structure is biquad filter for ROT motors, and the filter parameters are set through H07.38. For DDR/DDL motors, the filter structure is biquad low-pass filter, and the filter parameters are set through H07.42.

H07.38 Biquad filter attenuation ratio

Hex:	2007-27h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	50	Data Type:	UInt16
Default:	16	Change:	Real-time

Value Range:

0–50

Description

Defines the attenuation ratio of biquad filter.

H07.40 Speed limit threshold in torque control mode

Hex:	2007-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	300	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–300 ms

Description

Sets speed limit time window in the torque control mode.

H07.42 Biquad low pass filter damping coefficient

Hex:	2007-2Bh	Effective mode:	Real time
Min.:	0.001	Unit:	-
Max.:	10.000	Data Type:	UInt16
Default:	1.000	Change:	Real-time

Value Range:

0.001–10.000

Description

Defines the damping coefficient of biquad low-pass filter.

4.9 H08 Gain Parameters

H08.00 Speed loop gain

Hex:	2008-01h	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Real-time

Value Range:

0.0 Hz–2000.0 Hz

Description

Defines the responsiveness of the speed loop. The higher the setpoint, the faster the speed loop response is. Note that an excessively high setpoint may cause vibration.

In the position control mode, the position loop gain must be increased together with the speed loop gain.

H08.01 Speed loop integral time constant

Hex:	2008-02h	Effective mode:	Real time
Min.:	0.15	Unit:	ms
Max.:	512.00	Data Type:	UInt16
Default:	19.89	Change:	Real-time

Value Range:

0.15 ms–512.00 ms

Description

Defines the integral time constant of the speed loop.

The lower the setpoint, the better the integral action, and the quicker will the deviation value be close to 0.

Note:

There is no integral action when H08.01 is set to 512.00.

H08.02 Position loop gain

Hex:	2008-03h	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	64.0	Change:	Real-time

Value Range:

0.0 Hz–2000.0 Hz

Description

Defines the proportional gain of the position loop.

Defines the responsiveness of the position loop. A high setpoint shortens the positioning time. Note that an excessively high setpoint may cause vibration.
The 1st group of gain parameters include H08.00 (Speed loop gain), H08.01 (Speed loop integral time constant), H08.02, and H07.05 (Filter time constant of torque reference).

H08.03 2nd speed loop gain

Hex:	2008-04h	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	75.0	Change:	Real-time

Value Range:
0.1 Hz–2000.0 Hz
Description
-

H08.04 2nd speed loop integral time constant

Hex:	2008-05h	Effective mode:	Real time
Min.:	0.15	Unit:	ms
Max.:	512.00	Data Type:	UInt16
Default:	10.61	Change:	Real-time

Value Range:
0.15 ms–512.00 ms
Description
-

H08.05 2nd position loop gain

Hex:	2008-06h	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	120.0	Change:	Real-time

Value Range:
0.1 Hz–2000.0 Hz
Description
Defines the second gain set of the position loop and speed loop. The 2nd group of gain parameters include H08.03 (Speed loop gain), H08.04 (Speed loop integral time constant), H08.05, and H07.06 (Torque reference filter time constant 2).

H08.08 2nd gain mode setting

Hex:	2008-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Fixed to the 1st gain, switched between P and PI as defined by bit26 of external 60FEh

1: Switched between the 1st and 2nd gain sets as defined by H08.09

Description

Defines the mode for switching to the 2nd gain set.

H08.09 Gain switchover condition

Hex:	2008-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Fixed to the 1st gain set (PS)

1: Switched as defined by bit26 of 60FEh

2: Torque reference too large (PS)

3: Speed reference too large (PS)

4: Speed reference change rate too large (PS)

5: Speed reference low/high speed threshold (PS)

6: Position deviation too large (P)

7: Position reference available (P)

8: Positioning unfinished (P)

9: Actual speed (P)

10: Position reference + Actual speed (P)

Description

Defines the gain switchover condition.

H08.10 Gain switchover delay

Hex:	2008-0Bh	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	1000.0	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0 ms–1000.0 ms

Description

Defines the delay when the drive switches from the 2nd gain set to the 1st gain set.

H08.11 Gain switchover level

Hex:	2008-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0–20000

Description

Defines the gain switchover level.

Gain switchover is affected by both the level and the dead time, as defined by H08.09. The unit of gain switchover level varies with the switchover condition.

H08.12 Gain switchover hysteresis

Hex:	2008-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

0–20000

Description

Defines the dead time for gain switchover.

Gain switchover is affected by both the level and the dead time, as defined by H08.09. The unit of gain switchover hysteresis varies with the switchover condition.

Note:

The set value of H08.11 (Gain switchover level) must be no less than that of H08.12; otherwise, the H08.11 will be set to a value equal to H08.12 automatically.

H08.13 Position gain switchover time

Hex:	2008-0Eh	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	1000.0	Data Type:	UInt16
Default:	3.0	Change:	Real-time

Value Range:
0.0 ms–1000.0 ms
Description
In position control, if H08.05 (2nd position loop gain) is much higher than H08.02 (Position loop gain), set the time for switching from H08.02 to H08.05. This parameter can be used to reduce the impact caused by an increase in the position loop gain.

H08.15 Load moment of inertia ratio

Hex:	2008-10h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:
0.00–120.00
Description
Defines the mechanical load inertia ratio relative to the motor moment of inertia.

When H08.15 is set to 0, it indicates the motor carries no load; if it is set to 1.00, it indicates the mechanical load inertia is the same as the motor moment of inertia.

H08.17 Zero phase delay

Hex:	2008-12h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	4.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:
0.0 ms–4.0 ms
Description
-

H08.18 Time constant of speed feedforward filter

Hex:	2008-13h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	64.00	Data Type:	UInt16
Default:	0.50	Change:	Real-time

Value Range:

0.00 ms–64.00 ms

Description

Defines the filter time constant of speed feedforward.

H08.19 Speed feedforward gain

Hex:	2008-14h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

In position control and full closed-loop control, speed feedforward is the product of speed feedforwad signal multiplied by H08.19 and is part of the speed reference.

Increasing the setpoint improves the responsiveness to position references and reduces the position deviation during operation at a constant speed.

Set H08.18 to a fixed value first, and then increase the value of H08.19 gradually from 0 to a certain value at which speed feedforward achieves the desired effect.

Adjust H08.18 and H08.19 repeatedly until a balanced performance is achieved.

Note:

For how to enable the speed feedforward function and select the speed feedforward signal, see H05.19 (Speed feedforward control).

H08.20 Torque feedforward filter time constant

Hex:	2008-15h	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	64.00	Data Type:	UInt16
Default:	0.50	Change:	Real-time

Value Range:

0.00 ms–64.00 ms

Description

Defines the filter time constant of torque feedforward.

H08.21 Torque feedforward gain

Hex:	2008-16h	Effective mode:	Real time
Min.:	0.0	Unit:	%

Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 300.0%

Description

In control modes other than torque control, torque feedforward is the product of torque feedforwad signal multiplied by H08.21 and is part of the torque reference.

Increasing the setpoint improves the responsiveness to variable speed references.

Increasing the setpoint improves the responsiveness to position references and reduces the position deviation during operation at a constant speed.

During parameter adjustment, set H08.20 (Torque feedforward filter time constant) to the default value first, and then increase H08.21 gradually to enhance the effect of torque feedforward. When speed overshoot occurs, keep H08.21 unchanged and increase the value of H08.20. Adjust H08.20 and H08.21 repeatedly until a balanced performance is achieved.

Note:

For how to enable the torque feedforward function and select the torque feedforward signal, see H06.11 (Torque feedforward control).

H08.22 Speed feedback filtering option

Hex:	2008-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Inhibited
1: 2 times
2: 4 times
3: 8 times
4: 16 times

Description

Defines the moving average filtering times for speed feedback.

The higher the setpoint, the weaker the speed feedback fluctuation, but the longer the feedback delay will be.

H08.23 Cutoff frequency of speed feedback low-pass filter

Hex:	2008-18h	Effective mode:	Real time
Min.:	100	Unit:	Hz

Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

100 Hz–8000 Hz

Description

Defines the cutoff frequency for first-order low-pass filtering on the speed feedback.

Note:

The lower the setpoint, the weaker the speed feedback fluctuation, and the longer the feedback delay will be.

Setting this parameter to 4000 Hz negates the filtering effect.

H08.24 PDFF control coefficient

Hex:	2008-19h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	200.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 200.0%

Description

Defines the control mode of the speed loop.

When this parameter is set to 100.0, the speed loop adopts PI control (default) with quick dynamic response.

When this parameter is set to 0.0, speed loop integral action is enhanced, which filters out low-frequency interference but also slows down the dynamic response.

H08.24 can be used to keep a good responsiveness of the speed loop, with the anti-interference capacity in low-frequency bands improved and the speed feedback overshoot unaffected.

H08.27 Speed observer cutoff frequency

Hex:	2008-1Ch	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	600	Data Type:	UInt16
Default:	170	Change:	Real-time

Value Range:

50 Hz–600 Hz

Description

Defines the cutoff frequency of the speed observer. Note that an excessively high setpoint may incur resonance. Decrease the setpoint properly in case of large speed feedback noise.

H08.28 Speed observer inertia correction coefficient

Hex:	2008-1Dh	Effective mode:	Real time
Min.:	1	Unit:	%
Max.:	1600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

1% to 1600%

Description

Defines the speed observer inertia correction coefficient. If H08.15 is set based on the actual inertia, there is no need to adjust this parameter.

H08.29 Speed observer filter time

Hex:	2008-1Eh	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	10.00	Data Type:	UInt16
Default:	0.80	Change:	Real-time

Value Range:

0.00 ms–10.00 ms

Description

Defines the speed observer filter time. It is recommended to set this parameter to a value equal to the sum of H07.05 plus 0.2 ms.

H08.31 Disturbance cutoff frequency

Hex:	2008-20h	Effective mode:	Real time
Min.:	1	Unit:	Hz
Max.:	4000	Data Type:	UInt16
Default:	600	Change:	Real-time

Value Range:

1 Hz–4000 Hz

Description

Defines the cutoff frequency of the disturbance observer. Increasing the setpoint improves the responsiveness of the disturbance observer and the compensation effect. Note that an excessively high setpoint may incur resonance.

H08.32 Disturbance compensation gain

Hex:	2008-21h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0% to 100%

Description

Defines the compensation gain of the disturbance observer. The setpoint 100% indicates full compensation.

H08.33 Disturbance observer inertia correction coefficient

Hex:	2008-22h	Effective mode:	Real time
Min.:	1	Unit:	%
Max.:	1600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

1% to 1600%

Description

Defines the disturbance observer inertia correction coefficient. If H08.15 is set based on the actual inertia, there is no need to adjust this parameter.

H08.37 Phase modulation for medium-frequency jitter suppression 2

Hex:	2008-26h	Effective mode:	Real time
Min.:	-90	Unit:	°
Max.:	90	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-90° to 90°

Description

Defines the compensation phase of medium-frequency jitter suppression 2.

H08.38 Medium-frequency suppression 2 frequency

Hex:	2008-27h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	1000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 Hz–1000 Hz
Description
Set this parameter based on actual resonance frequency. The valid suppression frequency range for medium-frequency jitter suppression 2 is 100 Hz to 1000 Hz.

H08.39 Compensation gain of medium-frequency jitter suppression 2

Hex:	2008-28h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	300	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0% to 300%
Description
Defines the compensation gain for medium-frequency jitter suppression 2. Set this parameter to 40%...55% in general cases. Setting this parameter to 0 negates the effect of medium-frequency jitter suppression 2.

H08.40 Speed observer selection

Hex:	2008-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Disabled
1: Enabled
Description
Used to set the enable bit for speed observer.

H08.42 Model control selection

Hex:	2008-2Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Disabled
1: Enabled
2: Reserved

Description
Used to enable model tracking control.

H08.43 Model gain

Hex:	2008-2Ch	Effective mode:	Real time
Min.:	0.1	Unit:	-
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Real-time

Value Range:
0.1–2000.0
Description
Defines the single inertia model gain. The higher the gain, the faster the position response. Note that an excessively high setpoint may incur excessive overshoot.

H08.46 Feedforward value

Hex:	2008-2Fh	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	102.4	Data Type:	UInt16
Default:	95.0	Change:	Real-time

Value Range:
0.0–102.4
Description
Defines the speed feedforward gain for single inertia model control. If overshoot occurs, reduce the setpoint properly.

H08.53 Medium- and low-frequency jitter suppression frequency 3

Hex:	2008-36h	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:
0.0 Hz–300.0 Hz
Description
Set this parameter based on actual resonance frequency. The resonance suppression range is 100 Hz to 300 Hz.

H08.54 **Medium- and low-frequency jitter suppression compensation 3**

Hex:	2008-37h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0% to 200%

Description

Defines the compensation gain for medium- and low-frequency suppression compensation 3. The setpoint 200% indicates full compensation.

H08.56 **Medium- and low-frequency jitter suppression phase modulation 3**

Hex:	2008-39h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0% to 600%

Description

Adjust this parameter based on the actual compensation effect.

H08.59 **Medium- and low-frequency jitter suppression frequency 4**

Hex:	2008-3Ch	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0 Hz–300.0 Hz

Description

Set this parameter based on actual resonance frequency. The resonance suppression range is 100 Hz to 300 Hz.

H08.60 **Medium- and low-frequency jitter suppression compensation 4**

Hex:	2008-3Dh	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0% to 200%
Description
Defines the compensation gain for medium- and low-frequency suppression compensation 4. The setpoint 200% indicates full compensation.

H08.61 Medium- and low-frequency jitter suppression phase modulation 4

Hex:	2008-3Eh	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	600	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:
0% to 600%
Description
Adjust this parameter based on the actual compensation effect.

H08.62 Position loop integral time constant

Hex:	2008-3Fh	Effective mode:	Real time
Min.:	0.15	Unit:	-
Max.:	512.00	Data Type:	UInt16
Default:	512.00	Change:	Real-time

Value Range:
0.15–512.00
Description
Defines the position loop integral time constant.

H08.63 2nd position loop integral time constant

Hex:	2008-40h	Effective mode:	Real time
Min.:	0.15	Unit:	-
Max.:	512.00	Data Type:	UInt16
Default:	512.00	Change:	Real-time

Value Range:
0.15–512.00
Description
Defines the 2nd position loop integral time constant.

H08.64 Speed observer feedback source

Hex:	2008-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

-

H08.65 Zero deviation control selection

Hex:	2008-42h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Used to enable/disable zero deviation control.

H08.66 Zero deviation control position average filter

Hex:	2008-43h	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	320.0	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0 ms–320.0 ms

Description

Defines the average filter time of zero deviation control position. It is recommended to increase the setpoint in case of large noise caused by low command resolution.

H08.68 Speed feedforward of zero deviation control

Hex:	2008-45h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16

Default:	100.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the speed feedforward of zero deviation control.

H08.69 Torque feedforward of zero deviation control

Hex:	2008-46h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the torque feedforward of zero deviation control.

H08.90 Encoder scale spacing ripple suppressor enable

Hex:	2008-5Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	6	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Inhibited

1: 1st group activated only-adaptive mode

2: 1st group activated only-hysteresis mode

3: Two groups activated-adaptive mode

4: Two groups activated-hysteresis mode

Description

Sets encoder scale pitch ripple suppression.

(1) This function is only used to suppress or eliminate the torque ripple of the control loop caused by the encoder scale pitch ripple, and to reduce the speed fluctuation and operating noise to a certain extent.

(2) This function is not suitable for applications with frequent speed changes and short travels, and it is better for applications with long travels and slow speed changes (such as the digital printing industry).

(3) The number of suppressors to be used is determined according to the number of torque ripple components caused by the encoder scale pith ripple.

(4) The hysteretic mode is only suitable for reciprocating constant speed operation, and the adaptive mode is suitable for the occasion with slow speed change. You should choose the suitable mode as needed.

4.10 H09 Auto-tuning Parameters

H09.00 **Auto-adjustment mode**

Hex:	2009-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	4	Change:	Real-time

Value Range:

0: Disabled, manual gain tuning required

1: Enabled, gain parameters generated automatically based on the stiffness level

2: Positioning mode, gain parameters generated automatically based on the stiffness level

3: Interpolation mode+Inertia auto-tuning

4: Normal mode+Inertia auto-tuning

6: Quick positioning mode+Inertia auto-tuning

Description

Defines different gain tuning modes. Related gain parameters can be set manually or automatically according to the stiffness level.

H09.01 **Stiffness level selection**

Hex:	2009-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	41	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:

0–41

Description

Defines the stiffness level of the servo system. The higher the stiffness level, the stronger the gains and the quicker the response will be. But an excessively high stiffness level will cause vibration.

The setpoint 0 indicates the weakest stiffness and 41 indicates the strongest stiffness.

H09.02 **Adaptive notch mode**

Hex:	2009-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:

0: Adaptive notch no longer updated

1: One adaptive notch activated (3rd notch)

2: Two adaptive notches activated (3rd and 4th notches)

3: Resonance point tested only (displayed in H09.24)

4: Adaptive notch cleared, values of 3rd and 4th notches restored to default

Description

Defines the operation mode of the adaptive notch.

H09.03 Online inertia auto-tuning mode

Hex:	2009-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Disabled

1: Enabled, changing slowly

2: Enabled, changing normally

3: Enabled, changing quickly

Description

Defines whether to enable online inertia auto-tuning and the inertia ratio update speed during online inertia auto-tuning.

H09.05 Offline inertia auto-tuning mode

Hex:	2009-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Bi-directional

1: Unidirectional

Description

Defines the offline inertia auto-tuning mode. The offline inertia auto-tuning function can be enabled through H0d.02.

H09.06 Max. speed of inertia auto-tuning

Hex:	2009-07h	Effective mode:	Real time
Min.:	100	Unit:	RPM

Max.:	1000	Data Type:	UInt16
Default:	500	Change:	At stop

Value Range:

100 RPM to 1000 RPM

Description

Defines the maximum permissible speed reference in offline inertia auto-tuning mode.

During inertia auto-tuning, the higher the speed, the more accurate the auto-tuned values. Use the default setpoint in general cases.

H09.07 Time constant for accelerating to max. speed during inertia auto-tuning

Hex:	2009-08h	Effective mode:	Real time
Min.:	20	Unit:	ms
Max.:	800	Data Type:	UInt16
Default:	125	Change:	At stop

Value Range:

20 ms–800 ms

Description

Defines the time for the motor to accelerate from 0 rpm to the maximum speed of inertia auto-tuning (H09.06) during offline inertia auto-tuning.

H09.08 Interval time after an individual inertia auto-tuning

Hex:	2009-09h	Effective mode:	Real time
Min.:	50	Unit:	ms
Max.:	10000	Data Type:	UInt16
Default:	800	Change:	At stop

Value Range:

50 ms–10000 ms

Description

Defines the interval time between two consecutive speed references when H09.05 (Offline inertia auto-tuning mode) is set to 1 (Positive/Negative triangular wave mode).

H09.09 Number of motor revolutions per inertia auto-tuning

Hex:	2009-0Ah	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	100.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:
0.00–100.00
Description
Defines the motor revolutions per inertia auto-tuning when H09.05 (Offline inertia auto-tuning mode) is set to 1 (Positive/Negative triangular wave mode).
Note:
When using the offline inertia auto-tuning function, check that the travel distance of the motor at the stop position is larger than the value of H09.09. If not, decrease the value of H09.06 (Maximum speed for inertia auto-tuning) or H09.07 (Time constant of accelerating to max. speed during inertia auto-tuning) properly until the motor travel distance fulfills the requirement.

H09.11 Vibration threshold

Hex:	2009-0Ch	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0% to 100.0%
Description
Defines the alarm threshold for current feedback vibration.

H09.12 Frequency of the 1st notch

Hex:	2009-0Dh	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:
50 Hz–8000 Hz
Description
Defines the center frequency of the notch, which is the mechanical resonance frequency.
In the torque control mode, setting the notch frequency to 4000 Hz deactivates the notch function.

H09.13 Width level of the 1st notch

Hex:	2009-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16

Default:	2	Change:	Real-time

Value Range:

0–20

Description

Defines the width level of the notch. Use the default setpoint in general cases. Width level is the ratio of the notch width to the notch center frequency.

H09.14 Depth level of the 1st notch

Hex:	2009-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–99

Description

Defines the depth level of the notch.

The depth level of the notch is the ratio between the input to the output at the notch center frequency.

The higher the setpoint, the lower the notch depth and the weaker the mechanical resonance suppression will be. Note that an excessively high setpoint may cause system instability.

H09.15 Frequency of the 2nd notch

Hex:	2009-10h	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

50 Hz–8000 Hz

Description

-

H09.16 Width level of the 2nd notch

Hex:	2009-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0–20
Description
-

H09.17 **Depth level of the 2nd notch**

Hex:	2009-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–99
Description
-

H09.18 **Frequency of the 3rd notch**

Hex:	2009-13h	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:
50 Hz–8000 Hz
Description
-

H09.19 **Width level of the 3rd notch**

Hex:	2009-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:
0–20
Description
-

H09.20 **Depth level of the 3rd notch**

Hex:	2009-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:
0–99
Description
-

H09.21 Frequency of the 4th notch

Hex:	2009-16h	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:
50 Hz–8000 Hz
Description
-

H09.22 Width level of the 4th notch

Hex:	2009-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:
0–20
Description
-

H09.23 Depth level of the 4th notch

Hex:	2009-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–99
Description
-

H09.24 Auto-tuned resonance frequency

Hex:	2009-19h	Effective mode:	-

Min.:	0	Unit:	Hz
Max.:	5000	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 Hz–5000 Hz

Description

When H09.02 (Adaptive notch mode) is set to 3, the current mechanical resonance frequency is displayed.

H09.32 Gravity compensation value

Hex:	2009-21h	Effective mode:	Real time
Min.:	-100.0	Unit:	%
Max.:	100.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-100.0% to 100.0%

Description

Defines the gravity compensation value. Setting this parameter properly in vertical axis applications can reduce the falling amplitude upon start.

H09.33 Positive friction compensation value

Hex:	2009-22h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0% to 100.0%

Description

Defines the forward friction compensation value.

H09.34 Negative friction compensation value

Hex:	2009-23h	Effective mode:	Real time
Min.:	-100.0	Unit:	%
Max.:	0.0	Data Type:	Int16
Default:	0.0	Change:	Real-time

Value Range:

-100.0% to 0.0%

Description

Defines the reverse direction friction compensation value.

H09.35 Friction compensation speed

Hex:	2009-24h	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	20.0	Data Type:	UInt16
Default:	2.0	Change:	Real-time

Value Range:

0.0–20.0

Description

Defines the friction compensation speed.

H09.36 Friction compensation speed

Hex:	2009-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	19	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Slow mode+Speed reference
1: Slow mode+Model speed
2: Slow mode+Speed feedback
3: Slow mode+Observe speed
16: Quick mode +Speed reference
17: Quick mode +Model speed
18: Quick mode +Speed feedback
19: Quick mode+Observe speed

Description

-

H09.37 Vibration monitoring time

Hex:	2009-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	300	Change:	Real-time

Value Range:

0–65535

Description

The resonance detection suppression function is turned off automatically after the time defined by this parameter elapses. To suppress the resonance suppression function, set this parameter to 65536 (in seconds).

H09.38 Frequency of low-frequency resonance suppression 1 at the mechanical end

Hex:	2009-27h	Effective mode:	Real time
Min.:	1.0	Unit:	Hz
Max.:	100.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

1.0 Hz–100.0 Hz

Description

Set this parameter based on the actual jitter frequency.

H09.39 Low-frequency resonance suppression 1 at the mechanical end

Hex:	2009-28h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0–3

Description

Defines different low-frequency resonance suppression types at the mechanical load. Type 1 features the shortest delay.

H09.44 Frequency of low-frequency resonance suppression 2 at mechanical load end

Hex:	2009-2Dh	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0–100.0

Description

Set this parameter based on the actual jitter frequency.

H09.45 **Responsiveness of low-frequency resonance suppression 2 at mechanical load end**

Hex:	2009-2Eh	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	10.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.01–10.00

Description

Use the default setpoint in general cases. To increase the setpoint, reduce the delay time.

H09.47 **Width of low-frequency resonance suppression 2 at mechanical load end**

Hex:	2009-30h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	2.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00–2.00

Description

Use the default setpoint in general cases. To increase the setpoint, increase the delay time.

H09.49 **Frequency of low-frequency resonance suppression 3 at mechanical load end**

Hex:	2009-32h	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0–100.0

Description

-

H09.50 **Responsiveness of low-frequency resonance suppression 3 at mechanical load end**

Hex:	2009-33h	Effective mode:	Real time
Min.:	0.01	Unit:	-

Max.:	10.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:
0.01–10.00
Description
-

H09.52 Width of low-frequency resonance suppression 3 at mechanical load end

Hex:	2009-35h	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	2.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:
0.00–2.00
Description
-

H09.54 Resonance detection torque threshold

Hex:	2009-37h	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	50.0	Change:	Real-time

Value Range:
0.0% to 300.0%
Description
If the torque fluctuation exceeds the setpoint, an error will be reported. Setting this parameter to 0 hides the resonance detection function.

H09.56 Max. overshoot allowed by ETune

Hex:	2009-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	2936	Change:	Real-time

Value Range:
0–65535
Description
Defines the maximum overshoot value allowed during ETune adjustment.

H09.57 STune resonance suppression switchover frequency

Hex:	2009-3Ah	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	4000	Data Type:	UInt16
Default:	650	Change:	Real-time

Value Range:

0 Hz–4000 Hz

Description

If the resonance frequency is lower than the setpoint, use medium-frequency resonance suppression 2 to suppress resonance. Otherwise, use the notch to suppress resonance.

H09.58 STune resonance suppression reset selection

Hex:	2009-3Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Used to enable STune resonance suppression reset to clear parameters related to resonance suppression, medium-frequency resonance suppression 2 and notches 3 and 4.

H09.71 Starting frequency

Hex:	2009-48h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:

0 Hz–8000 Hz

Description

-

H09.72 End frequency

Hex:	2009-49h	Effective mode:	Real time
Min.:	0	Unit:	Hz

Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:
0 Hz–8000 Hz
Description
-

H09.73 Frequency subdivision

Hex:	2009-4Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	500	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
0–500
Description
-

H09.74 Excitation amplitude

Hex:	2009-4Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	15.0	Change:	Real-time

Value Range:
0.0% to 400.0%
Description
-

H09.75 Starting frequency 2

Hex:	2009-4Ch	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0 Hz–8000 Hz
Description
-

H09.76 **Frequency subdivision 2**

Hex:	2009-4Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1000	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0–1000
Description
-

H09.77 **Biquad filter mode**

Hex:	2009-4Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	6	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Disabled
1: First-order low-pass
2: Second-order low-pass
3: Notch
4: Lead-lag
5: User-defined
Description
Used to select biquad filter mode.

H09.78 **Biquad filter numerator frequency**

Hex:	2009-4Fh	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	16000	Data Type:	UInt16
Default:	16000	Change:	Real-time

Value Range:
0 Hz–16000 Hz
Description
-

H09.79 **Biquad filter numerator damping coefficient**

Hex:	2009-50h	Effective mode:	Real time
Min.:	0.001	Unit:	-

Max.:	10.000	Data Type:	UInt16
Default:	1.000	Change:	Real-time

Value Range:
0.001–10.000
Description
-

H09.80 Biquad filter denominator frequency

Hex:	2009-51h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	16000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:
0 Hz–16000 Hz
Description
-

H09.81 Biquad filter denominator damping coefficient

Hex:	2009-52h	Effective mode:	Real time
Min.:	0.001	Unit:	-
Max.:	10.000	Data Type:	UInt16
Default:	1.000	Change:	Real-time

Value Range:
0.001–10.000
Description
-

4.11 H0A Fault and Protection Parameters

H0A.00 Power input phase loss and failure protection

Hex:	200A-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Enable
1: Disable

Description

Servo drives supporting single-phase/three-phase 220 V and three-phase 380 V power supplies are available. When voltage fluctuation or phase loss occurs on the power supply, the drive triggers power input phase loss protection based on H0A.00.

H0A.01 Absolute position limit

Hex:	200A-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

2: Enabled after homing

Description

Used to set the activation condition for enabling the software position limit function and the software limit.

H0A.04 Motor overload protection gain

Hex:	200A-05h	Effective mode:	Real time
Min.:	50	Unit:	-
Max.:	300	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

50–300

Description

Determines the motor overload duration before E620.0 (Motor overload) is reported.

You can change the setpoint to advance or delay the time when overload protection is triggered based on the motor temperature. The setpoint 50% indicates the time is cut by half; 150% indicates the time is increased by 50%. Set this parameter based on the actual temperature of the motor.

H0A.08 Overspeed threshold

Hex:	200A-09h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	20000	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:

0rpm to 20000rpm

Description

Defines the overspeed threshold of the motor.

H0A.10 Threshold of excessive local position deviation

Hex:	200A-0Bh	Effective mode:	Real time
Min.:	0	Unit:	Encoder unit
Max.:	4294967295	Data Type:	UInt32
Default:	27486951	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the threshold for excessive position deviation in the position control mode.

When the position deviation exceeds this threshold, the drive reports EB00.0 (Position deviation too large).

H0A.12 Runaway protection enable

Hex:	200A-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disable

1: Enable

Description

Defines whether to enable runaway protection.

0: Disables E234.0 detection when the motor drives a vertical axis or is driven by the load

1: Enables runaway protection

H0A.13 Angle auto-tuning mode

Hex:	200A-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Pre-positioning
1: Inching
6: Static Hall
8: Closed loop pre-positioning
9: Position lock
Description
Selects the motor angle auto-tuning mode:
0: pre-positioning
1: Inching
6: Static hall
8: Closed-loop pre-positioning
9: Position locking

H0A.18 IGBT over-temperature threshold

Hex:	200A-13h	Effective mode:	Real time
Min.:	120	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	140	Change:	Real-time

Value Range:
120°C–175°C
Description
Defines the threshold for reporting E640.0 (IGBT overtemperature) and E640.1 (Flywheel diode overtemperature).

H0A.19 Filter time constant of touch probe 1

Hex:	200A-14h	Effective mode:	Real time
Min.:	0.00	Unit:	us
Max.:	6.30	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:
0.00us–6.30us
Description
Defines the filter time of touch probe 1. An active input must last for the time defined by H0A.19.

H0A.20 Filter time constant of touch probe 2

Hex:	200A-15h	Effective mode:	Real time

Min.:	0.00	Unit:	us
Max.:	6.30	Data Type:	UInt16
Default:	2.00	Change:	Real-time

Value Range:

0.00us–6.30us

Description

Defines the filter time of touch probe 2. An active input must last for the time defined by H0A.20.

H0A.21 STO function display selection

Hex:	200A-16h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–7

Description

Defines whether to display the STO status or report E150.0 after the STO function is triggered.

0: Displays the STO status. The keypad displays "sto_" after the STO function is triggered. In this case, no fault is reported and no output is generated from the fault DO.

1: Displays the STO fault. The keypad displays "E150.0" after the STO function is triggered. In this case, the dive reports the fault and the faulty DO outputs.

H0A.23 TZ signal filter time

Hex:	200A-18h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	31	Data Type:	UInt16
Default:	15	Change:	At stop

Value Range:

0–31

Description

-

H0A.25 Speed display DO low-pass filter time

Hex:	200A-1Ah	Effective mode:	Real time
Min.:	0	Unit:	ms

Max.:	5000	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–5000 ms

Description

Defines the low-pass filter time constant of the speed information for speed feedback and position references.

H0A.26 Motor overload detection

Hex:	200A-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Show motor overload alarm (E909.0) and fault (E620.0)

1: Hide motor overload alarm (E909.0) and fault (E620.0)

Description

Defines whether to enable motor overload detection.

H0A.27 Average filter time for speed display DO

Hex:	200A-1Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	50	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the average filter time constant of the speed information for speed feedback and position references.

H0A.29 Fully closed-loop encoder (ABZ) filter time

Hex:	200A-1Eh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	65535	Data Type:	UInt16
Default:	4111	Change:	At stop

Value Range:

bit0: Fully closed loop encoder (ABZ) pulse signal filtering time

bit8–bit15: Fully closed loop encoder (ABZ) wire breakage filter time

Description

-

H0A.32 Time threshold for locked motor overheat protection

Hex:	200A-21h	Effective mode:	Real time
Min.:	10	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

10 ms–65535 ms

Description

Defines the overtemperature duration before E630.0 (Motor stall) is detected by the servo drive.

H0A.32 can be used to adjust the sensitivity of motor stall overtemperature detection.

H0A.33 Locked motor overheat protection

Hex:	200A-22h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

Enables or disables the detection for E630.0 (Motor stall overtemperature protection).

H0A.36 Encoder multi-turn overflow fault selection

Hex:	200A-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Not hide

1: Hide

Description

Defines whether to hide the encoder multi-turn overflow fault in the absolute position linear mode (H02.01 = 1).

H0A.40 Compensation function selection

Hex:	200A-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	6	Change:	At stop

Value Range:

bit	Name	Description
0	Overtravel compensation	0: Enabled
		1: Disabled
1	Probe rising edge compensation	0: Disabled
		1: Enabled
2	Probe falling edge compensation	0: Disabled
		1: Enabled
3	Probe solution	0: New scheme
		1: Old scheme (same as SV660N)
4	Probe 2 separate compensation time	0: Disabled
		1: Enabled

Description

-

H0A.41 Forward position of software position limit

Hex:	200A-2Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	2147483647	Change:	At stop

Value Range:
-2147483648 to 2147483647
Description
When the absolute position counter (H0b.07) is larger than H0A.41, the servo drive reports E950.0 (Forward limit switch alarm) and executes stop at forward limit.

H0A.43 Reverse position of software position limit

Hex:	200A-2Ch	Effective mode:	Real time
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	-2147483648	Change:	At stop

Value Range:
-2147483648 to 2147483647
Description
When the absolute position counter (H0b.07) is smaller than H0A.43, the servo drive reports alarm E952.0 (Reverse limit switch alarm) and executes stop at reverse limit.

H0A.49 Braking resistor overtemperature threshold

Hex:	200A-32h	Effective mode:	Real time
Min.:	100	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	140	Change:	Real-time

Value Range:
100°C–175°C
Description
Defines the temperature threshold for braking resistor overload.

H0A.50 Encoder communication fault tolerance threshold

Hex:	200A-33h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	31	Change:	Real-time

Value Range:
0–31

Description

When the communication between the encoder and the drive fails continuously for more than H0A.50 times, it is considered as a communication failure with the encoder. When overspeed point mask is enabled, if the number of consecutive overspeed points exceed H0A.50, it is considered as a communication failure with the encoder.

H0A.51 Phase loss detection filter times

Hex:	200A-34h	Effective mode:	Real time
Min.:	3	Unit:	55ms
Max.:	36	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

3–36

Description

Phase loss fault is reported when phase loss keeps active for a period longer than H0A.51.

H0A.52 Encoder temperature protection threshold

Hex:	200A-35h	Effective mode:	Real time
Min.:	0	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	120	Change:	Real-time

Value Range:

0°C–175°C

Description

Defines the temperature threshold for encoder overtemperature protection.

H0A.53 Probe DI ON compensation time

Hex:	200A-36h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	200	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when the touch probe is switched on.

H0A.54 Probe DI OFF compensation time

Hex:	200A-37h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	1512	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when the touch probe is switched off.

H0A.55 Runaway current threshold

Hex:	200A-38h	Effective mode:	Real time
Min.:	100.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	200.0	Change:	Real-time

Value Range:

100.0% to 400.0%

Description

Defines the current threshold for runaway protection detection.

H0A.56 Fault reset delay

Hex:	200A-39h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	60000	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:

0 ms–60000 ms

Description

-

H0A.57 Runaway speed threshold

Hex:	200A-3Ah	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

1 rpm to 1000 rpm

Description

Defines the overspeed threshold for runaway protection detection.

H0A.58 Runaway speed filter time

Hex:	200A-3Bh	Effective mode:	Upon the next power-on
Min.:	0.1	Unit:	ms
Max.:	100.0	Data Type:	UInt16
Default:	2.0	Change:	Real-time

Value Range:

0.1 ms–100.0 ms

Description

Defines the speed feedback filter time for runaway protection detection.

H0A.59 Runaway protection detection time

Hex:	200A-3Ch	Effective mode:	Real time
Min.:	10	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

10 ms–1000 ms

Description

The runaway fault will be reported when runaway keeps active for a period longer than H0A.59.

H0A.60 Black box function mode

Hex:	200A-3Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Disable

1: Any fault

2: Designated fault

3: Triggered based on designated condition

Description

Defines the condition for triggering black box sampling.

H0A.61 **Designated fault code**

Hex:	200A-3Eh	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0–6553.5

Description

Defines the fault code for triggering the black box function.

H0A.62 **Trigger source**

Hex:	200A-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	25	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–25

Description

Defines the fault code for triggering the black box function through designated channel.

H0A.63 **Trigger level**

Hex:	200A-40h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

Defines the trigger level for triggering the black box function through designated channel.

H0A.65 **Trigger level**

Hex:	200A-42h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Rising edge
1: Equal
2: Falling edge
3: Edge-triggered
Description
Defines the trigger mode for triggering the black box function through H0A.63.

H0A.66 Trigger position

Hex:	200A-43h	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	75	Change:	Real-time

Value Range:
0% to 100%
Description
Defines the pre-trigger position for triggering black box sampling.

H0A.67 Sampling frequency

Hex:	200A-44h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Current loop
1: Position loop
2: Main cycle
Description
Defines the frequency sampling mode during black box sampling.

H0A.70 Overspeed threshold 2

Hex:	200A-47h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	20000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0rpm to 20000rpm

Description

Defines the speed threshold for reporting E500.2 (Position feedback pulse overspeed).

H0A.71 Internal function switch

Hex:	200A-48h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	4098	Change:	Real-time

Value Range:

0–65535

Description

bit	Function	Description
0	Motor overload curve selection	0: New 1: Old
1	Power failure bleeder switch	0: Enabled 1: Enabled
2	Forced brake motor stop mode	0: Forced stop 1: Non-forced stop
3	Multi-speed DI mode	0: Old characteristics 1: New characteristics
4	E120.3 hide switch	0: Enabled 1: Disabled
5	Prohibit software reading parameters	0: Disabled 1: Enabled
6	E108.4 hide switch	0: Disabled 1: Enabled
7	CSV command interpolation	0: Sync interrupt interpolation 1: IRQ interrupt interpolation
8	Data length of motor rated current, inertia and back EMF coefficient	0: 16-bit 1: 32-bit
9	Wire breakage detection	0: Enabled 1: Disable
10	Torque limit source	0: Auto switch acc. to H02.00 1: H07.09 and H07.10
11	Ultra-accurate speed feedback switch	0: Disable 1: Enabled
12	Power failure retention of homing completion flag bit	0: Disabled 1: Enabled

bit	Function	Description
13	STO status word fallback switch	0: Switch on disable 1: Fault
14	Encoder adaptive function switch	0: Enabled 1: Disable
15	Interrupt positioning external characteristics	0: Old external characteristics, follows motor operation direction 1: New external characteristics, direction set by parameter

H0A.72 Maximum stop time in ramp-to-stop

Hex:	200A-49h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	At stop

Value Range:

0 ms–65535 ms

Description

Defines the time for the motor to decelerate from the maximum speed to 0rpm during ramp-to-stop.

H0A.73 STO 24 V disconnection filter time

Hex:	200A-4Ah	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	5	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

1 ms–5 ms

Description

Defines the delay from the moment when 24V is disconnected to the moment when the STO state applies.

H0A.74 Filter time for two inconsistent STO channels

Hex:	200A-4Bh	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

1 ms–1000 ms

Description

Defines the delay from the moment the inconsistent 24V is input to the drive through two channels to the moment when the STO state applies.

H0A.75 Servo OFF delay after STO triggered

Hex:	200A-4Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	25	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

0 ms–25 ms

Description

Defines the delay from the moment the STO state is triggered to the moment the S-ON signal is switched off.

H0A.90 Speed display low-pass filter time

Hex:	200A-5Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the low-pass filter time constant for displayed speed values.

H0A.91 Moving average filter time for torque display values

Hex:	200A-5Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the moving average filter time constant for torque display values.

H0A.92 Moving average filter time for position display values

Hex:	200A-5Dh	Effective mode:	Real time

Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–100 ms

Description

Defines the moving average filter time constant for position display values.

H0A.93 Low-pass filter time for voltage display values

Hex:	200A-5Eh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	250	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–250 ms

Description

Defines the low-pass filter time constant for voltage display values.

H0A.94 Low-pass filter time for thermal display values

Hex:	200A-5Fh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	250	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 ms–250 ms

Description

Defines the filter time constant for thermal display values.

H0A.95 Braking force detection enable

Hex:	200A-60h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Not detected

1: Detected

Description

Used to set whether to enable braking force detection.

4.12 H0b Monitoring Parameters

H0b.00 Motor speed actual value

Hex:	200b-01h	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32767rpm to 32767rpm

Description

It displays the actual speed of the servo motor after round-off, in unit of 1 RPM. Set in H0A.25 (Filter time constant of speed feedback display) the filter time constant for H0b.00.

H0b.01 Speed reference

Hex:	200b-02h	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32767rpm to 32767rpm

Description

Indicates the present speed reference (accurate to 1rpm) of the drive in the position and speed control modes.

H0b.02 Internal torque reference

Hex:	200b-03h	Effective mode:	-
Min.:	-500.0	Unit:	%
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:

-500.0% to 500.0%

Description

Displays present torque reference (accurate to 0.1%). The value 100.0% corresponds to the rated torque of the motor.

H0b.03 Input (DI) signal monitoring

Hex:	200b-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays the level status of eight DI terminals without filtering.

Upper LED segments ON: high level (indicated by "1") Lower LED segments ON: low level (indicated by "0")

H0b.05 Output (DO) signal monitoring

Hex:	200b-06h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Displays the level status of 5 DO terminals without filtering.

Upper LED segments ON: high level (indicated by "1") Lower LED segments ON: low level (indicated by "0")

H0b.07 Absolute position counter

Hex:	200b-08h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Indicates present absolute position (reference unit) of the motor in the position control mode.

This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.09 Mechanical angle

Hex:	200b-0Ah	Effective mode:	-
Min.:	0.0	Unit:	°
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0° to 360.0°

Description

Displays present mechanical angle (encoder unit) of the motor. The setpoint 0 indicates the mechanical angle is 0°.

Actual mechanical angle = 360° x H0b.09/(Maximum value of H0b.09 + 1)

Maximum value of H0b.09 for an absolute encoder is 65535.

H0b.10 Electrical angle

Hex:	200b-0Bh	Effective mode:	-
Min.:	0.0	Unit:	°
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0° to 360.0°

Description

Indicates the present electrical angle of the motor, which is accurate to 0.1°.

The electrical angle variation range is ±360.0° during rotation. If the motor has four pairs of poles, each revolution generates four rounds of angle change from 0° to 359°. Similarly, if the motor has five pairs of poles, each revolution generates five rounds of angle change from 0° to 359°.

H0b.12 Average load ratio

Hex:	200b-0Dh	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	800.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0% to 800.0%

Description

Displays the percentage of the average load torque to the rated torque of the motor, which is accurate to 0.1%. The value 100.0% corresponds to the rated torque of the motor.

H0b.15 Position following error (encoder unit)

Hex:	200b-10h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Used to count and display the position deviation value after being divided or multiplied by the electronic gear ratio in the position control mode.

This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

Note:

H0b.15 can be clear when the condition defined in H05.16 (Clear action) is met.

H0b.17 Feedback pulse counter

Hex:	200b-12h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Used to count the position pulses fed back by the encoder in any control mode.

This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.19 Total power-on time

Hex:	200b-14h	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	655356553.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:

0.0s to 655356553.5s

Description

Used to record the total operating time of the servo drive.

This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

Note:
If the servo drive is switched on and off repeatedly within a short period of time, a deviation within 1h may be present in the total power-on time record.

H0b.21 Displayed AI1 voltage

Hex:	200b-16h	Effective mode:	-
Min.:	-12.00	Unit:	V
Max.:	12.00	Data Type:	Int16
Default:	0.00	Change:	Unchangeable

Value Range:
-12.00 V–12.00 V
Description
Displays the actual sampling voltage of AI1.

H0b.22 Displayed AI2 voltage

Hex:	200b-17h	Effective mode:	-
Min.:	-12.00	Unit:	V
Max.:	12.00	Data Type:	Int16
Default:	0.00	Change:	Unchangeable

Value Range:
-12.00 V–12.00 V
Description
Displays the actual sampling voltage of AI2.

H0b.24 Phase current RMS value

Hex:	200b-19h	Effective mode:	-
Min.:	0.0	Unit:	A
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0 A–6553.5 A
Description
Displays the RMS value of the phase current of the motor, accurate to 0.01 A.

H0b.26 Bus voltage

Hex:	200b-1Bh	Effective mode:	-
Min.:	0.0	Unit:	V

Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 V–6553.5 V

Description

Displays the DC bus voltage of the main circuit input voltage after rectification, which is accurate to 0.01 V.

H0b.27 Module temperature

Hex:	200b-1Ch	Effective mode:	-
Min.:	-20	Unit:	°C
Max.:	200	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-20°C–200°C

Description

Indicates the temperature of the module inside the servo drive, which can be used as a reference for estimating the actual temperature of the drive.

H0b.28 Absolute encoder fault information given by FPGA

Hex:	200b-1Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.29 Axis status information given by FPGA

Hex:	200b-1Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.30 Axis fault information given by FPGA

Hex:	200b-1Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.31 Encoder fault information

Hex:	200b-20h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.33 Fault log

Hex:	200b-22h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Present fault
1: Last fault
2: 2nd to last fault
3: 3rd to last fault
4: 4th to last fault
5: 5th to last fault 6: 6th to last fault
7: 7th to last fault
8: 8th to last fault
9: 9th to last fault
10: 10th to last fault
11: 11th to last fault
12: 12th to last fault
13: 13th to last fault
14: 14th to last fault
15: 15th to last fault
16: 16th to last fault
17: 17th to last fault
18: 18th to last fault
19: 19th to last fault

Description

Used to view the latest 20 faults of the drive.

H0b.34 Fault code of the selected fault

Hex:	200b-23h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.35 Timestamp of the selected fault

Hex:	200b-24h	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:

0.0s–429496729.5s

Description

-

H0b.37 Motor speed upon occurrence of the selected fault

Hex:	200b-26h	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32767rpm to 32767rpm

Description

-

H0b.38 Motor phase U current upon occurrence of the selected fault

Hex:	200b-27h	Effective mode:	-
Min.:	-3276.7	Unit:	A
Max.:	3276.7	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:

-3276.7 A to 3276.7 A

Description

-

H0b.39 Motor phase V current upon occurrence of the selected fault

Hex:	200b-28h	Effective mode:	-
Min.:	-3276.7	Unit:	A
Max.:	3276.7	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:

-3276.7 A to 3276.7 A

Description

-

H0b.40 Bus voltage upon occurrence of the selected fault

Hex:	200b-29h	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16

Default: 0.0 Change: Unchangeable

Value Range:

0.0 V–6553.5 V

Description

-

H0b.41 Input terminal state on selected fault

Hex: 200b-2Ah Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0–65535

Description

-

H0b.43 Output terminal status upon occurrence of the selected fault

Hex: 200b-2Ch Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0–65535

Description

-

H0b.45 Internal fault code

Hex: 200b-2Eh Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0–65535

Description

-

H0b.46 Absolute encoder fault information given by FPGA upon occurrence of the selected fault

Hex:	200b-2Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.47 System status information given by FPGA upon occurrence of the selected fault

Hex:	200b-30h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.48 System fault information given by FPGA upon occurrence of the selected fault

Hex:	200b-31h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.49 Encoder fault information upon occurrence of the selected fault

Hex:	200b-32h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.51 Internal fault code upon occurrence of the selected fault

Hex:	200b-34h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.52 FPGA timeout fault standard bit upon occurrence of the selected fault

Hex:	200b-35h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H0b.53 Position following error (reference unit)

Hex:	200b-36h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p
Description
Indicates the position deviation value which has not been divided or multiplied by the electronic gear ratio in the position control mode.
Position deviation (reference unit) is the value obtained after encoder position deviation calculation. The precision is compromised during division.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.

H0b.55 Motor speed actual value

Hex:	200b-38h	Effective mode:	-
Min.:	-2147483648.0	Unit:	RPM
Max.:	2147483647.0	Data Type:	Int32
Default:	0.0	Change:	Unchangeable

Value Range:

-2147483648.0rpm to 2147483647.0rpm

Description

Indicates the actual value of motor speed, which is accurate to 0.1 rpm.
This parameter is a 32-bit integer, which is displayed as a decimal on the keypad.
H0A.25 (Filter time constant of speed feedback display) can be used to set the filter time constant of the speed feedback.

H0b.57 Control circuit bus voltage

Hex:	200b-3Ah	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 V–6553.5 V

Description

Displays the bus voltage of the control circuit.

H0b.58 Mechanical absolute position (low 32 bits)

Hex:	200b-3Bh	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the low 32-bit value (encoder unit) of the mechanical position feedback when the absolute encoder is used.

H0b.60 Mechanical absolute position (high 32 bits)

Hex:	200b-3Dh	Effective mode:	-

Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Displays the high 32-bit value (encoder unit) of the mechanical position feedback when the absolute encoder is used.

H0b.63 NotRdy state

Hex:	200b-40h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0: Normal
1: Control circuit error
2: Main circuit power input error

3: Bus undervoltage
4: Soft start failed
5: Encoder initialization undone
6: Short circuit to ground failed
7: Others
9: Fully closed-loop encoder initialization not completed

Description

Displays the reason for the NRD state.
0: Normal
1: Control circuit error
2: Main circuit power input error

3: Bus undervoltage
4: Soft start failed
5: Encoder initialization undone
6: Short circuit to ground failed
7: Others
9: Fully closed-loop encoder initialization not completed

H0b.66 Encoder temperature

Hex:	200b-43h	Effective mode:	-

Min.:	-32768	Unit:	°C
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32768°C–32767°C

Description

-

H0b.67 Load rate of braking resistor

Hex:	200b-44h	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	200.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0% to 200.0%

Description

-

H0b.70 Number of absolute encoder revolutions

Hex:	200b-47h	Effective mode:	-
Min.:	-32768	Unit:	Rev
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32768Rev to 32767Rev

Description

Indicates the number of revolutions of the absolute encoder.

H0b.71 Single-turn position fed back by the absolute encoder

Hex:	200b-48h	Effective mode:	-
Min.:	0	Unit:	p
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 2147483647p

Description

Displays the position feedback of the absolute encoder within one turn.

H0b.74 System fault information given by FPGA

Hex:	200b-4Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.77 Encoder position (low 32 bits)

Hex:	200b-4Eh	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the low 32-bit value of the position feedback of the absolute encoder.

H0b.79 Encoder position (high 32 bits)

Hex:	200b-50h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Displays the high 32-bit value of the position feedback of the absolute encoder.

H0b.81 Single-turn position of the rotary load (low 32 bits)

Hex:	200b-52h	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the low 32-bit value of the position feedback of the rotary load when the absolute system works in the rotation mode.

H0b.83 Single-turn position of the rotary load (high 32 bits)

Hex:	200b-54h	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Displays the high 32-bit value of the position feedback of the rotary load when the absolute system works the rotation mode.

H0b.85 Single-turn position of the rotary load (reference unit)

Hex:	200b-56h	Effective mode:	-
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0p to 4294967295p

Description

Displays the high 32-bit value of the position feedback of the rotary load when the absolute system works the rotation mode.

H0b.87 IGBT junction temperature

Hex:	200b-58h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–200

Description

-

H0b.90 Group No. of the abnormal parameter

Hex:	200b-5Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.91 Offset within the group of the abnormal parameter

Hex:	200b-5Ch	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0b.93 Closed loop state

Hex:	200b-5Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0: Half closed loop

1: Fully closed loop

Description

Displays the closed loop state in position control mode.

H0b.94 Individual power-on time

Hex:	200b-5Fh	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:

0.0s–429496729.5s

Description

Display the individual power-on time of the drive.

H0b.96 Individual power-on time upon occurrence of the selected fault

Hex:	200b-61h	Effective mode:	-
Min.:	0.0	Unit:	s
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:

0.0s–429496729.5s

Description

-

H0b.98 Dynamic braking resistor load rate

Hex:	200b-63h	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	200.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0% to 200.0%

Description

Display dynamic braking resistor load rate.

4.13 H0C Fault and Protection Parameters 2

H0C.53 Probe DI ON compensation time 2

Hex:	200C-36h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	200	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when touch probe 2 is switched on. (Effective when H0A_40 bit4 = 1)

H0C.54 **Probe DI OFF compensation time 2**

Hex:	200C-37h	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	1512	Change:	Real-time

Value Range:

-3000–3000

Description

Used to compensate for the action time when touch probe 2 is switched off. (Effective when H0A_40 bit4 = 1)

H0C.71 **Internal function switch**

Hex:	200C-48h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

bit9: FPGA encoder feedback overspeed point hide switch

4.14 H0d Auxiliary Parameters

H0d.00 **Software Reset**

Hex:	200d-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Enable

Description

Programs in the drive are reset automatically (similar to the program reset upon power-on) after the software reset function is enabled, without the need for a power cycle.

H0d.01 Fault Reset

Hex:	200d-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Enable

Description

When a No. 1 or No. 2 resettable fault occurs, you can enable the fault reset function in the non-operational state after rectifying the fault cause, stopping the keypad from displaying the fault and allowing the drive to enter the "rdy" state.

When a No. 3 alarm occurs, you can enable the fault reset function directly, regardless of the servo drive status.

H0d.02 Inertia auto-tuning enable

Hex:	200d-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65

Description

Used to enable offline inertia auto-tuning through the keypad. In the parameter display mode, switch to H0d.02 and press the SET key to enable offline inertia auto-tuning.

H0d.04 Read/write in encoder ROM

Hex:	200d-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Write ROM

2: Read ROM

3: ROM failure

Description

-

H0d.05 Emergency stop

Hex:	200d-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: No operation

1: Emergency stop

Description

-

H0d.06 Current loop auto-tuning test

Hex:	200d-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Enable current loop auto-tuning

2: Enable current loop step test (static)

3: Enable current loop step test

Description

0: No operation

1: Enable current loop auto-tuning

2: Enable current loop step test (static)

3: Enable current loop step test

H0d.10 Analog channel auto adjusting

Hex:	200d-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Adjusted through AI1

2: Adjusted through AI2

Description

When automatic adjustment of the analog channel is enabled, the drive automatically corrects the zero drift voltage of the analog channel to improve signal detection accuracy.

H0d.12 Phase U/V current balance correction

Hex:	200d-0Dh	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

-

H0d.17 Forced DI/DO enable switch

Hex:	200d-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit0: Forced DI enable switch

0: Disabled

1: Enabled

bit1: Forced DO enable switch

0: Disabled

1: Enabled

Description

Forced DI/DO selection.

H0d.18 Forced DI value

Hex:	200d-13h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	31	Change:	Real-time

Value Range:

0–31

Description

Defines whether the DI functions set in group H03 is active when forced DI is activated (H0d.17 = 1 or 3).
The value of H0d.18 is displayed as a hexadecimal on the keypad. When it is converted to a binary value, "bit(n) = 1" indicates the level logic of DI function is high level; "bit(n) = 0" indicates the level logic of the DI function is low level.

H0d.19 Forced DO value

Hex:	200d-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–3
Description
Defines whether the DO functions assigned in group H04 are active when forced DO is active (H0d.17 = 2 or 3).
The value of H0d.19 is displayed as a hexadecimal on the keypad. When it is converted to a binary value, "bit(n) = 1" indicates the DO function is active; "bit (n) = 0" indicates the DO function is inactive.

H0d.20 Absolute encoder reset

Hex:	200d-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: No operation
1: Reset fault
2: Reset fault and multi-turn data
3: Reset Inovance 2nd encoder fault
4: Reset Inovance 2nd encoder fault and multi-turn data
Description
You can reset the encoder error or the multi-turn data fed back by the encoder by setting H0d.20.

H0d.23 Motor cogging torque ripple auto-tuning enable

Hex:	200d-18h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No auto-tuning

1: Enabled

Description

-

H0d.29 Motor parameter auto-tuning

Hex:	200d-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No operation

1: Enabled

Description

Resistor inductance auto-tuning.

4.15 H0E Communication Function Parameters

H0E.00 Node address

Hex:	200E-01h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	127	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–127

Description

CAN Indicates the slave node address. Ensure this parameter is consistent with the configuration of the host controller.

H0E.01 Save objects written through communication to e2prom

Hex:	200E-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	4	Change:	Real-time

Value Range:

0: Not save
1: Save parameters
2: Save object dictionaries
3: Save parameters and object dictionaries
4: Save object dictionaries written before communication (OP)
255: Determine through H0E.03 and H0E.04

Description

You can use this parameter to select a data saving operation when parameters and object dictionaries are written through a serial port or SDO.

H0E.03 Save objects written through software (commissioning protocol) to e2prom

Hex:	200E-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Do not save
1: Save

Description

Saves objects written through software (commissioning protocol) to e2prom, including the parameter and object dictionary.

H0E.04 Save objects written through communication to e2prom (excluding commissioning protocol)

Hex:	200E-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Do not save
1: Save

Description

You can use this parameter to determine whether to save communication written data in e2prom (excluding commissioning protocol) (CANOpen, CANLink, Ethernet COE, ModBus485). The data include the function code and object dictionary

H0E.07 **Object dictionary unit selection**

Hex:	200E-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Reference unit system (p/s, p/s2)

1: User unit system (0.01 RPM, ms)

Description

Servo unit system switching:

0: Use reference unit system. The speed type dictionary unit is p/s, and the acceleration type object dictionary is p/s2.

1: Use the user unit system. The speed type object dictionary unit is 0.01 rpm, and the acceleration type object dictionary unit is the time (ms) taken to change from 0 rpm to 1000 rpm.

H0E.15 **Select group 6000 index (last 2 bits)**

Hex:	200E-10h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:

0–255

Description

Sets the index.

H0E.16 **Select group 6000 sub-index**

Hex:	200E-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–2

Description

Sets the sub-index.

H0E.20 **EtherCAT slave name**

Hex:	200E-15h	Effective mode:	-

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.21 EtherCAT slave alias

Hex:	200E-16h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H0E.22 Number of synchronous loss events allowed by EtherCAT

Hex:	200E-17h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	8	Change:	Real-time

Value Range:

1–20

Description

-

H0E.24 Sync loss count

Hex:	200E-19h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.25 **Max. error value and invalid frames of EtherCAT port 0 per unit time**

Hex:	200E-1Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.26 **Max. error value and invalid frames of EtherCAT port 1 per unit time**

Hex:	200E-1Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.27 **Max. transfer error of EtherCAT port per unit time**

Hex:	200E-1Ch	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.28 **Max. EtherCAT data frame processing unit error per unit time**

Hex:	200E-1Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–255

Description

-

H0E.29 **Max. link loss value of EtherCAT port 0 per unit time**

Hex:	200E-1Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.31 **EtherCAT synchronization mode setting**

Hex:	200E-20h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0–3

Description

-

H0E.32 **EtherCAT synchronization error threshold**

Hex:	200E-21h	Effective mode:	Real time
Min.:	100	Unit:	ns
Max.:	8000	Data Type:	UInt16
Default:	4000	Change:	At stop

Value Range:

100 ns–8000 ns

Description

-

H0E.33 **EtherCAT state machine status and port connection status**

Hex:	200E-22h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.34 Excessive CSP position command increment count

Hex:	200E-23h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	30	Data Type:	UInt16
Default:	20	Change:	Real-time

Value Range:

1–30

Description

-

H0E.35 AL fault code

Hex:	200E-24h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.36 EtherCAT enhanced link enable

Hex:	200E-25h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

-

H0E.37 **EtherCAT XML reset selection**

Hex:	200E-26h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disabled

1: Enabled

Description

-

H0E.38 **DC clock sync function tuning**

Hex:	200E-27h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

-

H0E.73 **EtherCAT port control mode and status display**

Hex:	200E-4Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H0E.80 **Modbus baud rate**

Hex:	200E-51h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	9	Change:	Real-time

Value Range:

0: 300 bps
1: 600 bps
2: 1200 bps
3: 2400 bps
4: 4800 bps
5: 9600 bps
6: 19200 bps
7: 38400 bps
8: 57600 bps
9: 115200 bps

Description

Defines the communication rate between the servo drive and the host controller. The baud rate set in the servo drive must be the same as that in the host controller. Otherwise, communication will fail.

H0E.81 Modbus data format

Hex:	200E-52h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:

0: No parity, 2 stop bits (N-2)
1: Even parity, 1 stop bit (E-1)
2: Odd parity, 1 stop bit (O-1)
3: No parity, 1 stop bit (N-1)

Description

Defines the data check mode between the servo drive and the host controller during communication.
0: No parity, 2 stop bits
1: Even parity, 1 stop bit
2: Odd parity, 1 stop bit
3: No parity, 1 stop bit
The data format of the servo drive must be the same as that of the host controller. Otherwise, communication will fail.

H0E.82 Modbus response delay

Hex:	200E-53h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	20	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:

0 ms–20 ms

Description

Defines the delay from the moment when the slave receives a command from the host controller to the moment when the slave returns a response.

H0E.83 Modbus communication timeout

Hex:	200E-54h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	600	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–600 ms

Description

-

H0E.84 Sequence of Modbus communication data bits

Hex:	200E-55h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: High bits before low bits

1: Low bits before high bits

Description

Defines the 32-bit data transmission format of Modbus communication.

0: High 16 bits before low 16 bits

1: Low 16 bits before high 16 bits

H0E.90 Communication version

Hex:	200E-5Bh	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–655.35

Description

-

H0E.96 **XML version information**

Hex:	200E-61h	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00–655.35

Description

-

4.16 H0F Fully Closed-Loop

H0F.00 **Encoder feedback mode**

Hex:	200F-01h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Internal encoder feedback

1: External encoder feedback

2: Inner/Outer loop switchover

Description

Defines the encoder feedback signal source in fully closed-loop control.

0: Internal encoder feedback. The position feedback signals come from the motor encoder.
1: External encoder feedback. The position feedback signals come from the full closed-loop external encoder.
The 1st group of electronic gear ratio is used.
2: Internal/External encoder switchover at electronic gear ratio switchover
The DI function 24 (FunIN.24: GEAR_SEL, electronic gear switchover) is used to perform internal/external position closed-loop switchover.
Inactive: internal encoder feedback, using the 1st electronic gear ratio used.
Active: external encoder feedback, with electronic gear ratio 2 used.

Note

To switch between inner and outer loops, you need to set H0F.00 to 2, rather than changing it to 0 or 1 in realtime.

H0F.01 **External encoder usage mode**

Hex:	200F-02h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Standard operating direction
1: Reverse operating direction
Description
Defines the feedback pulse counting direction of internal and external encoders when the motor rotates in the fully closed-loop mode.
0: Standard operating direction: The pulse feedback counter of the internal encoder (H0F.18) is in the same direction as that of the external encoder (H0F.20) during rotation of the motor.
1: Reverse operating direction: The pulse feedback counter of the internal encoder (H0F.18) is in the opposite direction as that of the external encoder (H0F.20) during rotation of the motor.

H0F.04 **External encoder pulses per revolution**

Hex:	200F-05h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	10000	Change:	At stop

Value Range:

0–2147483647

Description

Defines the pulses fed back by the external encoder per revolution of the motor. It defines the quantity relation between feedback pulses from the external encoder and those from the internal encoder.

Calculate the value of this parameter through analyzing mechanical parameters. When rigid connection is applied between the motor and the external encoder (scale), you can also set this parameter using the following method:

1. Manually rotate the motor and observe H0F.18 (Feedback pulse counter of internal encoder) in the meantime. After ensuring that the motor has rotated for a full turn (H0F.18 = Motor resolution), calculate the change of H0F.20 (Feedback pulse counter of external encoder) and use the absolute value of the change as the value of H0F.04.
2. Assume values of H0F.18 and H0F.20 are X1 and Y1 before the motor rotates and X2 and Y2 after the motor rotates, then the following formula applies: H0F.04 = Motor resolution x (Y2 - Y1)/(X2 - X1) The calculated result must be positive; if not, perform step 1 again.

For non-rigid connection, an error may exist in the calculation result.

Note:

Ensure H0F.04 is set properly. Otherwise, EB02.0 (Position deviation too large in fully closed loop) may occur after the drive operates.

H0F.08 Excessive deviation threshold in compound control mode

Hex:	200F-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	1000	Change:	Real-time

Value Range:

0–2147483647

Description

Defines the position deviation threshold at which the servo drive reports EB02.0 (Position deviation too large in fully closed-loop mode).

When H0F.08 is set to 0, the drive does not detect EB02.0 and always clears the fully closed-loop position deviation.

H0F.10 Clear deviation in compound control mode

Hex:	200F-0Bh	Effective mode:	Real time
Min.:	0	Unit:	Rev
Max.:	100	Data Type:	UInt16

Default:	1	Change:	Real-time

Value Range:

0 Rev to 100 Rev

Description

Defines the number of revolutions rotated by the motor per a clear of the fully closed-loop position deviation during operation. The number of revolutions is reflected by H0F.18 (Feedback pulse counter of internal encoder). The number of motor revolutions will not be cleared when the drive is not in the operational state.

H0F.13 Compound vibration suppression filter time

Hex:	200F-0Eh	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0 ms–6553.5 ms

Description

Defines the time constant for compound vibration suppression in fully closed-loop control when external encoder feedback (H0F.00 = 1 or 2) is used.
Increase the setpoint gradually and check the response change.
When the stiffness of the transmission mechanism between fully closed loop and internal loop is insufficient, set H0F.13 properly to improve system stability, which is to generate the effect of internal loop temporarily and form a fully closed loop again after the system is stabilized. When the stiffness is sufficient, there is no need to adjust this parameter.

H0F.16 Pulse deviation display in compound control mode

Hex:	200F-11h	Effective mode:	-
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Used to count and display the position deviation absolute value in fully closed loop control.

Pulse deviation in compound control = Absolute position feedback of external encoder - Absolute position feedback conversion value of internal encoder. The alignment of inner and outer loop feedbacks is performed each time the deviation is cleared.

H0F.18 Internal position pulse feedback display

Hex:	200F-13h	Effective mode:	-
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Used to count and display the number of feedback pulses of the internal encoder (after being divided or multiplied by electronic gear ratio, in internal encoder unit).

H0F.20 External position pulse feedback display

Hex:	200F-15h	Effective mode:	-
Min.:	-2147483648	Unit:	Encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Used to count and display the number of feedback pulses of the external encoder (after being divided or multiplied by electronic gear ratio, in external encoder unit).

H0F.22 External encoder phase Z detection invalid (quadrature pulse feedback)

Hex:	200F-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Detected

1: Not detected

Description

-

H0F.25 **Set the source of touch probe Z signal in fully closed-loop mode.**

Hex:	200F-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Motor Z signal

1: External feedback Z signal

Description

-

H0F.45 **Positioning completed/Position deviation threshold in fully closed-loop mode**

Hex:	200F-2Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Threshold scaled to outer loop unit

1: Same threshold used for inner and outer loops

Description

0: Fully closed-loop positioning completed threshold 6067/Excessive position deviation threshold 6065 (scaled to outer loop unit)

1: Same threshold used for inner and outer loops

H0F.46 **Fully closed-loop speed feedback selection**

Hex:	200F-2Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Internal encoder feedback

1: External encoder feedback

Description

-

4.17 H11 Multi-position

H11.00 Multi-position running mode

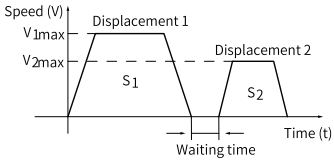
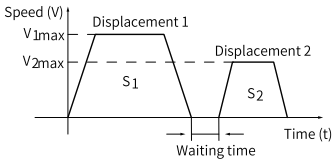
Hex:	2011-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	1	Change:	At stop

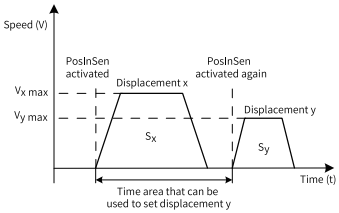
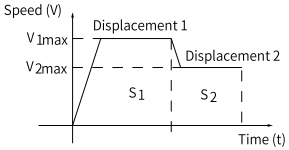
Value Range:

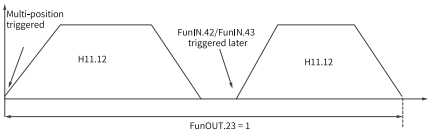
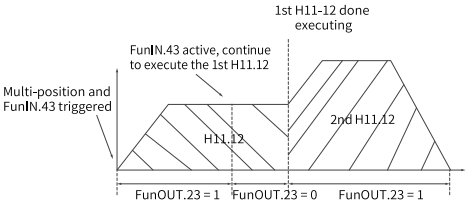
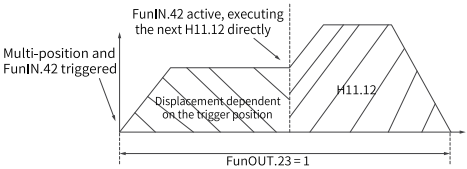
0: Single run (number of displacements selected in H11.01)
1: Cyclic operation (number of displacement selected in H11.01)
2: DI-based operation (selected by DI)
3: Sequential operation
5: Axis-controlled continuous operation

Description

Defines the multi-position operation mode when the main position reference source is multi-position references (H05.00 = 2) in the position control mode.

Value	Operation Mode	Remarks	Operation Curve
0	Individual operation	The drive stops after one cycle of operation. The drive automatically switches to the next speed. You can set the interval time between displacements. The multi-position reference is level-triggered.	 V_{1max} , V_{2max} : maximum operating speeds in displacement 1 and displacement 2 S_1 , S_2 : displacement 1 and displacement 2
1	Cyclic operation	The starting displacement after the first cycle is displacement 1. The drive automatically switches to the next speed. You can set the interval time between displacements. The multi-position reference is level-triggered.	 V_{1max} , V_{2max} : maximum operating speeds in displacement 1 and displacement 2 S_1 , S_2 : displacement 1 and displacement 2

Value	Operation Mode	Remarks	Operation Curve
2	DI-based operation	The drive continues operating when the displacement No. is updated. The speed No. is determined by the DI logic. The interval time between displacements is determined by the command delay of the host controller. The multi-position reference is edge-triggered.	 V_{xmax} , V_{ymax} : maximum operating speeds in displacement x and displacement y S_x , S_y : displacement x and displacement y
3	Sequential operation	The drive stops after one cycle of operation. The starting displacement after the first cycle is defined by H11.05. The drive automatically switches to the next speed. There is no interval time between displacements. The multi-position reference is level-triggered.	 V_{1max} , V_{2max} : maximum operating speeds in displacement 1 and displacement 2 S_1 , S_2 : displacement 1 and displacement 2

Value	Operation Mode	Remarks	Operation Curve
5	Axis-controlled continuous operation	The drives executes one displacement only. The individual operation mode, sequential operation mode, and interrupted operation mode are included. The PosInSen (multi-position reference enable) signal is level-triggered.	• Individual operation  The PosInSen (multi-position reference enable) signal is triggered only once (FunIN.43/42 triggered later). The drive stops after executing the distance defined by H11.12. • Sequential operation  The PosInSen (multi-position reference enable) signal is triggered only once. Write H11.12 again and activate FunIN.43 when the distance defined by the first H11.12 is still in progress.After receiving the new distance (or speed), which is the second H11.12, the drive continues executing the first H11.12 until the distance defined by the first H11.12 is done. Then it starts to execute the second H11.12 directly. The travel distance therefore is the sum of the first H11.12 and the second H11.12. • Interrupted operation  The PosInSen (Multi-position reference enable) signal is triggered only once. Write H11.12 (such as 1000000) again and activate FunIN.42 when the first H11.12 (such as 9000000) is still in progress. After receiving the new distance (or speed), which is the second H11.12, the drive stops executing the first H11.12 and turns to executing the second H11.12.

To use the multi-position function, assign FunIN.28 (PosInSen, multi-position reference enable) to a DI first. See "Group H03: Terminal input parameters" for the setting mode.

The positioning completed (COIN) signal is activated each time upon completion of a displacement. To determine whether a certain displacement is done executing, use FunOUT.5 (COIN, positioning completed). See "Group H04: Terminal output parameters" for details.

Ensure the S-ON signal is active during operation of each displacement. Otherwise, the drive stops immediately as defined by H02.05 (Stop mode at S-ON OFF) and the positioning completed (COIN) signal in inactive. In modes other than DI-based operation, if the S-ON signal is active but multi-position is disabled during operation of a certain displacement, the drive abandons the unsent displacement reference and stops, with the positioning completed (COIN) signal being active. If the multi-position function is enabled again, the displacement to be executed is defined by H11.02.

H11.01 Number of displacement references in multi-position mode

Hex:	2011-02h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1–16

Description

Defines the total number of displacement references in the multi-position mode. You can set different displacements, operating speeds, and acceleration/ deceleration time for each displacement.

H11.00 ≠ 2: Displacements are switched automatically in a sequence from 1, 2... H11.01.

H11.00 is 2: Assign four DIs (Hardware DI or VDI) with DI functions 6 to 9 (FunIN.6: CMD1 to FunIN.9: CMD4) and control the DI logic through the host controller to switch between different speeds. The segment No. is a 4-bit binary value. Bits 0 to 3 correspond to CMD1 to CMD4.

The displacement No. is a 4-bit binary value. The relationship between the displacement numbers and CMD1...CMD4 is shown in the following table.

FunIN.9	FunIN.8	FunIN.7	FunIN.6	Segment No.
CMD4	CMD3	CMD2	CMD1	
0	0	0	0	1
0	0	0	1	2
...				
1	1	1	1	16

H11.02 Starting displacement No. after pause

Hex:	2011-03h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Continue to execute the unexecuted displacements

1: Start from displacement 1

Description

Defines the starting displacement No. when the multi-position operation recovers from a pause.

Pause:

1. The servo drive switches to another control mode or the interrupt positioning function is enabled during multi-position operation.

2. The internal multi-position enable signal (FunIN.28:PosInSen) changes from "active" to "inactive".

0: Continue to execute the unexecuted displacements: For example, if H11.01 is set to 16 and the drive pauses at displacement 2, after the drive recovers from the pause, it will start from displacement 3.

1: Start from displacement 1: For example, if H11.01 is set to 16 and the drive pauses at displacement 2, after the drive recovers from the pause, it will start from displacement 1.

H11.03 Interval time unit

Hex:	2011-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: ms

1: s

Description

Defines the unit of acceleration/deceleration time and the interval time during multi-position operation.

Acceleration/Deceleration time: time for the motor to change from 0 rpm to 1000 rpm at a constant speed.

Interval time: interval time that starts from the end of the last reference to the beginning of the next reference

H11.04 Displacement reference type

Hex:	2011-05h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Relative displacement reference

1: Absolute displacement reference

Description

Relative displacement: position increment of the target position relative to the current motor position

Absolute displacement: position increment of the target position relative to the motor home.

H11.05 Starting displacement No. in sequential operation

Hex:	2011-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–16

Description

Defines whether to perform cyclic operation and the starting displacement No. after the first cycle of operation in the sequential operation mode (H11.00 = 3).

0: The drive executes the displacements defined by H11.01 only once and then stops. The motor is in the locked state.

1 to 16: The drive operates cyclically, with the starting displacement No. defined by H11.05 after the first cycle of operation. The value of H11.05 should be lower than or equal to H11.01.

H11.09 Deceleration upon axis control OFF

Hex:	2011-0Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	65535	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.10 Starting speed of displacement 1

Hex:	2011-0Bh	Effective mode:	Real time

Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

-

H11.11 Stop speed of displacement 1

Hex:	2011-0Ch	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm to 10000rpm

Description

-

H11.12 Displacement 1

Hex:	2011-0Dh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

Defines displacement 1 (reference unit) in multi-position operation.

H11.14 Max. speed of displacement 1

Hex:	2011-0Fh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

Defines the maximum speed of displacement 1 in multi-position operation. The maximum speed is the average operating speed when the motor is not in the acceleration/deceleration process. If H11.12 is set to a too low value, the actual motor speed will be lower than H11.14.

H11.15 Acc/Dec time of displacement 1

Hex:	2011-10h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the time for the motor to change from 0 rpm 1000 rpm at a constant speed during displacement 1.

Actual time needed for accelerating to H11.14 (Max. speed of displacement 1):

$$t = \frac{(H11.14) \times (H11.15)}{1000}$$

Note: The rigidity must be good, and the speed loop can follow the position command.

H11.16 Interval time after displacement 1

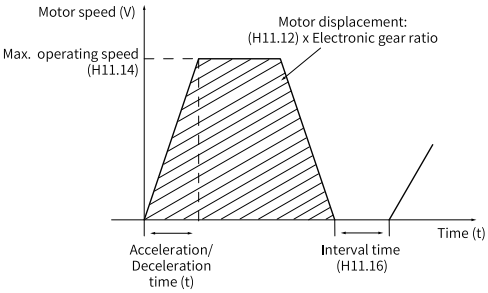
Hex:	2011-11h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

Defines the interval time that starts from the end of displacement 1 to the beginning of the next displacement.



H11.17 **Displacement 2**

Hex:	2011-12h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.19 **Max. speed of displacement 2**

Hex:	2011-14h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.20 **Acc/Dec time of displacement 2**

Hex:	2011-15h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16

Default: 10 Change: Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.21 Interval time after displacement 2

Hex:	2011-16h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.22 Displacement 3

Hex:	2011-17h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.24 Max. speed of displacement 3

Hex:	2011-19h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.25 Acc/Dec time of displacement 3

Hex:	2011-1Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.26 Interval time after displacement 3

Hex:	2011-1Bh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.27 Displacement 4

Hex:	2011-1Ch	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.29 Max. speed of displacement 4

Hex:	2011-1Eh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.30 Acc/Dec time of displacement 4

Hex:	2011-1Fh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.31 Interval time after displacement 4

Hex:	2011-20h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.32 Displacement 5

Hex:	2011-21h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.34 Max. speed of displacement 5

Hex:	2011-23h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16

Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.35 Acc/Dec time of displacement 5

Hex:	2011-24h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.36 Interval time after displacement 5

Hex:	2011-25h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.37 Displacement 6

Hex:	2011-26h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.39 **Max. speed of displacement 6**

Hex:	2011-28h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.40 **Acc/Dec time of displacement 6**

Hex:	2011-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.41 **Interval time after displacement 6**

Hex:	2011-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.42 **Displacement 7**

Hex:	2011-2Bh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.44 **Max. speed of displacement 7**

Hex:	2011-2Dh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.45 **Acc/Dec time of displacement 7**

Hex:	2011-2Eh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.46 **Interval time after displacement 7**

Hex:	2011-2Fh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.47 **Displacement 8**

Hex:	2011-30h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32

Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.49 Max. speed of displacement 8

Hex:	2011-32h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.50 Acc/Dec time of displacement 8

Hex:	2011-33h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.51 Interval time after displacement 8

Hex:	2011-34h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.52 **Displacement 9**

Hex:	2011-35h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.54 **Max. speed of displacement 9**

Hex:	2011-37h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.55 **Acc/Dec time of displacement 9**

Hex:	2011-38h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.56 **Interval time after displacement 9**

Hex:	2011-39h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.57 **Displacement 10**

Hex:	2011-3Ah	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.59 **Max. speed of displacement 10**

Hex:	2011-3Ch	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.60 **Acc/Dec time of displacement 10**

Hex:	2011-3Dh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.61 **Interval time after displacement 10**

Hex:	2011-3Eh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16

Default: 10 Change: Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.62 Displacement 11

Hex: 2011-3Fh Effective mode: Real time

Min.: -1073741824 Unit: Reference unit

Max.: 1073741824 Data Type: Int32

Default: 10000 Change: Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.64 Max. speed of displacement 11

Hex: 2011-41h Effective mode: Real time

Min.: 1 Unit: RPM

Max.: 10000 Data Type: UInt16

Default: 200 Change: Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.65 Acc/Dec time of displacement 11

Hex: 2011-42h Effective mode: Real time

Min.: 0 Unit: ms

Max.: 65535 Data Type: UInt16

Default: 10 Change: Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.66 Interval time after displacement 11

Hex: 2011-43h Effective mode: Real time

Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.67 **Displacement 12**

Hex:	2011-44h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.69 **Max. speed of displacement 12**

Hex:	2011-46h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.70 **Acc/Dec time of displacement 12**

Hex:	2011-47h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.71 **Interval time after displacement 12**

Hex:	2011-48h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.72 **Displacement 13**

Hex:	2011-49h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.74 **Max. speed of displacement 13**

Hex:	2011-4Bh	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.75 **Acc/Dec time of displacement 13**

Hex:	2011-4Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.76 Interval time after displacement 13

Hex:	2011-4Dh	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.77 Displacement 14

Hex:	2011-4Eh	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.79 Max. speed of displacement 14

Hex:	2011-50h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.80 Acc/Dec time of displacement 14

Hex:	2011-51h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16

Default:	10	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
-

H11.81 Interval time after displacement 14

Hex:	2011-52h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:
0 ms(s) to 10000 ms(s)
Description
-

H11.82 Displacement 15

Hex:	2011-53h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:
-1073741824 to 1073741824
Description
-

H11.84 Max. speed of displacement 15

Hex:	2011-55h	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
1rpm to 10000rpm
Description
-

H11.85 Acc/Dec time of displacement 15

Hex:	2011-56h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.86 Interval time after displacement 15

Hex:	2011-57h	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

H11.87 Displacement 16

Hex:	2011-58h	Effective mode:	Real time
Min.:	-1073741824	Unit:	Reference unit
Max.:	1073741824	Data Type:	Int32
Default:	10000	Change:	Real-time

Value Range:

-1073741824 to 1073741824

Description

-

H11.89 Max. speed of displacement 16

Hex:	2011-5Ah	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

1rpm to 10000rpm

Description

-

H11.90 **Acc/Dec time of displacement 16**

Hex:	2011-5Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

-

H11.91 **Interval time after displacement 16**

Hex:	2011-5Ch	Effective mode:	Real time
Min.:	0	Unit:	ms (s)
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms(s) to 10000 ms(s)

Description

-

4.18 H12 Multi-Speed

H12.00 **Multi-speed operation mode**

Hex:	2012-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Individual operation (number of speeds selected in H12.01)

1: Cyclic operation (number of speeds selected in H12.01)

2: DI-based operation

Description

Defines the multi-speed operation mode when the speed reference source is multi-speed reference (H06.01 = 5, H06.02 = 1/2/3) in the speed control mode.

0: Stop after one run, and the segment No. is auto incremented and switched
1: Cyclic. The starting segment number of each run is 1, and the segment number is auto incremented and switched. If the servo drive is enabled, the cyclic operation state is maintained all the time.
2. The drive can run continuously when it is enabled. The segment number is determined by DI terminal logic. The running time of each speed reference is only determined by the interval time of segment number switching. FunIN.5 (DlR-SEL) can be used to switch the direction of the speed reference.
The S-ON signal must be active during running of each speed reference; otherwise, the servo drive will stop immediately as defined by H02.05 (Stop mode at S-ON off).
Speed arrival (FunOUT.19: V-Arr) signal is valid when a certain speed reference reaches the set value.

H12.01 Number of speed references in multi-speed mode

Hex:	2012-02h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:
1–16
Description
Defines the total number of speed references in the multi-speed mode. Different speed references, operating time, and acceleration/deceleration time (four groups optional) can be set for each speed.
H12.00 ≠ 2: Speeds are switched automatically in a sequence from 1, 2... H12.01.
H12.00 is 2: Assign four DIs (Hardware DI or VDI) with DI functions 6 to 9 (FunIN.6: CMD1 to FunIN.9: CMD4) and control the DI logic through the host controller to switch between different speeds. The segment No. is a 4-bit binary value. Bits 0 to 3 correspond to CMD1 to CMD4.

H12.02 Operating time unit

Hex:	2012-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: s
1: min

Description

Defines the time unit of multi-speed operation.

0: s

1: min

H12.03 Acceleration time 1

Hex:	2012-04h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.04 Deceleration time 1

Hex:	2012-05h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.

Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.05 Acceleration time 2

Hex:	2012-06h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Four groups of acceleration/deceleration time can be set for each speed reference.
Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.06 **Deceleration time 2**

Hex:	2012-07h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Four groups of acceleration/deceleration time can be set for each speed reference.
Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.07 **Acceleration time 3**

Hex:	2012-08h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Four groups of acceleration/deceleration time can be set for each speed reference.
Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.08 **Deceleration time 3**

Hex:	2012-09h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:
0 ms–65535 ms
Description

Four groups of acceleration/deceleration time can be set for each speed reference.
Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.09 **Acceleration time 4**

Hex:	2012-0Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Four groups of acceleration/deceleration time can be set for each speed reference.
Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H12.10 **Deceleration time 4**

Hex:	2012-0Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Four groups of acceleration/deceleration time can be set for each speed reference.
Deceleration time is the time for the motor to decelerate from 1000 RPM to 0 RPM at a constant speed.

H12.20 **1st speed reference**

Hex:	2012-15h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm

Description

-

H12.21 Operating time of speed 1

Hex:	2012-16h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

Defines the operating time of speed 1.

The operating time is the sum of the speed variation time from previous speed reference to present speed reference plus the average operating time of present speed reference.

If the operating time is set to 0, the drive skips this speed reference automatically.

As long as H12.00 (Multi-speed operation mode) is set to 2 (DI-based operation) and the speed No. determined by the external DI does not change, the drive continues operating at the speed defined by this speed reference, without being affected by the reference operating time.

H12.22 1st speed rise/drop and curve smoothing parameter time

Hex:	2012-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

bit0-bit7: Speed rise and drop time
0: Zero acc and dec time
1: Acc and dec time 1
2: Acc and dec time 2
3: Acc and dec time 3
4: Acc and dec time 4
bit8-bit15: S curve smoothing parameter
1: Smoothing parameter 1
2: Smoothing parameter 2
3: Smoothing parameter 3
4: Smoothing parameter 4
5: Smoothing parameter 5
6: Smoothing parameter 6
7: Smoothing parameter 7
8: Smoothing parameter 8

Description

1. Acceleration/deceleration time
Selects the acceleration/deceleration time of speed 1:
0: Zero acc./dec. time Acceleration time: 0
Deceleration time: 0
1: Acc./dec. Time 1 Acceleration time: H12.03
Deceleration time: H12.04
2: Acc./dec. Time 2 Acceleration time: H12.05
Deceleration time: H12.06
3: Acc./dec. Time 3 Acceleration time: H12.07
Deceleration time: H12.08
4: Acc./dec. Time 4 Acceleration time: H12.09
Deceleration time: H12.10
2. S-curve smoothing parameter
1: Smoothing parameter 1 increasing acceleration time of acceleration segment: H06.51
Decreasing acceleration time of acceleration segment: H06.52
Decreasing deceleration time of deceleration segment: H06.53
Decreasing acceleration time of acceleration segment: H06.54
2. Smoothing parameter 2 increasing acceleration time of acceleration segment: H06.55
Decreasing acceleration time of acceleration segment: H06.56
Decreasing deceleration time of deceleration segment: H06.57
Decreasing acceleration time of acceleration segment: H06.58
3. Smoothing parameter 3 increasing acceleration time of acceleration segment: H06.59
Decreasing acceleration time of acceleration segment: H06.60

Decreasing deceleration time of deceleration segment: H06.61
Decreasing acceleration time of acceleration segment: H06.62
4. Smoothing parameter 4 increasing acceleration time of acceleration segment: H06.63
Decreasing acceleration time of acceleration segment: H06.64
Decreasing deceleration time of deceleration segment: H06.65
Decreasing acceleration time of acceleration segment: H06.66
5. Smoothing parameter 5 increasing acceleration time of acceleration segment: H06.67
Decreasing acceleration time of acceleration segment: H06.68
Decreasing deceleration time of deceleration segment: H06.69
Decreasing acceleration time of acceleration segment: H06.70
6. Smoothing parameter 6 increasing acceleration time of acceleration segment: H06.71
Decreasing acceleration time of acceleration segment: H06.72
Decreasing deceleration time of deceleration segment: H06.73
Decreasing acceleration time of acceleration segment: H06.74
7. Smoothing parameter 7 increasing acceleration time of acceleration segment: H06.75
Decreasing acceleration time of acceleration segment: H06.76
Decreasing deceleration time of deceleration segment: H06.77
Decreasing acceleration time of acceleration segment: H06.78
8. Smoothing parameter 8 increasing acceleration time of acceleration segment: H06.79
Decreasing acceleration time of acceleration segment: H06.80
Decreasing deceleration time of deceleration segment: H06.81
Decreasing acceleration time of acceleration segment: H06.82

H12.23 **Reference 2**

Hex:	2012-18h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	100	Change:	Real-time

Value Range:
-10000 rpm to +10000 rpm
Description
-

H12.24 Operating time of speed 2

Hex:	2012-19h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.25 2nd speed rise/drop time and curve smoothing parameter time

Hex:	2012-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.26 Reference 3

Hex:	2012-1Bh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	300	Change:	Real-time

Value Range:

-10000 rpm to +10000 rpm

Description

-

H12.27 Operating time of speed 3

Hex:	2012-1Ch	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.28 3nd speed rise/drop time and curve smoothing parameter time

Hex:	2012-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.29 Reference 4

Hex:	2012-1Eh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	500	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.30 Operating time of speed 4

Hex:	2012-1Fh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.31 4th speed rise/drop time and curve smoothing parameter time

Hex:	2012-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.32 Reference 5

Hex:	2012-21h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	700	Change:	Real-time

Value Range:
-10000 RPM to +10000 RPM
Description
-

H12.33 Operating time of speed 5

Hex:	2012-22h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.34 5th speed rise/drop time and curve smoothing parameter time

Hex:	2012-23h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.35 Reference 6

Hex:	2012-24h	Effective mode:	Real time

Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	900	Change:	Real-time

Value Range:
-10000 RPM to +10000 RPM
Description
-

H12.36 Operating time of speed 6

Hex:	2012-25h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.37 6th speed rise/drop time and curve smoothing parameter time

Hex:	2012-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.38 Reference 7

Hex:	2012-27h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	600	Change:	Real-time

Value Range:
-10000 RPM to +10000 RPM
Description
-

H12.39 **Operating time of speed 7**

Hex:	2012-28h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.40 **7th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.41 **Reference 8**

Hex:	2012-2Ah	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	300	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.42 **Operating time of speed 8**

Hex:	2012-2Bh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.43 8th speed rise/drop time and curve smoothing parameter time

Hex:	2012-2Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.44 Reference 9

Hex:	2012-2Dh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	100	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.45 Operating time of speed 9

Hex:	2012-2Eh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.46 9th speed rise/drop time and curve smoothing parameter time

Hex:	2012-2Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.47 Reference 10

Hex:	2012-30h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-100	Change:	Real-time

Value Range:
-10000 RPM to +10000 RPM
Description
-

H12.48 Operating time of speed 10

Hex:	2012-31h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.49 10th speed rise/drop time and curve smoothing parameter time

Hex:	2012-32h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.50 Reference 11

Hex:	2012-33h	Effective mode:	Real time

Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-300	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.51 Operating time of speed 11

Hex:	2012-34h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.52 11th speed rise/drop time and curve smoothing parameter time

Hex:	2012-35h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.53 Reference 12

Hex:	2012-36h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-500	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.54 **Operating time of speed 12**

Hex:	2012-37h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.55 **12th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-38h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.56 **Reference 13**

Hex:	2012-39h	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-700	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.57 **Operating time of speed 13**

Hex:	2012-3Ah	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.58 **13th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-3Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:

See H12.22.

Description

Same as H12.22.

H12.59 **Reference 14**

Hex:	2012-3Ch	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-900	Change:	Real-time

Value Range:

-10000 RPM to +10000 RPM

Description

-

H12.60 **Operating time of speed 14**

Hex:	2012-3Dh	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.61 **14th speed rise/drop time and curve smoothing parameter time**

Hex:	2012-3Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.62 Reference 15

Hex:	2012-3Fh	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-600	Change:	Real-time

Value Range:
-10000 RPM to +10000 RPM
Description
-

H12.63 Operating time of speed 15

Hex:	2012-40h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.64 15th speed rise/drop time and curve smoothing parameter time

Hex:	2012-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

H12.65 Reference 16

Hex:	2012-42h	Effective mode:	Real time

Min.:	-10000	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	-300	Change:	Real-time

Value Range:
-10000 RPM to +10000 RPM
Description
-

H12.66 Operating time of speed 16

Hex:	2012-43h	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Real-time

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.67 16th speed rise/drop time and curve smoothing parameter time

Hex:	2012-44h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	256	Change:	Real-time

Value Range:
See H12.22.
Description
Same as H12.22.

4.19 H17 Virtual DI/DO

H17.90 Communication VDI enable

Hex:	2017-5Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Disabled
1: Enabled

Description

To use the VDI function:

1. Set H17.90 to enable VDI.
2. Set the default level after power-on through H17.91.
3. Set the DI function of the VDI terminal through parameters in group H17.
4. Set VDI output through H31.00.

H17.91 VDI default value after power-on

Hex:	2017-5Ch	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit0: VDI1
bit1: VDI2
bit2: VDI3
bit3: VDI4
bit4: VDI5
bit5: VDI6
bit6: VDI7
bit7: VDI8
bit8: VDI9
bit9: VDI10
bit10: VDI11
bit11: VDI12
bit12: VDI13
bit13: VDI14
bit14: VDI15
bit15: VDI16

Description

Configures the initial value of VDI upon power-on.

Bit 0 corresponds to VDI1.

Bit 1 corresponds to VDI2.

…

Bit 15 corresponds to VDI16.

H17.00 VDI1 function

Hex:	2017-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:

0: Undefined
1: Servo enabled
2: Alarm reset signal
5: Multi-run reference direction selection
6: Multi-run reference switching CMD1
7: Multi-run reference switching CMD2
8: Multi-run reference switching CMD3
9: Multi-run reference switching CMD4
14: Positive limit switch
15: Negative limit switch
18: Forward jog
19: Reverse jog
24: Electronic gear selection
28: Multi-position reference enabled
31: Home switch
34: Emergency stop
40: Multi-speed enabled

Description

-

H17.01 VDI1 logic level selection

Hex:	2017-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1
1: Active when the written value changes from 0 to 1

Description

-

H17.02 VDI2 function

Hex:	2017-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.03 VDI2 logic level selection

Hex:	2017-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.04 VDI3 function

Hex:	2017-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.05 VDI3 logic level selection

Hex:	2017-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.06 VDI4 function

Hex:	2017-07h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.07 VDI4 logic level selection

Hex:	2017-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.08 VDI5 function

Hex:	2017-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.09 VDI5 logic level selection

Hex:	2017-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.10 **VDI6 function**

Hex:	2017-0Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.11 **VDI6 logic level selection**

Hex:	2017-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.12 **VDI7 function**

Hex:	2017-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.13 **VDI7 logic level selection**

Hex:	2017-0Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1
1: Active when the written value changes from 0 to 1
Description
-

H17.14 VDI8 function

Hex:	2017-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.00.
Description
-

H17.15 VDI8 logic level selection

Hex:	2017-10h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Active when the written value is 1
1: Active when the written value changes from 0 to 1
Description
-

H17.16 VDI9 function

Hex:	2017-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.00.
Description
-

H17.17 VDI9 logic level selection

Hex:	2017-12h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.18 VDI10 function

Hex:	2017-13h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.19 VDI10 logic level selection

Hex:	2017-14h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.20 VDI11 function

Hex:	2017-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.21 VDI11 logic level selection

Hex:	2017-16h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.22 VDI12 function

Hex:	2017-17h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.23 VDI12 logic level selection

Hex:	2017-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.24 VDI13 function

Hex:	2017-19h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.25 VDI13 logic level selection

Hex:	2017-1Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.26 VDI14 function

Hex:	2017-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.27 VDI14 logic level selection

Hex:	2017-1Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.28 VDI15 function

Hex:	2017-1Dh	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.29 VDI15 logic level selection

Hex:	2017-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.30 VDI16 function

Hex:	2017-1Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.00.

Description

-

H17.31 VDI16 logic level selection

Hex:	2017-20h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active when the written value is 1

1: Active when the written value changes from 0 to 1

Description

-

H17.92 Communication VDO enable

Hex:	2017-5Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

To use the VDO function:

1. Set H17.92 to enable VDO.
2. Set the default level after power-on through H17.93.
3. Set the DO function of the VDO terminal through parameters in group H17.
4: Read the output level of the VDO in H17.32.

H17.93 VDO default value after power-on

Hex:	2017-5Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

bit0: VDO1

bit1: VDO2

bit2: VDO3

bit3: VDO4

bit4: VDO5

bit5: VDO6

bit6: VDO7

bit7: VDO8

bit8: VDO9

bit9: VDO10

bit10: VDO11

bit11: VDO12

bit12: VDO13

bit13: VDO14

bit14: VDO15

bit15: VDO16

Description

Configures the initial value of VDO upon power-on.

Bit 0 corresponds to VDO1.

Bit 1 corresponds to VDO2.
…
Bit 15 corresponds to VDO16.

H17.32 VDO virtual level

Hex:	2017-21h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H17.33 VDO1 function

Hex:	2017-22h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Undefined
1: Servo ready
2: Motor rotation signal
9: Braking
10: Warning
11: Failure
26: Closed-loop state
32: EDM output
Description
-

H17.34 VDO1 logic level selection

Hex:	2017-23h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic

Description
-

H17.35 **VDO2 function**

Hex:	2017-24h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.33.
Description
-

H17.36 **VDO2 logic level selection**

Hex:	2017-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.37 **VDO3 function**

Hex:	2017-26h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.33.
Description
-

H17.38 **VDO3 logic level selection**

Hex:	2017-27h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.39 VDO4 function

Hex:	2017-28h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.40 VDO4 logic level selection

Hex:	2017-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.41 VDO5 function

Hex:	2017-2Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.42 VDO5 logic level selection

Hex:	2017-2Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.43 VDO6 function

Hex:	2017-2Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.44 VDO6 logic level selection

Hex:	2017-2Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.45 VDO7 function

Hex:	2017-2Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.46 VDO7 logic level selection

Hex:	2017-2Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.47 VDO8 function

Hex:	2017-30h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.48 VDO8 logic level selection

Hex:	2017-31h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.49 VDO9 function

Hex:	2017-32h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.50 VDO9 logic level selection

Hex:	2017-33h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.51 VDO10 function

Hex:	2017-34h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.52 VDO10 logic level selection

Hex:	2017-35h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.53 VDO11 function

Hex:	2017-36h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.54 VDO11 logic level selection

Hex:	2017-37h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.55 VDO12 function

Hex:	2017-38h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.56 VDO12 logic level selection

Hex:	2017-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.57 VDO13 function

Hex:	2017-3Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.33.
Description
-

H17.58 VDO13 logic level selection

Hex:	2017-3Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.59 VDO14 function

Hex:	2017-3Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H17.33.
Description
-

H17.60 VDO14 logic level selection

Hex:	2017-3Dh	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.61 VDO15 function

Hex:	2017-3Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.62 VDO15 logic level selection

Hex:	2017-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.63 VDO16 function

Hex:	2017-40h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H17.33.

Description

-

H17.64 **VDO16 logic level selection**

Hex:	2017-41h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

4.20 H18 Position Comparison Output

H18.00 **Position comparison output selection**

Hex:	2018-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disable

1: Enable (rising edge-triggered)

Description

-

H18.01 **Position comparison output feedback source**

Hex:	2018-02h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Motor encoder feedback

1: Fully closed-loop position feedback

Description

-

H18.02 **Position comparison resolution**

Hex:	2018-03h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: 24-bit
1: 23-bit
2: 22-bit
3: 21-bit
4: 20-bit
5: 19-bit
6: 18-bit
7: 17-bit

Description

-

H18.03 Position comparison mode

Hex:	2018-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Individual comparison mode
1: Cyclic comparison mode
2: Fixed cyclic comparison mode

Description

-

H18.04 Current position as zero

Hex:	2018-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Disable
1: Enable (rising edge-triggered)

Description

-

H18.05 Position comparison output width

Hex:	2018-06h	Effective mode:	Real time
Min.:	0.1	Unit:	ms
Max.:	204.7	Data Type:	UInt16
Default:	0.1	Change:	Real-time

Value Range:

0.1 ms–204.7 ms

Description

Defines the active pulse width of the DO when the comparison point is reached. The value range is 0 to 204.7 (in ms).

H18.06 Position comparison output ABZ port polarity

Hex:	2018-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	OCZ output logic	0: Positive, output high level upon active logic
		1: Negative, output low level upon active logic
1	Z output logic	0: Positive, output high level upon active logic
		1: Negative, output low level upon active logic
2	A/B output logic	0: Positive, output high level upon active logic
		1: Negative, output low level upon active logic

Description

0: Positive (output high level upon active logic) 1: Negative (output high level upon active logic)

bit0: OCZ output logic

Bit1: Z output logic

Bit2: A/B output logic

H18.07 Position comparison start point

Hex:	2018-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:
0–40
Description
-

H18.08 Position comparison end point

Hex:	2018-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–40
Description
-

H18.09 Current state of position comparison

Hex:	2018-0Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	1024	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–1024
Description
-

H18.10 Real-time position of position comparison

Hex:	2018-0Bh	Effective mode:	-
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648–2147483647
Description
-

H18.12 Zero offset of position comparison

Hex:	2018-0Dh	Effective mode:	Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H18.14 Position comparison output delay compensation

Hex:	2018-0Fh	Effective mode:	Upon the next power-on
Min.:	-12.00	Unit:	us
Max.:	12.00	Data Type:	Int16
Default:	0.00	Change:	Real-time

Value Range:
-12.00us to 12.00us
Description
Compensates the delay caused by hardware signal output.

H18.15 Fixed cyclic comparison

Hex:	2018-10h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:
1–65535
Description
-

H18.16 ABZ output function setting

Hex:	2018-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Name	Description
0	OCZ output function	0: Frequency-division output
		1: Position comparison
1	Z port output function	0: Frequency-division output
		1: Position comparison
2	A/B port output function	0: Frequency-division output
		1: Position comparison

Description

0: Frequency-division output 1: Position comparison

bit0: OCZ port function setting

Bit 1: Z port function setting

Bit 2: A/B function setting

H18.17 **Number of fixed mode cycles**

Hex:	2018-12h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

4.21 H19 Target Position Parameters

H19.00 **Target value of position comparison 1**

Hex:	2019-01h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.02 **Attribute value of position comparison 1**

Hex:	2019-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

bit	Description
0	Output DO active signal if current position changes from "less than" to "more than" the comparison point
1	Output DO active signal if current position changes from "more than" to "less than" the comparison point
2–6	Reserved
7	DO1 output
8	DO2 output
9–11	Reserved
12	Frequency-division A output
13	Frequency-division B output
14	Frequency-division Z output
15	Frequency-division OCZ output

Description

Attribute setting of position comparison point 1

H19.03 **Target value of position comparison 2**

Hex:	2019-04h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.05 **Attribute value of position comparison 2**

Hex:	2019-06h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.06 Target value of position comparison 3

Hex:	2019-07h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.08 Attribute value of position comparison 3

Hex:	2019-09h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.09 Target value of position comparison 4

Hex:	2019-0Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.11 **Attribute value of position comparison 4**

Hex:	2019-0Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.12 **Target value of position comparison 5**

Hex:	2019-0Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.14 **Attribute value of position comparison 5**

Hex:	2019-0Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.15 **Target value of position comparison 6**

Hex:	2019-10h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.17 **Attribute value of position comparison 6**

Hex:	2019-12h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.18 **Target value of position comparison 7**

Hex:	2019-13h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.20 **Attribute value of position comparison 7**

Hex:	2019-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.21 **Target value of position comparison 8**

Hex:	2019-16h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.23 Attribute value of position comparison 8

Hex:	2019-18h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.24 Target value of position comparison 9

Hex:	2019-19h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.26 Attribute value of position comparison 9

Hex:	2019-1Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.27 Target value of position comparison 10

Hex:	2019-1Ch	Effective mode:	Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.29 Attribute value of position comparison 10

Hex:	2019-1Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.30 Target value of position comparison 11

Hex:	2019-1Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.32 Attribute value of position comparison 11

Hex:	2019-21h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.33 Target value of position comparison 12

Hex:	2019-22h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.35 Attribute value of position comparison 12

Hex:	2019-24h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.36 Target value of position comparison 13

Hex:	2019-25h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.38 Attribute value of position comparison 13

Hex:	2019-27h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.

Description
See H19.02.

H19.39 Target value of position comparison 14

Hex:	2019-28h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.41 Attribute value of position comparison 14

Hex:	2019-2Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.42 Target value of position comparison 15

Hex:	2019-2Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.44 Attribute value of position comparison 15

Hex:	2019-2Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.45 Target value of position comparison 16

Hex:	2019-2Eh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.47 Attribute value of position comparison 16

Hex:	2019-30h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.48 Target value of position comparison 17

Hex:	2019-31h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.50 Attribute value of position comparison 17

Hex:	2019-33h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.51 Target value of position comparison 18

Hex:	2019-34h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.53 Attribute value of position comparison 18

Hex:	2019-36h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.54 Target value of position comparison 19

Hex:	2019-37h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.56 Attribute value of position comparison 19

Hex:	2019-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.57 Target value of position comparison 20

Hex:	2019-3Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.59 Attribute value of position comparison 20

Hex:	2019-3Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.60 Target value of position comparison 21

Hex:	2019-3Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647

Description

-

H19.62 **Attribute value of position comparison 21**

Hex:	2019-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.63 **Target value of position comparison 22**

Hex:	2019-40h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.65 **Attribute value of position comparison 22**

Hex:	2019-42h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.66 **Target value of position comparison 23**

Hex:	2019-43h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.68 Attribute value of position comparison 23

Hex:	2019-45h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.69 Target value of position comparison 24

Hex:	2019-46h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.71 Attribute value of position comparison 24

Hex:	2019-48h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.72 Target value of position comparison 25

Hex:	2019-49h	Effective mode:	Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.74 Attribute value of position comparison 25

Hex:	2019-4Bh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.75 Target value of position comparison 26

Hex:	2019-4Ch	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.77 Attribute value of position comparison 26

Hex:	2019-4Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.78 Target value of position comparison 27

Hex:	2019-4Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.80 Attribute value of position comparison 27

Hex:	2019-51h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.81 Target value of position comparison 28

Hex:	2019-52h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.83 Attribute value of position comparison 28

Hex:	2019-54h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.

Description
See H19.02.

H19.84 Target value of position comparison 29

Hex:	2019-55h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.86 Attribute value of position comparison 29

Hex:	2019-57h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.87 Target value of position comparison 30

Hex:	2019-58h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.89 Attribute value of position comparison 30

Hex:	2019-5Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.90 Target value of position comparison 31

Hex:	2019-5Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.92 Attribute value of position comparison 31

Hex:	2019-5Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.93 Target value of position comparison 32

Hex:	2019-5Eh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.95 Attribute value of position comparison 32

Hex:	2019-60h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.96 Target value of position comparison 33

Hex:	2019-61h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.98 Attribute value of position comparison 33

Hex:	2019-63h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.99 Target value of position comparison 34

Hex:	2019-64h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.101 Attribute value of position comparison 34

Hex:	2019-66h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.102 Target value of position comparison 35

Hex:	2019-67h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.104 Attribute value of position comparison 35

Hex:	2019-69h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.105 Target value of position comparison 36

Hex:	2019-6Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647

Description

-

H19.107 Attribute value of position comparison 36

Hex:	2019-6Ch	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.108 Target value of position comparison 37

Hex:	2019-6Dh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

-

H19.110 Attribute value of position comparison 37

Hex:	2019-6Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

See H19.02.

Description

See H19.02.

H19.111 Target value of position comparison 38

Hex:	2019-70h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.113 Attribute value of position comparison 38

Hex:	2019-72h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.114 Target value of position comparison 39

Hex:	2019-73h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.116 Attribute value of position comparison 39

Hex:	2019-75h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

H19.117 Target value of position comparison 40

Hex:	2019-76h	Effective mode:	Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
-

H19.119 Attribute value of position comparison 40

Hex:	2019-78h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
See H19.02.
Description
See H19.02.

4.22 H21 Current Loop Gain Switchover Parameters

H21.00 Current loop gain switchover

Hex:	2021-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: No operation
1: Enabled
Description
Used to enable or disable the current loop gain switchover function.
0: No operation, turned off
1: Enabled, turned on

4.23 H22 Technology Segment Parameters

H22.00 Process segment command trigger

Hex:	2022-01h	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–1000

Description

Used to trigger the process segment and read the state. The process segment can be triggered through the keypad or communication. The process segment state can be read through H22.00.

When triggering the technology segment:

The homing function is triggered when 0 is written to H22.00.

Process segments 1 to 15 are triggered when 1 to 15 are written to H22.00.

The process segment pauses when 1000 is written to H22.00.

E126.0 (Process segment number error) will be reported when 16 to 999 are written to H22.00.

When reading the state of the technology segment:

The process segment number will be read back when commands in the positioning mode are not done executing.

The process segment number + 10000 will be read back when commands in the positioning mode are done executing.

The process segment number + 20000 will be read back when commands in the positioning mode are done executing and positioning has been completed.

H22.01 Process segment triggered by the event rising edge

Hex:	2022-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

DI: ProceEvTri (OFF to ON, rising edge-triggered).
0–3bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri1 rising edge. When its value is 1–15, DI is triggered: Process segment 1–15 is executed during ProceEvTri1 rising edge.
4–7bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri2 rising edge. When its value is 1–15, DI is triggered: Process segments 1–15 are executed during ProceEvTri2 rising edge.
8–11bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri3 rising edge. When its value is 1–15, DI is triggered: Process segments 1–15 are executed during ProceEvTri3 rising edge.
12–15bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri4 rising edge. When its value is 1–15, DI is triggered: Process segments 1–15 are executed during ProceEvTri4 rising edge.

H22.02 Process segment triggered by the event falling edge

Hex:	2022-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–65535
Description
DI: ProceEvTri (ON to OFF, falling edge-triggered).
0–3bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri1 falling edge. When its value is 1–15, DI is triggered: Process segment 1–15 is executed during ProceEvTri1 falling edge.
4–7bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri2 falling edge. When its value is 1–15, DI is triggered: Process segments 1–15 are executed during ProceEvTri2 falling edge.
8–11bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri3 falling edge. When its value is 1–15, DI is triggered: Process segments 1–15 are executed during ProceEvTri3 falling edge.
12–15bit: When its value is 0, DI is triggered: The motor does not operate during ProceEvTri4 falling edge. When its value is 1–15, DI is triggered: Process segments 1–15 are executed during ProceEvTri4 falling edge.

H22.03 Acceleration/Deceleration time upon technology segment pause

Hex:	2022-04h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	7	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Acceleration/Deceleration time
1: Acceleration/Deceleration time 1
2: Acceleration/Deceleration time 2
3: Acceleration/Deceleration time 3
4: Acceleration/Deceleration time 4
5: Acceleration/Deceleration time 5
6: Acceleration/Deceleration time 6
7: Acceleration/Deceleration time 7

Description

When the process segment is paused, the motor ramps to stop based on the deceleration time defined by H22.03. Setpoints 0 to 7 correspond to parameters H22.35 to H22.42.

H22.04 Positive software position limit

Hex:	2022-05h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	2147483647	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

E956.0 can occur when the motor operates forwardly with position reference exceeding the setpoint of H22.04 during positioning in the process segment mode.

H22.06 Negative software position limit

Hex:	2022-07h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	-2147483648	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

E958.0 can occur when the motor operates reversely with position reference exceeding the setpoint of H22.06 during positioning in the process segment mode.

H22.08 Process segment number

Hex:	2022-09h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Indicates the process segment number in progress in the process segment mode.

H22.09 Process segment function switch

Hex:	2022-0Ah	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

bit0:

0: Keep interrupt positioning state

1: Exit interrupt positioning state when triggering technology segment

H22.19 Target speed

Hex:	2022-14h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	50.0	Change:	Real-time

Value Range:

0.1rpm to 6000.0rpm

Description

Eight groups of target speed are available for each process segment command. Target speed refers to the constant operating speed when the motor is not in the acceleration/deceleration process. If the displacement is too small in the positioning mode, the actual motor speed will be lower than the setpoint of H22.19.

H22.20 Target speed 1

Hex:	2022-15h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	200.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.21 Target speed 2

Hex:	2022-16h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	500.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.22 Target speed 3

Hex:	2022-17h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	1000.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.23 Target speed 4

Hex:	2022-18h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	1500.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm

Description
See H22.19.

H22.24 Target speed 5

Hex:	2022-19h	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	2000.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.25 Target speed 6

Hex:	2022-1Ah	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	2500.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.26 Target speed 7

Hex:	2022-1Bh	Effective mode:	Real time
Min.:	0.1	Unit:	RPM
Max.:	6000.0	Data Type:	UInt16
Default:	3000.0	Change:	Real-time

Value Range:
0.1rpm to 6000.0rpm
Description
See H22.19.

H22.35 Accel/Decel time

Hex:	2022-24h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16

Default:	50	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Eight groups of acceleration/deceleration time are available for each process segment command.

Acceleration time is the time for the motor to accelerate from 0 RPM to 1000 RPM at a constant speed.

H22.36 Acceleration/Deceleration time 1

Hex:	2022-25h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

See H22.35.

H22.37 Acceleration/Deceleration time 2

Hex:	2022-26h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

See H22.35.

H22.38 Acceleration/Deceleration time 3

Hex:	2022-27h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

See H22.35.

H22.39 Acceleration/Deceleration time 4

Hex:	2022-28h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.35.

H22.40 Acceleration/Deceleration time 5

Hex:	2022-29h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	2000	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.35.

H22.41 Acceleration/Deceleration time 6

Hex:	2022-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	2500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.35.

H22.42 Acceleration/Deceleration time 7

Hex:	2022-2Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:
0 ms–65535 ms

Description
See H22.35.

H22.51 Delay after completion of the process segment

Hex:	2022-34h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Eight groups of delay time are available for each process segment command. The delay time refers to the delay that starts from the end of current command to the operation of the next command in the process segment. See section 2.2 Process Segment Function.

H22.52 Delay time 1 after completion of the process segment

Hex:	2022-35h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.53 Delay time 2 after completion of the process segment

Hex:	2022-36h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.54 **Delay time 3 after completion of the process segment**

Hex:	2022-37h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.55 **Delay time 4 after completion of the process segment**

Hex:	2022-38h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.56 **Delay time 5 after completion of the process segment**

Hex:	2022-39h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	1500	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.57 **Delay time 6 after completion of the process segment**

Hex:	2022-3Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	2000	Change:	Real-time

Value Range:
0 ms–65535 ms

Description
See H22.51.

H22.58 Delay time 7 after completion of the process segment

Hex:	2022-3Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	3000	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
See H22.51.

H22.70 Homing mode

Hex:	2022-47h	Effective mode:	Real time
Min.:	-32768	Unit:	-
Max.:	32767	Data Type:	Int16
Default:	-2	Change:	Real-time

Value Range:
-32768–32767
Description
Defines the default motor direction of rotation, deceleration point, and home during homing.
When H22.70 is set to a value from -2 to 35, 402 homing is used (6098h = -2...35). See section "Homing Modes" in SV670 Series Servo Drive Communication Guide for details.
When H22.70 is set to a value lower than or equal to -200, local homing is used (H22.70 = -200 + H05.31). See section "Homing Function" in SV670 Series Servo Drive Function Guide for details.

H22.71 Speed of high-speed search for home switch signal

Hex:	2022-48h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	3000	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:
0rpm to 3000rpm

Description

Defines the motor speed for searching for the deceleration point signal during homing.

H22.72 Speed of low-speed search for home switch signal

Hex:	2022-49h	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 rpm to 1000 rpm

Description

Defines the motor speed for searching for the home signal during homing.

H22.73 Acceleration/Deceleration time during homing

Hex:	2022-4Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	1000	Change:	Real-time

Value Range:

0 ms–1000 ms

Description

Defines the time for the motor to accelerate from 0 rpm to 1000 rpm at a constant speed during homing.

H22.74 Home search time limit

Hex:	2022-4Bh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the maximum homing time.

H22.75 Mechanical home offset

Hex:	2022-4Ch	Effective mode:	Real time

Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the absolute position of the motor after homing.

H22.79 Relative/Absolute homing

Hex:	2022-50h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

Defines the offset relationship between the mechanical home and mechanical zero point, and the action upon overtravel during homing.

When H22.79 is set to 0, the value of H05.40 is 2.

When H22.79 is set to 1, the value of H05.40 is 3.

4.24 H23 Technology Segment

H23.00 Definition of homing

Hex:	2023-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See section "Process Segment Operation Mode" in SV670-INT Series Servo Drive Function Guide for details.

H23.02 Homing data

Hex:	2023-03h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-

Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

Not used.

H23.04 Definition of process segment 1

Hex:	2023-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

bit0 to bit3: Mode (process segment operation mode option)
Mode = 1: The fixed speed mode applies.Mode = 2: The positioning mode applies, which stops after positioning is done. Mode = 3: The next segment is executed automatically after positioning is done. Mode = 7: The jump mode applies, which is used to jump to the designated process segment. Mode = 8: The parameter-write mode applies, which allows you to write specific parameters.
For details on each mode, see the SV670-INT Series Servo Drive Function Guide.

H23.06 Data of process segment 1

Hex:	2023-07h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

Different modes selected in process segment 1 correspond to different process segment data. For details, see the SV670-INT Series Servo Drive Function Guide.

H23.08 Definition of process segment 2

Hex:	2023-09h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.10 **Data of process segment 2**

Hex:	2023-0Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.12 **Definition of process segment 3**

Hex:	2023-0Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.14 **Data of process segment 3**

Hex:	2023-0Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.16 **Definition of process segment 4**

Hex:	2023-11h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.18 **Data of process segment 4**

Hex:	2023-13h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.20 **Definition of process segment 5**

Hex:	2023-15h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.22 **Data of process segment 5**

Hex:	2023-17h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647

Description
See that of technology segment 1.

H23.24 **Definition of process segment 6**

Hex:	2023-19h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.26 **Data of process segment 6**

Hex:	2023-1Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.28 **Definition of process segment 7**

Hex:	2023-1Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.30 **Data of process segment 7**

Hex:	2023-1Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.32 Definition of process segment 8

Hex:	2023-21h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.34 Data of process segment 8

Hex:	2023-23h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.36 Definition of process segment 9

Hex:	2023-25h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.38 **Data of process segment 9**

Hex:	2023-27h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.40 **Definition of process segment 10**

Hex:	2023-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.42 **Data of process segment 10**

Hex:	2023-2Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.44 **Definition of process segment 11**

Hex:	2023-2Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295

Description
See definition of technology segment 1.

H23.46 **Data of process segment 11**

Hex:	2023-2Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.48 **Definition of process segment 12**

Hex:	2023-31h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.50 **Data of process segment 12**

Hex:	2023-33h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

H23.52 **Definition of process segment 13**

Hex:	2023-35h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32

Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.54 Data of process segment 13

Hex:	2023-37h	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.56 Definition of process segment 14

Hex:	2023-39h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:

0–4294967295

Description

See definition of technology segment 1.

H23.58 Data of process segment 14

Hex:	2023-3Bh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648–2147483647

Description

See that of technology segment 1.

H23.60 **Definition of process segment 15**

Hex:	2023-3Dh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
See definition of technology segment 1.

H23.62 **Data of process segment 15**

Hex:	2023-3Fh	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648–2147483647
Description
See that of technology segment 1.

4.25 H30 Related Variables Read through Communication

H30.00 **Servo state read by communication**

Hex:	2030-01h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535
Description
-

H30.01 **DO function state 1 read through communication**

Hex:	2030-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: Unchangeable

Value Range:

0–65535

Description

Bit 0 corresponds to DO function 1.

Bit 1 corresponds to DO function 2.

Bit 2 corresponds to DO function 3.

…

By analogy

H30.02 DO function state 2 read through communication

Hex: 2030-03h Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0–65535

Description

Bit 0 corresponds to DO function 17.

Bit 1 corresponds to DO function 18.

Bit 2 corresponds to DO function 19.

…

By analogy

H30.16 Encoder communication timeout timing

Hex: 2030-11h Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0–65535

Description

-

H30.17 Encoder communication CRC error count

Hex: 2030-12h Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H30.18 Encoder communication frame stop bit error count

Hex:	2030-13h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

4.26 H31 Communication Setting

H31.00 VDI virtual level set through communication

Hex:	2031-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

When H17.90 is set to 1, the VDI state is defined by this parameter.

The VDI logic is determined by H17.91 (Default VDI virtual level value upon power-on) upon initial power-on. Then, H31.00 is determined by the VDI logic. "bit(n) = 1" of H31.00 indicates the logic of VDI (n+1) is "1". "bit(n)=0" indicates the logic of VDI (n+1) is "0".

H31.01 Frequency-division output frequency set through communication

Hex:	2031-02h	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	16000000	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0 Hz–16000000 Hz
Description
When H05.38 is set to 4, H31.01 sets the frequency of the frequency division output port.

H31.04 DO state set through communication

Hex:	2031-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–65535
Description
Sets DO output status.

H31.05 AO set through communication

Hex:	2031-06h	Effective mode:	Real time
Min.:	-10000	Unit:	mV
Max.:	10000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:
-10000 mV–10000 mV
Description
Set H04.50 to 10 to define AO through H31.05 (in mV).

H31.09 Speed reference set via communication

Hex:	2031-0Ah	Effective mode:	Real time
Min.:	-10000.000	Unit:	RPM
Max.:	10000.000	Data Type:	Int32
Default:	0.000	Change:	Real-time

Value Range:
–10000.000 RPM to +10000.000 RPM
Description
Set H06.02 to 4 to define the speed reference in the speed control mode through H31.09 (unit: 0.001 rpm).

H31.11 **Torque reference set via communication**

Hex:	2031-0Ch	Effective mode:	Real time
Min.:	-100.000	Unit:	%
Max.:	100.000	Data Type:	Int32
Default:	0.000	Change:	Real-time

Value Range:

-100.000% to 100.000%

Description

Set H07.02 to 4 to define the torque reference in the torque control mode through this parameter (unit: 0.001%). The setpoint 100.000% corresponds to the rated torque of the motor.

4.27 H32 Direct Drive Parameters

H32.00 **Encoder interpolator mismatch alarm (E124)**

Hex:	2032-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

The T2 interpolator matches the HipeFace encoder. The power-on check switch is turned on by default.

H32.02 **Angle auto-tuning upon power-on**

Hex:	2032-03h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

Angle auto-tuning starts after the drive switches to the rdy state and the time defined by H32.41 elapses.

H32.03 Angle auto-tuning switch controlled by control word

Hex:	2032-04h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Control word 6

2: Control word 7

Description

Used to enable the angle auto-tuning switchover switch through the control word.

H32.04 Angle auto-tuning state

Hex:	2032-05h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

bit0: bit7 of 6041

bit1: E602.9

Description

When the incremental encoder is not angle auto-tuned, it will raise an alarm or provide a status bit based on the setting. When bit0 and bit1 are both set, only bit0 is effective.

H32.05 Pre-positioning retract selection

Hex:	2032-06h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

Used to retract by a certain distance after auto-tuning through pre-positioning is done.

H32.06 **Position feedback**

Hex:	2032-07h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

Used to align the position feedback to the position before angle auto-tuning for incremental encoders.

H32.07 **Incremental homing method**

Hex:	2032-08h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Z Signal short circuit

1: Only first short circuit

Description

Selects the Z signal for Z signal homing of an incremental communication encoder. Z signal width is set according to H32.08.

H32.08 **Homing signal width**

Hex:	2032-09h	Effective mode:	Real time
Min.:	100	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	800	Change:	At stop

Value Range:

100–65535

Description

The setpoint is active after the position is latched by Z signal.

H32.10 **Max. reference current in angle auto-tuning through inching**

Hex:	2032-0Bh	Effective mode:	At stop
Min.:	10.0	Unit:	%
Max.:	300.0	Data Type:	UInt16

Default:	100.0	Change:	At stop

Value Range:

10.0% to 300.0%

Description

Defines the maximum reference current during auto-tuning.

H32.13 Motor operation threshold (ROT/DDR) in angle auto-tuning through inching

Hex:	2032-0Eh	Effective mode:	At stop
Min.:	0.001	Unit:	deg
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001deg to 20.000deg

Description

Sets motor operation threshold for position lock angle auto-tuning.
Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.14 Motor standstill threshold (ROT/DDR) in angle auto-tuning through inching

Hex:	2032-0Fh	Effective mode:	At stop
Min.:	0.1	Unit:	[mm/s]/[rpm]
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.15 Motor operation threshold (DDL) in angle auto-tuning through inching

Hex:	2032-10h	Effective mode:	At stop
Min.:	0.001	Unit:	mm
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001 millimeters–20.000 millimeters

Description

Sets motor operation threshold for position lock angle auto-tuning. Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.16 Motor standstill threshold (DDL) in angle auto-tuning through inching

Hex:	2032-11h	Effective mode:	At stop
Min.:	0.1	Unit:	mm/s
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1 mm/s–100.0 mm/s

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.18 Motor standstill threshold for inching angle auto-tuning

Hex:	2032-13h	Effective mode:	At stop
Min.:	0.1	Unit:	s
Max.:	10.0	Data Type:	UInt16
Default:	0.5	Change:	At stop

Value Range:

0.1s to 10.0s

Description

Sets motor standstill threshold for auto-tuning. Usually no change is required.

H32.20 Max. reference current in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-15h	Effective mode:	At stop
Min.:	10.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	100.0	Change:	At stop

Value Range:

10.0% to 300.0%

Description

Defines the maximum reference current during auto-tuning.

H32.22 Electrical angle reference in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-17h	Effective mode:	At stop
Min.:	0.0	Unit:	deg
Max.:	360.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0deg to 360.0deg

Description

Defines the electrical angle during auto-tuning through pre-positioning.

H32.23 Electrical angle reference change range in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-18h	Effective mode:	At stop
Min.:	10.0	Unit:	deg
Max.:	170.0	Data Type:	UInt16
Default:	90.0	Change:	At stop

Value Range:

10.0deg to 170.0deg

Description

Defines the electrical angle change range during auto-tuning.

H32.24 Motor stop threshold (ROT/DDR) in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-19h	Effective mode:	At stop
Min.:	0.1	Unit:	[mm/s]/[rpm]
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.25 Motor stop threshold (DDL) in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-1Ah	Effective mode:	At stop
Min.:	0.1	Unit:	mm/s

Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1 mm/s–100.0 mm/s

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.26 Damping in angle auto-tuning through pre-positioning (closed-loop)

Hex:	2032-1Bh	Effective mode:	At stop
Min.:	0.00	Unit:	[N/(m/s)]/[N·m/rpm]
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	At stop

Value Range:

0.00[N/(m/s)]/[N·m/rpm]–655.35[N/(m/s)]/[N·m/rpm]

Description

Sets the damping coefficient for motor auto-tuning. The appropriate coefficient ensures a smooth and impact-free operation.

(1) This coefficient is usually related to the load characteristics. Larger load requires a larger coefficient.

(2) When the coefficient is too small, the auto-tuning process may be prone to strong impact, which is normal. When it is too large, motor operation may be sluggish or even stops, which is also normal and a timeout alarm will be raised.

H32.29 Motor standstill threshold for close-loop pre-positioning angle auto-tuning

Hex:	2032-1Eh	Effective mode:	At stop
Min.:	0.1	Unit:	s
Max.:	10.0	Data Type:	UInt16
Default:	0.5	Change:	At stop

Value Range:

0.1s to 10.0s

Description

Sets motor standstill threshold for auto-tuning. Usually no change is required.

H32.30 Max. reference current in angle auto-tuning through position lock

Hex:	2032-1Fh	Effective mode:	At stop
Min.:	10.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	100.0	Change:	At stop

Value Range:
10.0% to 300.0%
Description
Defines the maximum reference current during auto-tuning.

H32.33 Motor operation threshold (ROT/DDR) in angle auto-tuning through position lock

Hex:	2032-22h	Effective mode:	At stop
Min.:	0.001	Unit:	deg
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:
0.001deg to 20.000deg
Description
Sets motor operation threshold for position lock angle auto-tuning.
Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.34 Motor standstill threshold (ROT/DDR) in angle auto-tuning through position lock

Hex:	2032-23h	Effective mode:	At stop
Min.:	0.1	Unit:	[mm/s]/[rpm]
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:
0.1[mm/s]/[rpm]–100.0[mm/s]/[rpm]
Description
Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.35 Motor operation threshold (DDL) in angle auto-tuning through position lock

Hex:	2032-24h	Effective mode:	At stop
Min.:	0.001	Unit:	mm
Max.:	20.000	Data Type:	UInt16
Default:	0.200	Change:	At stop

Value Range:

0.001 millimeters–20.000 millimeters

Description

Sets motor operation threshold for position lock angle auto-tuning. Usually no change is required. If you have special requirements for the operation range, you can adjust this parameter accordingly. The smaller the value, the smaller the operation range during auto-tuning, but the greater the auto-tuning error.

H32.36 Motor standstill threshold (DDL) in angle auto-tuning through position lock

Hex:	2032-25h	Effective mode:	At stop
Min.:	0.1	Unit:	mm/s
Max.:	100.0	Data Type:	UInt16
Default:	1.0	Change:	At stop

Value Range:

0.1 mm/s–100.0 mm/s

Description

Sets motor stop threshold for auto-tuning. Usually no change is required.

H32.37 Angle gain in angle auto-tuning through position lock

Hex:	2032-26h	Effective mode:	At stop
Min.:	0	Unit:	deg/(p/s)
Max.:	10000	Data Type:	UInt16
Default:	1000	Change:	At stop

Value Range:

0deg/(p/s)–10000deg/(p/s)

Description

Defines the angle gain during auto-tuning. A proper setpoint improves the auto-tuning angle accuracy. The default value applies to most of applications.

H32.38 Inertia ratio in angle auto-tuning through position lock

Hex:	2032-27h	Effective mode:	At stop
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	0.00	Change:	At stop

Value Range:

0.00–120.00

Description

Sets the inertia ratio gain for auto-tuning. A proper value can ensure smooth and jitter-free operation and reduce the operation range.
(1) This coefficient is usually related to the load characteristics. You can just set it to the actual inertia ratio.
(2) A small value may lead to long movement during auto-tuning, which is a normal phenomenon. A large value may lead to gain mismatch oscillation.

H32.39 Gain class in angle auto-tuning through position lock

Hex:	2032-28h	Effective mode:	At stop
Min.:	4	Unit:	level
Max.:	31	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:
4level to 31level
Description
Defines the loop stiffness level gain for auto-tuning. A proper value can ensure smooth and jitter-free operation and reduce the operation range.
(1) A small value may lead to long movement during auto-tuning, which is a normal phenomenon. A large value may lead to gain mismatch oscillation.

H32.40 Left/Right limit function

Hex:	2032-29h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
1. Left limit being positive
2. Left limit being negative
Description
Enables the left and right limit function for the motor. If the left limit is positive, the right limit is negative, and if the left limit is negative, the right limit is positive.

H32.41 Angle auto-tuning delay upon power-on

Hex:	2032-2Ah	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	3	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Used to set automatic angle auto-tuning delay upon power-on.

H32.53 Motor standstill threshold for position lock angle auto-tuning

Hex:	2032-36h	Effective mode:	At stop
Min.:	0.1	Unit:	s
Max.:	10.0	Data Type:	UInt16
Default:	0.5	Change:	At stop

Value Range:
0.1s to 10.0s
Description
Sets motor standstill threshold for auto-tuning. Usually no change is required.

H32.54 Hall auto-tuning selection

Hex:	2032-37h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
When this parameter is enabled, the Hall auto-tuning will be started automatically after basic angle auto-tuning is done.

H32.55 Hall signal UVW manual adjustment

Hex:	2032-38h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–7
Description
-

H32.56 UVW filter time of Hall signal

Hex:	2032-39h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	10	Data Type:	UInt16
Default:	5	Change:	Real-time

Value Range:
0 ms–10 ms
Description
-

H32.57 Hall closed-loop locked-rotor speed

Hex:	2032-3Ah	Effective mode:	Real time
Min.:	0	Unit:	[mm/s]/[rpm]
Max.:	65535	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:
0[mm/s]/[rpm]–65535[mm/s]/[rpm]
Description
-

H32.58 Hall closed-loop locked-rotor current

Hex:	2032-3Bh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	120.0	Change:	At stop

Value Range:
0.0% to 300.0%
Description
-

H32.59 Hall closed-loop locked-rotor window time

Hex:	2032-3Ch	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	2000	Data Type:	UInt16
Default:	10	Change:	At stop

Value Range:
0 ms–2000 ms

Description

-

H32.60 Hall closed-loop inertia ratio

Hex:	2032-3Dh	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	0.00	Change:	At stop

Value Range:

0.00–120.00

Description

-

H32.61 Hall closed-loop rigidity

Hex:	2032-3Eh	Effective mode:	Real time
Min.:	4	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:

4–31

Description

-

H32.62 Electrical angle save flag

Hex:	2032-3Fh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

Automatic reset will be performed after the electrical angle is saved when dynamic Hall auto-tuning is done.

H32.63 Hall1 electric angle

Hex:	2032-40h	Effective mode:	Real time
Min.:	0	Unit:	-

Max.: 65535 Data Type: UInt16
Default: 0 Change: At stop
Value Range:
0–65535
Description
-

H32.64 Hall2 electric angle

Hex: 2032-41h Effective mode: Real time
Min.: 0 Unit: -
Max.: 65535 Data Type: UInt16
Default: 0 Change: At stop
Value Range:
0–65535
Description
-

H32.65 Hall3 electric angle

Hex: 2032-42h Effective mode: Real time
Min.: 0 Unit: -
Max.: 65535 Data Type: UInt16
Default: 0 Change: At stop
Value Range:
0–65535
Description
-

H32.66 Hall4 electric angle

Hex: 2032-43h Effective mode: Real time
Min.: 0 Unit: -
Max.: 65535 Data Type: UInt16
Default: 0 Change: At stop
Value Range:
0–65535
Description
-

H32.67 **Hall5 electric angle**

Hex:	2032-44h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H32.68 **Hall6 electric angle**

Hex:	2032-45h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H32.70 **Motor overload protection mode**

Hex:	2032-47h	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Internal motor overload curve
1: External motor overload curve
2: Current limit overload protection
3: Hide motor overload protection
Description
-

H32.73 **Thermal threshold current of overload current limit**

Hex:	2032-4Ah	Effective mode:	Upon the next power-on
Min.:	100.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	115.0	Change:	At stop

Value Range:
100.0% to 750.0%
Description
Thermal limit current is a percentage of motor rated current defaulted to 100%, above which the motor starts to heat continuously. The motor current will be finally maintained at this value.

H32.74 Peak current of overload current limit

Hex:	2032-4Bh	Effective mode:	Upon the next power-on
Min.:	100.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	300.0	Change:	At stop

Value Range:
100.0% to 750.0%
Description
Defines the ratio of the peak current that can be reached by the motor to the rated current of the motor.

H32.75 Max. current duration of overload protection

Hex:	2032-4Ch	Effective mode:	Real time
Min.:	0.01	Unit:	s
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	At stop

Value Range:
0.01s to 655.35s
Description
Calculate the maximum heat that can be reached by the motor based on the maximum current continuous time, and take this value as the motor overload alarm threshold.

H32.76 Current limit time constant of overload protection

Hex:	2032-4Dh	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	At stop

Value Range:
0.01–655.35

Description

It is related to the maximum current continuous time. The higher the setpoint, the longer the maximum current continuous time will be.

H32.77 Current limit alarm threshold of overload protection

Hex:	2032-4Eh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0% to 750.0%

Description

If current limit protection is effective, and the limited current is lower than this value, the drive will raise an alarm.

H32.78 Current limit fault threshold of overload protection

Hex:	2032-4Fh	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	0.0	Change:	At stop

Value Range:

0.0% to 750.0%

Description

If current limit protection is effective, and the limited current is lower than this value, the drive will report an error.

H32.79 Thermal threshold current of overload

Hex:	2032-50h	Effective mode:	Upon the next power-on
Min.:	100.0	Unit:	%
Max.:	750.0	Data Type:	UInt16
Default:	115.0	Change:	At stop

Value Range:

100.0% to 750.0%

Description

-

H32.80 Thermal current interval of overload

Hex:	2032-51h	Effective mode:	Upon the next power-on

Min.:	0.1	Unit:	%
Max.:	204.8	Data Type:	UInt16
Default:	6.4	Change:	At stop

Value Range:
0.1% to 204.8%
Description
-

H32.81 Overload heat dissipation current interval

Hex:	2032-52h	Effective mode:	Upon the next power-on
Min.:	0.1	Unit:	%
Max.:	204.8	Data Type:	UInt16
Default:	6.4	Change:	At stop

Value Range:
0.1% to 204.8%
Description
-

H32.82 Length of overload heat dissipation curve

Hex:	2032-53h	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
1–200
Description
-

H32.83 Length of overload heat dissipation curve

Hex:	2032-54h	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
1–200
Description
-

4.28 H33 Compensation Parameters

4.28.1 H33 Compensation Parameters

H33.00 **Compensation data BUFFER**

Address:	0x3300	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.01 **Compensation data BUFFER**

Address:	0x3301	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.02 **Compensation data BUFFER**

Address:	0x3302	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.03 **Compensation data BUFFER**

Address:	0x3303	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.04 Compensation data BUFFER

Address:	0x3304	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.05 Compensation data BUFFER

Address:	0x3305	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.06 Compensation data BUFFER

Address:	0x3306	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.07 **Compensation data BUFFER**

Address:	0x3307	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.08 **Compensation data BUFFER**

Address:	0x3308	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.09 **Compensation data BUFFER**

Address:	0x3309	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.10 **Compensation data BUFFER**

Address:	0x330A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535

Description

-

H33.11 Compensation data BUFFER

Address:	0x330B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.12 Compensation data BUFFER

Address:	0x330C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.13 Compensation data BUFFER

Address:	0x330D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.14 Compensation data BUFFER

Address:	0x330E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.15 Compensation data BUFFER

Address: 0x330F Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.16 Compensation data BUFFER

Address: 0x3310 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.17 Compensation data BUFFER

Address: 0x3311 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.18 Compensation data BUFFER

Address: 0x3312 Effective mode: Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.19 Compensation data BUFFER

Address:	0x3313	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.20 Compensation data BUFFER

Address:	0x3314	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.21 Compensation data BUFFER

Address:	0x3315	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.22 **Compensation data BUFFER**

Address:	0x3316	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.23 **Compensation data BUFFER**

Address:	0x3317	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.24 **Compensation data BUFFER**

Address:	0x3318	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.25 **Compensation data BUFFER**

Address:	0x3319	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535

Description

-

H33.26 Compensation data BUFFER

Address:	0x331A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.27 Compensation data BUFFER

Address:	0x331B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.28 Compensation data BUFFER

Address:	0x331C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

-

H33.29 Compensation data BUFFER

Address:	0x331D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.30 Compensation data BUFFER

Address: 0x331E Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.31 Compensation data BUFFER

Address: 0x331F Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.32 Compensation data BUFFER

Address: 0x3320 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: At stop

Value Range:

0–65535

Description

-

H33.33 Compensation data BUFFER

Address: 0x3321 Effective mode: Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.34 Compensation data BUFFER

Address:	0x3322	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.35 Compensation data BUFFER

Address:	0x3323	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.36 Compensation data BUFFER

Address:	0x3324	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.37 **Compensation data BUFFER**

Address:	0x3325	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.38 **Compensation data BUFFER**

Address:	0x3326	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.39 **Compensation data BUFFER**

Address:	0x3327	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535
Description
-

H33.40 **Current Compensation BUFFER group number**

Address:	0x3328	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–65535

Description

-

H33.41 Compensation data sum

Address:	0x3329	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	32767	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–32767

Description

-

H33.44 Data command

Address:	0x332C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0–1

Description

-

H33.45 Data storage position

Address:	0x332D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Servo RAM

1: Servo FLASH

2: Encoder FLASH

Description

-

H33.46 Data clear

Address:	0x332E	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–3

Description

-

H33.47 Software tool write status

Address:	0x332F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–2

Description

-

H33.48 Servo read status

Address:	0x3330	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

-

H33.49 Software tool read status

Address:	0x3331	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–2

Description

-

H33.50 Servo write status

Address:	0x3332	Effective mode:	-
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–2
Description
-

H33.51 Data transmission completed flag

Address:	0x3333	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–1
Description
-

H33.52 Servo data transfer completed flag

Address:	0x3334	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–1
Description
-

H33.60 Accuracy compensation function

Address:	0x333C	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0–1

Description
Used to enable accuracy compensation.

H33.61 Accuracy compensation sum

Address:	0x333D	Effective mode:	Upon the next power-on
Min.:	0	Unit:	count
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0count to 65535count
Description
Total accuracy compensation points.

H33.62 Starting offset address of accuracy compensation

Address:	0x333E	Effective mode:	Upon the next power-on
Min.:	-21474836.48	Unit:	[mm]/[deg]
Max.:	21474836.47	Data Type:	Int32
Default:	0.00	Change:	At stop

Value Range:
-21474836.48[mm]/[deg]–21474836.47[mm]/[deg]
Description
The direct-drive motor compensation home of incremental encoder is the home of the mechanical system coordinate.

H33.64 Accuracy compensation data interval

Address:	0x3340	Effective mode:	Upon the next power-on
Min.:	-327.67	Unit:	[mm]/[deg]
Max.:	327.67	Data Type:	Int16
Default:	0.00	Change:	At stop

Value Range:
-327.67[mm]/[deg]–327.67[mm]/[deg]
Description
Interval of adjacent compensation points of accuracy compensation.

H33.65 Accuracy compensation dial phase sequence

Address:	0x3341	Effective mode:	Upon the next power-on

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–65535

Description

Phase sequence record of accuracy compensation dial stage.

H33.66 Accuracy compensation dial reference direction

Address:	0x3342	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–1

Description

Reference direction record of accuracy compensation dial stage.

H33.67 Servo homing completed

Address:	0x3343	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Accuracy compensation homing completion signal.

H33.68 Current acting index of accuracy compensation

Address:	0x3344	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Current compensation position of accuracy compensation.

H33.69 Forced homing start

Address:	0x3345	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0–1

Description

Enables accuracy compensation forced homing.

H33.70 Forced homing mode

Address:	0x3346	Effective mode:	Upon the next power-on
Min.:	-32768	Unit:	-
Max.:	32767	Data Type:	Int16
Default:	-2	Change:	At stop

Value Range:

-32768–32767

Description

Homing mode record of accuracy compensation dial stage.

H33.71 Forced homing at low speed

Address:	0x3347	Effective mode:	Upon the next power-on
Min.:	0	Unit:	[mm/s]/[rpm]
Max.:	1000	Data Type:	UInt16
Default:	10	Change:	At stop

Value Range:

0[mm/s]/[rpm]–1000[mm/s]/[rpm]

Description

Homing speed record of accuracy compensation dial stage.

H33.72 Single-turn absolute position of accuracy compensation home of absolute encoder

Address:	0x3348	Effective mode:	Upon the next power-on
Min.:	0	Unit:	p
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0p to 4294967295p

Description

Single-turn absolute value of direct-drive motor compensation home of absolute encoder.

H33.74 Min.pulse width of frequency-division output accuracy compensation

Address:	0x334A	Effective mode:	Upon the next power-on
Min.:	2	Unit:	count
Max.:	7	Data Type:	UInt16
Default:	3	Change:	At stop

Value Range:

2count to 7count

Description

Defines the minimum pulse width of accuracy compensation frequency-division output.

H33.75 Accuracy compensation data unit

Address:	0x334B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: [um]/[arcsec]

1: [mm]/[mrad]

Description

Defines the accuracy compensation data unit.

For DDL: 0-um; 1-mm;

For DDR: 0-arcsec; 2-mrad

H33.81 Motor cogging torque ripple compensation sum

Address:	0x3351	Effective mode:	Real time
Min.:	0	Unit:	count
Max.:	65535	Data Type:	UInt16
Default:	2000	Change:	At stop

Value Range:

0count to 65535count

Description

Motor cogging torque ripple compensation sum

4.29 1000h Object Dictionary

1000.00h Device type

Hex:	1000-00h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
-

1001.00h Error Register

Hex:	1001-00h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFF	Data Type:	UInt8
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFF
Description
-

1018.01h Vendor ID

Hex:	1018-01h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
-

1018.02h Product Code

Hex:	1018-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

-

1018.03h Revision

Hex:	1018-03h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

-

1018.04h Serial number

Hex:	1018-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

-

1600.00h Number of valid mapped objects in RPDO1

Hex:	1600-00h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt8
Default:	0	Change:	Unchangeable

Value Range:

0–20

Description

This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1600.01h Mapped object 1 in RPDO1

Hex:	1600-01h	Effective mode:	-

Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.

Sub-indexes are written in the following format:

bit31 to bit16: index

bit15–bit8:

Object Length

bit7–bit0:

Sub-index

1600.02h Mapped object 2 in RPDO1

Hex:	1600-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1600.01h.

1600.03h Mapped object 3 in RPDO1

Hex:	1600-03h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1600.01h.

1600.04h Mapped object 4 in RPDO1

Hex:	1600-04h	Effective mode:	-

Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.05h Mapped object 5 in RPDO1

Hex:	1600-05h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.06h Mapped object 6 in RPDO1

Hex:	1600-06h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.07h Mapped object 7 in RPDO1

Hex:	1600-07h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.08h Mapped object 8 in RPDO1

Hex:	1600-08h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.09h Mapped object 9 in RPDO1

Hex:	1600-09h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.0Ah Mapped object 10 in RPDO1

Hex:	1600-0Ah	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.0Bh Mapped object 11 in RPDO1

Hex:	1600-0Bh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF

Description
Same as 1600.01h.

1600.0Ch Mapped object 12 in RPDO1

Hex:	1600-0Ch	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.0Dh Mapped object 13 in RPDO1

Hex:	1600-0Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.0Eh Mapped object 14 in RPDO1

Hex:	1600-0Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.0Fh Mapped object 15 in RPDO1

Hex:	1600-0Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1600.01h.

1600.10h Mapped object 16 in RPDO1

Hex: 1600-10h Effective mode: -

Min.: 0 Unit: -

Max.: 0xFFFFFFFF Data Type: UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1600.01h.

1600.11h Mapped object 17 in RPDO1

Hex: 1600-11h Effective mode: -

Min.: 0 Unit: -

Max.: 0xFFFFFFFF Data Type: UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1600.01h.

1600.12h Mapped object 18 in RPDO1

Hex: 1600-12h Effective mode: -

Min.: 0 Unit: -

Max.: 0xFFFFFFFF Data Type: UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1600.01h.

1600.13h Mapped object 19 in RPDO1

Hex: 1600-13h Effective mode: -

Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1600.14h Mapped object 20 in RPDO1

Hex:	1600-14h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1600.01h.

1A00.00h Number of valid mapped objects in TPDO1

Hex:	1A00-00h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt8
Default:	0	Change:	Unchangeable

Value Range:
0–20
Description
This object can be modified only when PDO is inactive. When 0 is written, the mapping objects of other sub-indexes are cleared.

1A00.01h Mapped object 1 in TPDO1

Hex:	1A00-01h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description

The total length of a mapping object cannot exceed 64 bits. Mapping based on bytes instead of bits is supported. The indexes and sub-indexes of mapping objects must exist in the object dictionary list. The attribute of mapping objects is readable and the objects can be mapped.
Sub-indexes are written in the following format:
bit31 to bit16: index
bit15–bit8:
Object Length
bit7–bit0:
Sub-index

1A00.02h Mapped object 2 in TPDO1

Hex:	1A00-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.03h Mapped object 3 in TPDO1

Hex:	1A00-03h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.04h Mapped object 4 in TPDO1

Hex:	1A00-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF

Description
Same as 1A00.01h.

1A00.05h Mapped object 5 in TPDO1

Hex:	1A00-05h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.06h Mapped object 6 in TPDO1

Hex:	1A00-06h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.07h Mapped object 7 in TPDO1

Hex:	1A00-07h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.08h Mapped object 8 in TPDO1

Hex:	1A00-08h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1A00.01h.

1A00.09h Mapped object 9 in TPDO1

Hex: 1A00-09h Effective mode: -

Min.: 0 Unit: -

Max.: 0xFFFFFFFF Data Type: UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1A00.01h.

1A00.0Ah Mapped object 10 in TPDO1

Hex: 1A00-0Ah Effective mode: -

Min.: 0 Unit: -

Max.: 0xFFFFFFFF Data Type: UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1A00.01h.

1A00.0Bh Mapped object 11 in TPDO1

Hex: 1A00-0Bh Effective mode: -

Min.: 0 Unit: -

Max.: 0xFFFFFFFF Data Type: UInt32

Default: 0 Change: Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

Same as 1A00.01h.

1A00.0Ch Mapped object 12 in TPDO1

Hex: 1A00-0Ch Effective mode: -

Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.0Dh Mapped object 13 in TPDO1

Hex:	1A00-0Dh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.0Eh Mapped object 14 in TPDO1

Hex:	1A00-0Eh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.0Fh Mapped object 15 in TPDO1

Hex:	1A00-0Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.10h Mapped object 16 in TPDO1

Hex:	1A00-10h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.11h Mapped object 17 in TPDO1

Hex:	1A00-11h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.12h Mapped object 18 in TPDO1

Hex:	1A00-12h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1A00.13h Mapped object 19 in TPDO1

Hex:	1A00-13h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF

Description
Same as 1A00.01h.

1A00.14h Mapped object 20 in TPDO1

Hex:	1A00-14h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Same as 1A00.01h.

1C12.00h Number of assigned PDOs

Hex:	1C12-00h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt8
Default:	2	Change:	Unchangeable

Value Range:
0–2
Description
Number of PDOs assigned.

1C12.01h PDO mapping object index of assigned RxPDO1

Hex:	1C12-01h	Effective mode:	-
Min.:	0x1600	Unit:	-
Max.:	0x17FF	Data Type:	UInt16
Default:	0x1701	Change:	Unchangeable

Value Range:
0x1600 to 0x17FF
Description
The PDO mapping object of assigned RxPDO1.

1C12.02h PDO mapping object index of assigned RxPDO2

Hex:	1C12-02h	Effective mode:	-
Min.:	0x1600	Unit:	-
Max.:	0x17FF	Data Type:	UInt16

Default:	0x170A	Change:	Unchangeable

Value Range:

0x1600 to 0x17FF

Description

The PDO mapping object of assigned RxPDO2.

1C13.00h Number of assigned PDOs

Hex:	1C13-00h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt8
Default:	2	Change:	Unchangeable

Value Range:

0–2

Description

Number of PDOs assigned.

1C13.01h PDO mapping object index of assigned TxPDO1

Hex:	1C13-01h	Effective mode:	-
Min.:	0x1A00	Unit:	-
Max.:	0x1BFF	Data Type:	UInt16
Default:	0x1B01	Change:	Unchangeable

Value Range:

0x1A00 to 0x1BFF

Description

The PDO mapping object of assigned TxPDO1.

1C13.02h PDO mapping object index of assigned TxPDO1

Hex:	1C13-02h	Effective mode:	-
Min.:	0x1A00	Unit:	-
Max.:	0x1BFF	Data Type:	UInt16
Default:	0x1B0A	Change:	Unchangeable

Value Range:

0x1A00 to 0x1BFF

Description

The PDO mapping object of assigned TxPDO2.

1C32.01h Sync mode

Hex:	1C32-01h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFF	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFF
Description
Synchronization mode.

1C32.02h Cycle time

Hex:	1C32-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Cycle time

1C32.04h Sync modes supported

Hex:	1C32-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFF	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFF
Description
The synchronization modes that are supported.

1C32.05h Minimum cycle time

Hex:	1C32-05h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF

Description
The minimum cycle time.

1C33.01h Sync mode

Hex:	1C33-01h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFF	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFF
Description
Synchronization mode.

1C33.02h Cycle time

Hex:	1C33-02h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFFFFFF
Description
Cycle time

1C33.04h Sync modes supported

Hex:	1C33-04h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFF	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0s to 0xFFFF
Description
The synchronization modes that are supported.

1C33.05h Minimum cycle time

Hex:	1C33-05h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	0xFFFFFFFF	Data Type:	UInt32

Default:	0	Change:	Unchangeable

Value Range:

0s to 0xFFFFFFFF

Description

The minimum cycle time.

4.30 6000h Object Dictionary

603Fh **Error code**

Hex:	603Fh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

When an error described in the DSP402 profile occurs on the servo drive, 603Fh is as described in DSP402.
When an error specified by the user occurs on the servo drive, 603Fh is 0xFF00.
The value of 603Fh is in hexadecimal.
In addition, the object dictionary 203Fh displays auxiliary bytes of fault codes in hexadecimal.
203Fh is a UInt32 value, in which the high 16 bits indicate the internal fault code of the manufacturer, and the low 16 bits indicate the external fault code of the manufacturer.

6040h **Control word**

Hex:	6040h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

For details, see section Basic Functions of the function guide.

6041h **Status word**

Hex:	6041h	Effective mode:	-

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

For description of status words, see section Basic Functions of the function guide.

605Ah Quick stop mode

Hex:	605Ah	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	7	Data Type:	Int16
Default:	2	Change:	Real-time

Value Range:

Value	Stop Mode
0	Coast to stop, keeping de-energized status
1	Ramp to stop as defined by 6084h/609Ah (HM), keeping the de-energized status
2	Ramp to stop as defined by 6085h, keeping the de-energized state
3	Stop at the emergency stop torque, keeping de-energized state
4	N/A
5	Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock status
6	Ramp to stop as defined by 6085h, keeping position lock status
7	Stop at emergency-stop torque, keeping position lock status

Description

Defines the deceleration mode of the motor for stopping rotating upon quick stop and the motor status after stop.

Note: When the brake function is enabled and the value of 605Ah is lower than 4, the stop mode is forcibly set to "2: Ramp to stop as defined by 6085h, keeping de-energized state".

605Ch Stop mode at S-OFF

Hex:	605Ch	Effective mode:	At stop
Min.:	-4	Unit:	-
Max.:	2	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

–4: Ramp to stop as defined by 6085h, keeping dynamic braking state

–3: at zero speed, keeping dynamic braking state

–2: Ramp to stop as defined by 6084h/609Ah (HM), keeping dynamic braking state

–1: Dynamic braking stop, keeping dynamic braking state

0: Coast to stop, keeping de-energized state

1: Ramp to stop as defined by 6084h/609Ah (HM), keeping de-energized state

2: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the motor for stopping rotating upon S-ON OFF and the motor status after stop.

Note: If the brake is enabled, 605Ch is forced to –4: Ramp to stop as defined by 6085h, keeping dynamic braking state.

605Dh Halt mode

Hex:	605Dh	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	3	Data Type:	Int16
Default:	1	Change:	Real-time

Value Range:

1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping position lock state

2: Ramp to stop as defined by 6085h, keeping position lock state

3: Stop at emergency stop torque, keeping position lock state

Description

Defines the deceleration mode of the motor for stopping rotating upon S-ON pause and the motor status after stop.

PP/PV/HM mode:

Value	Stop Mode
1	Ramp to stop as defined by 6084h/609Ah (HM), keeping position lock status
2	Ramp to stop as defined by 6085h, keeping position lock status
3	Stop at emergency-stop torque, keeping position lock status

PT mode:

Value	Stop Mode
1/2/3	Ramp to stop as defined by 6087h, keeping position lock status

605Eh Stop mode at No. 2 fault

Hex:	605Eh	Effective mode:	At stop
Min.:	-5	Unit:	-
Max.:	4	Data Type:	Int16
Default:	2	Change:	Real-time

Value Range:

–5: Stop at zero speed, keeping dynamic braking state
–4: Stop at emergency stop torque, keeping dynamic braking state
–3: Ramp to stop as defined by 6085h, keeping dynamic braking state
–2: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping dynamic braking state
–1: Dynamic braking stop, keeping dynamic braking state
0: Coast to stop, keeping de-energized state
1: Ramp to stop as defined by 6084h/ 609Ah (HM), keeping de-energized state
2: Ramp to stop as defined by 6085h, keeping de-energized state
3: Stop at emergency stop torque, keeping de-energized state
4: Dynamic braking stop, keeping de-energized state

Description

Defines the deceleration mode of the servo motor for stopping rotating and the servo motor status when a No. 2 fault occurs.
Note: If the brake is enabled, 605Eh is forced to –3: Ramp to stop as defined by 6085h, keeping dynamic braking state.

6060h Servo drive mode

Hex:	6060h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

1: Profile position (PP) mode
3: Profile velocity (PV) mode
4: Profile torque (PT) mode
6: Homing (HM) mode
8: CSP mode
9: CSV mode
10: CST mode

Description

It defines the operation mode of the servo drive.

1: Profile position (PP) mode
3: Profile velocity (PV) mode
4: Profile torque (PT) mode
6: Homing (HM) mode
8: CSP mode
9: CSV mode
10: CST mode
Other: N/A
If an unsupported operation mode is selected through an SDO, an SDO error will be returned.
If an unsupported operation mode is selected through a PDO, the change of the operation mode will be invalid.

6061h Operation mode display

Hex:	6061h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
1: Profile position (PP) mode
3: Profile velocity (PV) mode
4: Profile torque (PT) mode
6: Homing (HM) mode
8: CSP mode
9: CSV mode
10: CST mode

Description
Indicates the actual operation mode.
1: Profile position (PP) mode
3: Profile velocity (PV) mode
4: Profile torque (PT) mode
6: Homing (HM) mode
8: CSP mode
9: CSV mode
10: CST mode

6062h Position reference

Hex:	6062h	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32

Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the real-time position reference (reference unit).

6063h Position actual value

Hex:	6063h	Effective mode:	-
Min.:	-2147483648	Unit:	Pulse
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

–2147483648 to +2147483647

Description

Indicates the absolute position feedback (encoder unit) of the motor in real time.

6064h Position actual value

Hex:	6064h	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the absolute position feedback (reference unit) in real time.

Position actual value in user-defined unit (6064h) x Gear ratio (6091h) = Position actual value in encoder unit (6063h)

6065h Following error window

Hex:	6065h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit
Max.:	4294967295	Data Type:	UInt32
Default:	27486951	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the threshold of excessive position deviation (reference unit).
When the difference value between position demand value (6062h) and position actual value (6064h) keeps exceeding ±6065h after the time defined by 6066h elapses, B00.0 (Position deviation too large) occurs.

6066h Defines the time lapse to trigger excessive position deviation (EB00.0).

Hex:	6066h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms
Description
Defines the time lapse to trigger excessive position deviation (EB00.0), which must be used together with 6065h.

6067h Position window

Hex:	6067h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit
Max.:	4294967295	Data Type:	UInt32
Default:	5872	Change:	Real-time

Value Range:
0 to 4294967295
Description
Defines the threshold for position reach.
If the difference between 6062h and 6064h is within ±6067h and the time reaches 6068h, the position is reached. In this case, bit 10 of 6041h is set to 1 in the profile position mode.
This flag bit is valid only when the S-ON signal is valid in profile position control mode.

6068h Position window time

Hex:	6068h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0 ms–65535 ms

Description

Defines the window time for position reach, which must be used together with 6067h.

606Ch Actual speed

Hex:	606Ch	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit/s
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

–2147483648 to +2147483647

Description

It indicates the velocity actual value.

606Dh Velocity window

Hex:	606Dh	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 RPM to 65535 RPM

Description

Defines the threshold for speed reach.

If the difference value between the target speed 60FFh and the actual speed 606Ch is within ±606Dh and the time reaches 606Eh, the speed is reached and bit 10 of the status word 6041h is set to 1 in the profile velocity (PV) mode. This flag bit is meaningful only when the servo drive is enabled in PV mode.

606Eh Velocity window time

Hex:	606Eh	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the time window for speed reach, which must be used together with 606Dh.

606Fh Zero speed signal threshold

Hex:	606Fh	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 RPM to 65535 RPM

Description

Defines the threshold for determining whether the user velocity is 0.

When 606Ch is within ±606Fh and the time reaches the value set by 6070h, the user velocity is 0. When either condition is not met, the user velocity is not 0.

This flag bit is valid only in PV mode.

This flag bit is unrelated to the enable/disable state of the servo drive.

6070h Velocity threshold time

Hex:	6070h	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 ms–65535 ms

Description

Defines the time window for determining whether the user velocity is 0, which must be used together with 606Fh.

6071h Target torque

Hex:	6071h	Effective mode:	Real time
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:

-4000–4000

Description

Defines the target torque of the servo drive in the profile torque mode.

The value 1000 corresponds to the rated torque of the motor.

6072h Max. torque reference

Hex:	6072h	Effective mode:	Real time

Min.:	0	Unit:	0.001
Max.:	4000	Data Type:	UInt16
Default:	3500	Change:	Real-time

Value Range:

0–4000

Description

Defines the maximum torque reference limit.

The value 1000 corresponds to the rated torque of the motor.

6074h Torque reference

Hex:	6074h	Effective mode:	-
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-4000–4000

Description

Defines the target torque value.

The value 1000 corresponds to the rated torque of the motor.

6077h Actual torque

Hex:	6077h	Effective mode:	-
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-4000–4000

Description

It displays the internal actual torque of the servo drive.

The value 1000 corresponds to the rated torque of the motor.

607Ah Target position

Hex:	607Ah	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the target position of the servo drive in the profile position mode.

When bit 6 of 6040h is set to 0, 607Ah indicates the absolute target position of current segment.

After positioning of current segment is done, the value of 6064h will be the same as the value of 607Ah.

When bit 6 of 6040h is set to 1, 607Ah indicates the target increment displacement of current segment.

After positioning of current segment is done, user displacement increment will be the same as the value of 607Ah.

607Ch Home offset

Hex:	607Ch	Effective mode:	At stop
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the physical location of mechanical zero that deviates from the home of the motor in position control modes (profile position mode, interpolation mode, and homing mode).

The home offset takes effect in the following conditions: The device is powered on, the homing operation is complete, and bit15 of 6041h is set to 1.

After homing is done, the position actual value (6064h) will be the same as the value of 607Ch.

If 607Ch is outside the value of 607Dh (Software position limit), E09.1 (Home setting error) will occur.

607D.01h Min. position limit

Hex:	607D-01h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	-2147483648	Change:	Real-time

Value Range:

-2147483648 to 2147483647

Description

Defines the minimum software position limit relative to the mechanical zero point.

Minimum software position limit = (607D.01h)

The software position limit is used to judge the absolute position. When homing is not performed, the internal software position limit is invalid.
The condition for activating the software position limit is set in H0A.01 (object dictionary 0x200A.02h).

607D.02h Max. position limit

Hex:	607D-02h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	2147483647	Change:	Real-time

Value Range:
-2147483648 to 2147483647
Description
Defines the maximum software position limit relative to the mechanical zero.
Maximum software position limit = (607D.02h)

607Eh Reference polarity

Hex:	607Eh	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0–255
Description
Defines the polarity of position or speed references.
When bit 7 is 1, it indicates the position reference is multiplied by "–1" and the motor direction is reversed in the standard position mode or interpolation mode.
When bit 6 is 1, it indicates the speed reference (60FFh) is multiplied by "–1" and the motor direction is reversed in the speed mode.
When bit 5 is 1, it indicates the torque demand value (6071h) is multiplied by "–1" and the motor direction is reversed in the torque mode.
Other bits are meaningless.

607Fh Max. speed

Hex:	607Fh	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32

Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the maximum user running speed.

Set a proper gear ratio (8:1 recommended) when using a 26-bit encoder. Otherwise, the motor speed will be limited to 3840 RPM.

6081h Profile velocity

Hex:	6081h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	111848106	Change:	Real-time

Value Range:

0 to 4294967295

Description

It sets the average velocity normally attained at the end of the acceleration ramp during a profiled motion.

The setpoint takes effect after the slave receives the displacement reference.

6083h Profile acceleration

Hex:	6083h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s^2
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the acceleration rate in the acceleration stage of the displacement reference in the profile position mode.

The following formula applies if a motor equipped with 23-bit encoder needs to run at 400 RPM (6081h: 400 x 8388608/60) with acceleration rate being 400 RPM/s (6083h: 400 x 8388608/60) and deceleration rate being 200 RPM/s (6084h: 200 x 8388608/60) under a gear ratio of 1:1:

Acceleration time tup = Δ6081h/ Δ6083h = 1 (s); Deceleration time tdown = Δ6081h/ Δ6084h = 2 (s).

The setpoint 0 will be forcibly changed to 1.

6084h Profile deceleration

Hex:	6084h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the deceleration rate in the deceleration stage of the displacement reference in the profile position mode.

The following formula applies if a motor equipped with 23-bit encoder needs to run at 400 RPM (6081h: 400 x 8388608/60) with acceleration rate being 400 RPM/s (6083h: 400 x 8388608/60) and deceleration rate being 200 RPM/s (6084h: 200 x 8388608/60) under a gear ratio of 1:1:

Acceleration time tup = Δ6081h/ Δ6083h = 1 (s); Deceleration time tdown = Δ6081h/ Δ6084h = 2 (s).

The setpoint 0 will be forcibly changed to 1.

6085h Quick stop deceleration

Hex:	6085h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	2147483647	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the deceleration rate when the quick stop command (6040h = 0x0002) is active and 605Ah (Quick stop option code) is set to 2 or 5.

The setpoint 0 will be forcibly changed to 1.

6087h Torque slope

Hex:	6087h	Effective mode:	Real time
Min.:	0	Unit:	0.1%/s
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0–4294967295

Description

It sets the rate of change of torque in profile torque mode, in unit of torque increment per second.
In the profile torque mode, if 605Ah is set to 1, 2, 5, or 6, or 605Dh is set to 1 or 2, the servo drive decelerates to stop as defined by 6087h.
If the value exceeds the torque reference limit, the servo drive runs at the limit.
The setting value 0 will be forcibly changed into 1.

6091.01h Motor resolution

Hex:	6091-01h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	1	Change:	At stop

Value Range:
1–4294967295
Description
Defines the numerator of the gear ratio.
Defines the proportional relation between the load shaft displacement designated by the user and the motor shaft displacement.
The relation between motor position feedback (encoder unit) and load shaft position feedback (reference unit) is as follows.
Motor position feedback = Load shaft position feedback x Gear ratio
The relation between the motor speed (RPM) and the load shaft speed (reference unit/s) is as follows:
Motor speed (RPM) = Load shaft speed * 6091h * 60/Encoder resolution
The motor acceleration (RPM/ms) and the load shaft acceleration (reference unit/s2) is in the following relationship:
Motor acceleration (RPM/ms) = Load shaft acceleration * 6091h * 1000 / Encoder resolution / 60

6091.02h Shaft resolution

Hex:	6091-02h	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	1	Change:	At stop

Value Range:
1–4294967295
Description
Defines the denominator of the gear ratio.

6098h Homing method

Hex:	6098h	Effective mode:	Real time
Min.:	-3	Unit:	-
Max.:	35	Data Type:	Int8
Default:	1	Change:	Real-time

Value Range:

-3–35

Description

Table 4–1 Description of homing method

Value	Description
-3	Nearby, Z signal as home
-2	Forward, positive mechanical limit as deceleration point and Z signal as home
-1	Reverse, negative mechanical limit as deceleration point and Z signal as home
1	Reverse, negative limit switch as deceleration point and Z signal as home, falling edge of the negative limit switch signal must be reached before Z signal
2	Forward, positive limit switch as deceleration point and Z signal as home, falling edge of positive limit switch signal must be reached before Z signal
3	Forward, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
4	Forward, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
5	Reverse, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
6	Reverse, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
7	Forward, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
8	Forward, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
9	Forward, home switch as deceleration point and Z signal as home, rising edge on the other side of the home switch signal must be reached before Z signal
10	Forward, home switch as deceleration point and Z signal as home, falling edge on the other side of the home switch signal must be reached before Z signal
11	Reverse, home switch as deceleration point and Z signal as home, falling edge on the same side of the home switch signal must be reached before Z signal
12	Reverse, home switch as deceleration point and Z signal as home, rising edge on the same side of the home switch signal must be reached before Z signal
13	Reverse, home switch as deceleration point and Z signal on the other side of the home switch signal as home, rising edge on the other side of the home switch signal must be reached before Z signal

Value	Description
14	Reverse, home switch as deceleration point and Z signal on the other side of the home switch signal as home, falling edge on the other side of the home switch signal must be reached before Z signal
15–16	Undefined. The servo drive does not perform the homing operation.
17–32	Similar to setpoints 1...14 except that the deceleration point coincide with the home
33	Reverse, Z signal as home
34	Forward, Z signal as home
35	Current position as home

When 6098h is set to 15, 16, 31 or 32, it is meaningless and the servo drive does not perform the homing operation.

6099.01h Speed during search for switch

Hex:	6099-01h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	111848106	Change:	At stop

Value Range:
0 to 4294967295
Description
Defines the speed during search for the deceleration point signal. A large setpoint helps prevent E601.0 (Homing timeout).

6099.02h Speed during search for zero

Hex:	6099-02h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s
Max.:	4294967295	Data Type:	UInt32
Default:	11184810	Change:	At stop

Value Range:
0 to 4294967295
Description
Defines the speed in searching for the home signal. Setting this speed to a low value prevents overshoot during stop at high speed, avoiding excessive deviation between the stop position and the set mechanical home.

609Ah Homing acceleration

Hex:	609Ah	Effective mode:	Real time

Min.:	0	Unit:	Reference unit/s²
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:
0 to 4294967295
Description
It sets the acceleration during the homing operation.

60B0h Position offset

Hex:	60B0h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
-2147483648 to 2147483647
Description
Sets the position offset.

60B1h Velocity offset

Hex:	60B1h	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit/s
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
–2147483648 to +2147483647
Description
Set the velocity offset.

60B2h Torque offset

Hex:	60B2h	Effective mode:	Real time
Min.:	-4000	Unit:	0.001
Max.:	4000	Data Type:	Int16
Default:	0	Change:	Real-time

Value Range:
-4000–4000
Description
Sets the torque offset.

60B8h Touch probe function

Hex:	60B8h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0–65535

Description

bit	Name	Description
0	Touch probe 1 function selection 0: Probe 1 disabled 1: Probe 1 enabled	Bit0 to bit5: settings related to probe 1 When a DI is used to trigger the touch probe function, the DI source cannot be changed once the touch probe function is enabled. For absolute encoders, Z signal refers to the zero point of the single-turn position feedback.
1	Touch probe 1 trigger mode 0: Single trigger mode (Latches the position at the first trigger event.) 1: Continuous trigger mode	
2	Touch probe 1 trigger signal selection 0: DI signal 1: Z signal	
3	N/A	
4	Touch probe 1 positive edge 0: Latching at positive edge disabled 1: Latching at positive edge enabled	
5	Touch probe 1 negative edge 0: Latching at negative edge disabled 1: Latching at negative edge enabled	
6–7	N/A	-

bit	Name	Description
8	Touch probe 2 function selection 0: Probe 2 disabled 1: Probe 2 enabled	Bit8 to bit13: settings related to probe 2
9	Touch probe 2 trigger mode 0: Single trigger mode (Latches the position at the first trigger event.) 1: Continuous trigger mode	
10	Touch probe 2 trigger signal selection 0: DI signal 1: Z signal	
11	N/A	
12	Touch probe 2 positive edge 0: Latching at positive edge disabled 1: Latching at positive edge enabled	
13	Touch probe 2 negative edge 0: Latching at negative edge disabled 1: Latching at negative edge enabled	
14–15	N/A	-

60B9h **Touch probe status**

Hex:	60B9h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

Defines the functions of touch probe 1 and touch probe 2.

See the following table for descriptions of each bit of 60B9h.

bit	Name	Description
0	Touch probe 1 function selection 0: Probe 1 disabled 1: Probe 1 enabled	Bit0 to bit2: Status of probe 1
1	Touch probe 1 positive edge value 0: No positive edge value latched 1: Edge value latched	
2	Touch probe 1 negative edge value 0: No negative edge value latched 1: Negative edge value latched	
3–5	N/A	-

bit	Name	Description
6–7	When the function of probe 1 is selected as continuous sampling, the total number of times the probe is triggered	When the function of probe 1 is selected as continuous sampling, the total number of times (0–3) the probe is triggered
8	Probe 2 enable: 0: Probe 2 disabled 1: Probe 2 enabled	Bit8 to bit10: Status of probe 2
9	Touch probe 2 positive edge value 0: No positive edge value latched 1: Edge value latched	
10	Touch probe 2 negative edge value 0: No negative edge value latched 1: Negative edge value latched	
11–13	N/A	-
14–15	When the function of probe 2 is selected as continuous sampling, the total number of times the probe is triggered	When the function of probe 2 is selected as continuous sampling, the total number of times (0–3) the probe is triggered

60BAh Touch probe 1 positive edge position value

Hex:	60BAh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at positive edge of touch probe 1 signal.

60BBh Touch probe 1 negative edge position value

Hex:	60BBh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at negative edge of touch probe 1 signal.

60BCh Touch probe 2 positive edge position value

Hex:	60BCh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at positive edge of touch probe 2 signal.

60BDh Touch probe 2 negative edge position value

Hex:	60BDh	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position feedback value (reference unit) latched at negative edge of touch probe 2 signal.

60C5h Max. acceleration

Hex:	60C5h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s^2
Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the maximum permissible acceleration rate of the acceleration segment in the profile position mode, profile velocity mode, and homing mode.
The setpoint 0 will be forcibly changed to 1.

60C6h Max. deceleration

Hex:	60C6h	Effective mode:	Real time
Min.:	0	Unit:	Reference unit/s^2

Max.:	4294967295	Data Type:	UInt32
Default:	4294967295	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the maximum permissible deceleration in the profile position mode, profile velocity mode, and homing mode.

The setpoint 0 will be forcibly changed to 1.

60D5h Touch probe 1 positive edge counter

Hex:	60D5h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "1" each time this object is triggered.

60D6h Touch probe 1 negative edge counter

Hex:	60D6h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "1" each time this object is triggered.

60D7h Touch probe 2 positive edge counter

Hex:	60D7h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "2" each time this object is triggered.

60D8h Touch probe 2 negative edge counter

Hex:	60D8h	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0–65535

Description

The counting value is added by "2" each time this object is triggered.

60E0h Positive torque limit

Hex:	60E0h	Effective mode:	Real time
Min.:	0	Unit:	0.001
Max.:	4000	Data Type:	UInt16
Default:	3500	Change:	Real-time

Value Range:

0–4000

Description

It sets the maximum positive torque in the motor.

60E1h Negative torque limit

Hex:	60E1h	Effective mode:	Real time
Min.:	0	Unit:	0.001
Max.:	4000	Data Type:	UInt16
Default:	3500	Change:	Real-time

Value Range:

0–4000

Description

It sets the maximum negative torque in the motor.

60F4h Position deviation

Hex:	60F4h	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

Indicates the position deviation (reference unit).

60FCh **Position reference**

Hex:	60FCh	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

Indicates the position reference (encoder unit).

If no alarm is detected when the S-ON signal is active, the relation between the position reference in reference unit and that in encoder unit is as follows:

60FCh (in encoder unit) = 6062h (in reference unit) x 6091h

60FDh **DI state**

Hex:	60FDh	Effective mode:	-
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0–4294967295

Description

Indicates current DI logic of the drive.

0: Inactive
1: Active
The signal indicated by each bit is described as follows:

Table 4–2 The DI signal indicated by each bit

bit	Description
0	Reverse overtravel active
1	Forward overtravel active
2	Home signal active
3–15	N/A
16	DI1 input active
17	DI2 input active
18	DI3 input active
19	DI4 input active
20	DI5 input active
21–26	N/A
27	STO1 signal input
28	STO2 signal input
29	EDM output active
30	Z signal active
31	N/A

60FFh PV, CSV mode speed reference

Hex:	60FFh	Effective mode:	Real time
Min.:	-2147483648	Unit:	Reference unit/s
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Real-time

Value Range:
–2147483648 to +2147483647
Description
Defines the target speed in the cyclic synchronous velocity mode/profile velocity mode.

60FE.01h Physical output

Hex:	60FE-01h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
Indicates the DO logic.
The signal indicated by each bit is described as follows:

bit	Description
0–15	N/A
16	Forced DO1 output (0: off, 1: on); when bit 16 of 60FE.02 is set to 1
17	Forced DO2 output (0: off, 1: on); when bit 17 of 60FE.02 is set to 1
18–25	N/A
26	Switched between P and PI for gain switchover only when bit 26 of 60FE.02 is set to 1
27–31	N/A

60FE.02h Bitmask

Hex:	60FE-02h	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Real-time

Value Range:
0–4294967295
Description
0 to 15: N/A
16: Forced DO1 output enable
17: Forced DO2 output enable
18 to 25: N/A
26: P/PI switchover enable
27 to 31: N/A

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