INOVANCE

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SV660F Series Servo Drive

Function Guide

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

Data code19011669 A01

Preface

About this Guide

The SV660F series high performance AC servo drive provides a power range from 0.05 kW to 7.5 kW. It supports Profinet communication protocol and carries Ethernet communication interfaces to work with the host controller for a networked operation of multiple servo drives.

The SV660N series servo drive supports stiffness level setting, inertia auto-tuning and vibration suppression to simplify the operation process. It allows a quiet and stable operation through cooperating with the MS1 series medium-to-small inertia high-response servo motors configured with a 23-bit multi-turn absolute encoder.

It is suitable for lithium battery PACK, printing and packaging, logistics, automobile manufacturing, tobacco and other industries to achieve fast and accurate collaborative control.

This guide presents product functions and parameters, including function overview, basic servo functions, adjustment and parameter list.

More documents

Name	Data Code	Description
SV660F Series Servo Drive Selection Guide	19011667	Provides instructions on product selection, including the list of supporting components, technical data on the drive and motor, and the selection guide of cables.
SV660F Series Servo Drive Hardware Guide	19011666	Presents electrical design guidance of the equipment, description of terminals, required certificates and standards and solutions to common EMC problems.
SV660F Series Servo Drive Commissioning Guide	19011668	Presents servo commissioning, parameter descriptions, including the operating panel, commissioning software, commissioning procedure and a parameter list.
SV660F Series Servo Drive Communication Guide	19011670	Presents functions and parameters of the servo drive, including Profinet communication configuration, parameter description, and communication application cases.
SV660F Series Servo Drive Function Guide	19011669	Presents functions and parameters, including function overview, basic servo functions, adjustment and parameter list.

Name	Data Code	Description
SV660F Series Servo Drive installation Guide	19012103	Presents installation of the servo drive, including installation steps, mechanical installation, and electrical installation.
SV660F Series Servo Drive Troubleshooting Guide	19012104	Introduces faults and fault levels, the troubleshooting process, warning codes and fault codes.
SV660F Series Servo Drive Maintenance Guide	19012105	Provides instructions on maintenance and repair of the equipment.
SV660F Series Servo Drive Safety Guide	19012110	Presents the safety function and related certifications and standards, wiring, commissioning process, troubleshooting, and functions.
SV660F Series Servo Drive Manual Package	PS00005951	Provides information on selection, installation, commissioning, function, troubleshooting and parameters of the equipment.

Revision History

Date of Revision	Version	Revision
2022-11	A01	• Added warranty information in the preface. • Added formulas and examples showing modulus to the modal axis. • Optimized the description of H02.18, H03, H07.07, H0A.27, H0A.90, H0A.91, H0A.92, H17 and H29.27. • Changed the description of E735.0 to be consistent with the troubleshooting guide. • Optimized information on the program block.
2022-07	A00	First release.

Access to the guide

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

- Do keyword search at *http://www.inovance.com*.
- Scan the QR code on the equipment to acquire more.

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, you will be charged if the product is damaged due to the following causes.

- Failure to operate this product as specified in this guide.
- Fire, flood, or abnormal voltage.
- Unintended use of the product.
- Operation beyond the product's ratings.
- 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.

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General Safety Instructions

Safety Precautions

- This section explains the safety precautions that need to be observed to use this product correctly. Before using this product, please read the instruction manual and correctly understand the relevant information of safety precautions. Failure to comply with the safety precautions may result in death, serious injury, or equipment damage.
- "CAUTION", "WARNING", and "DANGER" items in the guide only indicate some of the precautions that need to be followed; they just supplement the safety precautions.
- Use this equipment according to the designated environment requirements. Damage caused by improper use is not covered by warranty.
- Inovance shall take no responsibility for any personal injuries or property damage caused by improper use.

Safety Levels and Definitions

Indicates that failure to comply with the notice will result in death or severe personal injuries.

Indicates that failure to comply with the notice may result in death or severe personal injuries.

Indicates that failure to comply with the notice may result in minor or moderate personal injuries or equipment damage.

General Safety Instructions

- Drawings in the selection guide are sometimes shown without covers or protective guards. Remember to install the covers or protective guards as specified first, and then perform operations in accordance with the instructions. Install the covers or protective guards as specified, and use the equipment in accordance with the instructions described in the user guide.
- The drawings in the guide are shown for illustration only and may be different from the product you purchased.

Unpacking

- Do not install the equipment if you find damage, rust, or signs of use on the equipment or accessories upon unpacking.
- Do not install the equipment if you find water seepage or missing or damaged components upon unpacking.
- Do not install the equipment if you find the packing list does not conform to the equipment you received.

- Check whether the packing is intact and whether there is damage, water seepage, dampness, and deformation before unpacking.
- Unpack the package by following the unpacking sequence. Do not strike the package violently.
- Check whether there is damage, rust, or injuries on the surface of the equipment and equipment accessories before unpacking.
- Check whether the package contents are consistent with the packing list before unpacking.

Storage and Transportation

- Large-scale or heavy equipment must be transported by qualified professionals using specialized hoisting equipment. Failure to comply may result in personal injuries or equipment damage.
- Before hoisting the equipment, ensure the equipment components such as the front cover and terminal blocks are secured firmly with screws. Loosely-connected components may fall off and result in personal injuries or equipment damage.
- Never stand or stay below the equipment when the equipment is being hoisted by the hoisting equipment.
- When hoisting the equipment with a steel rope, ensure the equipment is hoisted at a constant speed without suffering from vibration or shock. Do not turn the equipment over or let the equipment stay hanging in the air. Failure to comply may result in personal injuries or equipment damage.

- Handle the equipment with care during transportation and mind your steps to prevent personal injuries or equipment damage.
- When carrying the equipment with bare hands, hold the equipment casing firmly with care to prevent parts from falling. Failure to comply may result in personal injuries.
- Store and transport the equipment based on the storage and transportation requirements. Failure to comply will result in equipment damage.
- Avoid storing or transporting the equipment in environments with water splash, rain, direct sunlight, strong electric field, strong magnetic field, and strong vibration.
- Avoid storing the equipment for more than three months. Long-term storage requires stricter protection and necessary inspections.
- Pack the equipment strictly before transportation. Use a sealed box for long-distance transportation.
- Never transport the equipment with other equipment or materials that may harm or have negative impacts on this equipment.

Installation

- The equipment can be operated by well-trained and qualified professionals only. Non-professionals are not allowed.

- Read through the guide and safety instructions before installation.
- Do not install this equipment in places with strong electric or magnetic fields.
- Before installation, check that the mechanical strength of the installation site can bear the weight of the equipment. Failure to comply will result in mechanical hazards.
- Do not wear loose clothes or accessories during installation. Failure to comply may result in an electric shock.
- When installing the equipment in a closed environment (such as a cabinet or casing), use a cooling device (such as a fan or air conditioner) to cool the environment down to the required temperature. Failure to comply may result in equipment over-temperature or a fire.
- Do not retrofit the equipment.
- Do not fiddle with the bolts used to fix equipment components or the bolts marked in red.
- When the equipment is installed in a cabinet or final assembly, a fireproof enclosure providing both electrical and mechanical protections must be provided. The IP rating must meet IEC standards and local laws and regulations.
- Before installing devices with strong electromagnetic interference, such as a transformer, install a shielding device for the equipment to prevent malfunction.
- Install the equipment onto an incombustible object such as a metal. Keep the equipment away from combustible objects. Failure to comply will result in a fire.

- Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the equipment and causing faults. After installation, remove the cloth or paper on the top of the equipment to prevent over-temperature caused by poor ventilation due to blocked ventilation holes.
- Resonance may occur when the equipment operating at a constant speed executes variable speed operations. In this case, install the vibration-proof rubber under the motor frame or use the vibration suppression function to reduce resonance.

Wiring

- Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed only by professionals.
- Before wiring, cut off power connections with all equipment. Residual voltage exists after power cut-off. Therefore, wait at least the time designated on the equipment warning label before further operations. Measure the DC voltage of the main circuit and make sure it is below the safe voltage, otherwise there will be the danger of electric shock.
- Do not perform wiring, remove the equipment cover, or touch the circuit board with power ON. Failure to comply will result in an electric shock.
- Check that the equipment is grounded properly. Failure to comply will result in an electric shock.

- Do not connect the input power supply to the output end of the equipment. Failure to comply will result in equipment damage or even a fire.
- When connecting a drive to the motor, check that the phase sequences of the drive and motor terminals are consistent to prevent reverse motor rotation.
- Cables used for wiring must meet cross sectional area and shielding requirements. The shield of the cable must be reliably grounded at one end.
- Fix the terminal screws with the tightening torque specified in the user guide. Improper tightening torque may overheat or damage the connecting part, resulting in a fire.
- After wiring is done, check that all cables are connected properly and no screws, washers or exposed cables are left inside the equipment. Failure to comply may result in an electric shock or equipment damage.

- During wiring, follow the proper electrostatic discharge (ESD) procedure, and wear an antistatic wrist strap. Failure to comply will damage the equipment or the internal circuits of the equipment.
- Use shielded twisted pairs for the control circuit. Connect the shield to the grounding terminal of the equipment for grounding purpose. Failure to comply will result in equipment malfunction.

Power-on

- Before power-on, check that the equipment is installed properly with reliable wiring and the motor can be restarted.
- Check that the power supply meets equipment requirements before power-on to prevent equipment damage or a fire.
- After power-on, do not open the cabinet door or protective cover of the equipment, touch any terminal, or disassemble any unit or component of the equipment. Failure to comply will result in an electric shock.

- Perform a trial run after wiring and parameter setting to ensure the equipment operates safely. Failure to comply may result in personal injuries or equipment damage.
- Before power-on, make sure that the rated voltage of the equipment is consistent with that of the power supply. Failure to comply may resulting in a fire. Failure to comply may result in a fire.
- Before power-on, check that no one is near the equipment, motor, or machine. Failure to comply may result in death or personal injuries.

Operation

- The equipment must be operated only by professionals. Failure to comply will result in death or personal injuries.
- Do not touch any connecting terminals or disassemble any unit or component of the equipment during operation. Failure to comply will result in an electric shock.

- Do not touch the equipment casing, fan, or resistor with bare hands to feel the temperature. Failure to comply may result in personal injuries.
- Prevent metal or other objects from falling into the equipment during operation. Failure to comply may result in a fire or equipment damage.

Maintenance

- Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed only by professionals.
- Do not maintain the equipment with power ON. Failure to comply will result in an electric shock.
- Before maintenance, cut off all the power supplies of the equipment and wait for at least the time designated on the equipment warning label.
- In case of a permanent magnet motor, do not touch the motor terminals immediately after power-off because the motor terminals will generate induced voltage during rotation even after the equipment power supply is off. Failure to comply will result in an electric shock.

- Perform routine and periodic inspection and maintenance on the equipment according to maintenance requirements and keep a maintenance record.

Repair

- Equipment installation, wiring, maintenance, inspection, or parts replacement must be performed only by professionals.
- Do not repair the equipment with power ON. Failure to comply will result in an electric shock.
- Before inspection and repair, cut off all the power supplies of the equipment and wait for at least the time designated on the equipment warning label.

- Submit the repair request according to the warranty agreement.
- When the fuse is blown or the circuit breaker or earth leakage current breaker (ELCB) trips, wait for at least the time designated on the equipment warning label before power-on or further operations. Failure to comply may result in death, personal injuries or equipment damage.
- When the equipment is faulty or damaged, the troubleshooting and repair work must be performed by professionals that follow the repair instructions, with repair records kept properly.
- Replace quick-wear parts of the equipment according to the replacement instructions.
- Do not use damaged equipment. Failure to comply may result in death, personal injuries, or severe equipment damage.
- After the equipment is replaced, check the wiring and set parameters again.

Disposal

- Dispose of retired equipment in accordance with local regulations and standards. Failure to comply may result in property damage, personal injuries, or even death.
- Recycle retired equipment by observing industry waste disposal standards to avoid environmental pollution.

Additional Precautions

Cautions for the dynamic brake

- Dynamic braking can only be used for emergency stop in case of failure and sudden power failure. Do not trigger failure or power failure frequently.
- Ensure that the dynamic braking function has an operation interval of more than 5 minutes at high speed, otherwise the internal dynamic braking circuit may be damaged.

- Dynamic braking is common in rotating mechanical structures. For example, when a motor has stopped running, it keeps rotating due to the inertia of its load. In this case, this motor is in the regenerative state and short-circuit current passes through the dynamic brake. If this situation continues, the drive, and even the motor, may be burned.

Safety Label

For safe equipment operation and maintenance, comply with the safety labels on the equipment. Do not damage or remove the safety labels. See the following table for descriptions of the safety labels.

Safety Label	Description
	• Never fail to connect the protective earth (PE) terminal. Read through the guide and follow the safety instructions before use. • Never fail to connect Protective Earth (PE) terminal. Read the manual and follow the safety instructions before use. • Do not touch terminals within 15 minutes after disconnecting the power supply to prevent the risk of electric shock. • Do not touch terminals with 15 minutes after Disconnect the power. Risk of electrical shock. • Do not touch the heatsink with power ON to prevent the risk of burn. • Do not touch heatsink when power is ON. Risk of burn.

1 Function Overview

Functions of the servo drive are listed below. See details in corresponding chapters.

Function	Description
Touch Probe Function	The servo drive latches the position information when an external DI signal or motor Z signal changes.
High-resolution encoder	The servo drive is equipped with a high-performance encoder with resolution up to 8388608 PPR.
Mechanical characteristics analysis	Used to analyze the resonance frequency and characteristics of the mechanical system through a PC installed with Inovance software tool.
Auto Gain Tuning	The servo drive generates gain parameters automatically to match present working conditions through just one parameter.
Gain switchover	Used to apply different gains to different status (operating or stop) of the motor. Gains can also be switched by external terminals during operation.
Torque disturbance observer	The servo drive estimates the disturbance torque suffered by the system to suppress vibration through compensation.
Resonance suppression	The servo drive sets filter characteristics automatically to suppress mechanical system vibration after detecting the resonance point.
Torque Reference Filter	Used to suppress the mechanical resonance that may be generated when the response speed is excessively high.
Position first-order low-pass filter	Used to achieve smooth acceleration and deceleration.
Torque limit	The servo drive limits the output torque of the servo motor.
Speed limit	The servo drive limits the servo motor speed.
External regenerative resistor	Used in case of insufficient braking capacity of the built-in regenerative resistor.
DI signal assignment	DI functions such as emergency stop can be assigned to corresponding pins.
Alarm history	Used to record the latest twenty faults/warnings, which can also be cleared.
Status display	Used to display the drive status through the LED on the keypad.
External I/O display	Used to display ON/OFF status of external I/O signals.
Forced DO	Used to output signals not related to the drive status forcibly or used to check the wiring of output signals.
Trial run mode	Used to enable the motor through the keypad without a start signal.
Inovance servo commissioning software	Used to set parameters, perform trial run, and check status through a PC.

Function	Description
Warning code output	Used to output a four-bit warning code when a warning occurs.
Position Comparison	The servo drive outputs a DO signal with designated width after reaching the preset target position.
Black box	The servo drive captures the data before and after the designated condition and cooperates with the software tool to read the data for further analysis.

2 Basic Functions of the Servo Drive

The servo system consists of three major parts, the servo drive, servo motor, and feedback encoder.

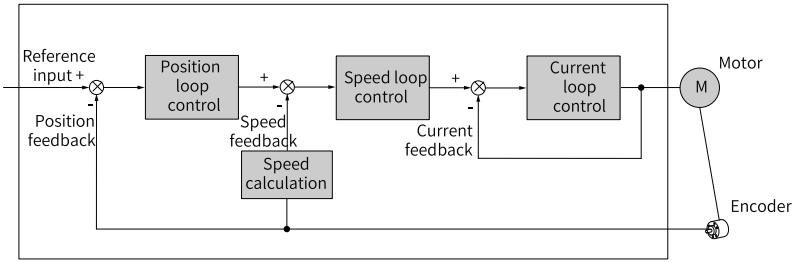


Figure 2-1 Structure of a basic servo system

As the control core of the servo system, the servo drive performs accurate position, speed, torque, or hybrid control on the servo motor by processing the input signals and feedback signals. Position control is the most important mode of a servo system.

Descriptions of the control modes are as follows:

- Position control In the position control mode, the target position of a motor is determined by the sum of position references, and the motor speed is determined by the position reference frequency. The servo drive performs quick and accurate position and speed control through the encoder installed on the motor or an external encoder (full closed-loop control). The position control mode mainly applies to applications requiring positioning control, such as manipulators, SMT machines, engraving and milling machines, and CNC machine tools.
- Speed control In the speed control mode, the servo drive performs quick and accurate speed control through the speed reference sent through communication. The speed control mode mainly applies to application requiring speed control or where a host controller is used for position control or the commands sent from the host controller are used as the speed references for the servo drive, such as the engraving and milling machine.
- In the torque control mode, the motor current is in linear relation with the torque. Therefore, torque control is implemented through current control. The servo drive controls the motor output torque based on torque references. The torque reference can be set through communication. This control mode is mainly applicable to the winding and unwinding devices with strict tension requirements. In these scenarios, the torque always changes with the winding radius so that the tension will not change along with the change of the winding radius.

3 Applications

3.1 Absolute System

3.1.1 Overview

The absolute encoder, which features a single-turn resolution of 8388608 (223), is used to detect the motor position within one turn and count the number of motor revolutions, with 16-bit multi-turn data recorded. The absolute system integrated with the absolute encoder works in absolute position linear mode or absolute position rotating mode. These modes apply to position control, speed control, and torque control modes. The absolute encoder with a battery can back up data when the servo drive is powered off. This enables the servo drive to calculate the absolute mechanical position upon power-on again. Therefore, the homing operation is not required.

To match the absolute encoder with the SV660F series servo drives, H00.00 (Motor code) to 14101 (Inovance 23-bit absolute encoder). Then set H02.01 (Absolute system selection) based on actual conditions. E731.0 (Encoder battery failure) will occur upon initial power-on of the battery. Set H0d.20 (Absolute encoder reset function) to 1 to reset E731.0 before performing the homing operation.

Note

When you change the value of H02.02 (Direction of rotation) or H0d.20 (Absolute encoder reset selection), the absolute position recorded by the encoder changes suddenly, causing the mechanical absolute position reference to change. In this case, perform the homing operation. After homing is done, the deviation between the mechanical absolute position and that recorded in the encoder will be calculated automatically and saved in the EEPROM of the servo drive.

3.1.2 Related Parameters

Absolute encoder system settings

Set H00.00 (Motor code) to 14101 (Inovance motor with 23-bit absolute encoder), and select the absolute position mode in H02.01.

See *" H00_en.00" on page 52* for details.

See *" H00_en.08" on page 53* for details.

See *" H02_en.01" on page 59* for details.

Note

In the absolute position mode, the system detects the motor code automatically to check whether the motor used is configured with an absolute encoder. If not, E122.0 (multi-turn absolute encoder setting error) occurs.

Encoder feedback data

The encoder feedback data is divided into the number of revolutions and the single-turn position. For the incremental position mode, the number of revolutions is not recorded.

See *" H0b_en.70" on page 181* for details.

See *" H0b_en.71" on page 181* for details.

See *" H0b_en.77" on page 182* for details.

See *" H0b_en.79" on page 182* for details.

Absolute position linear mode

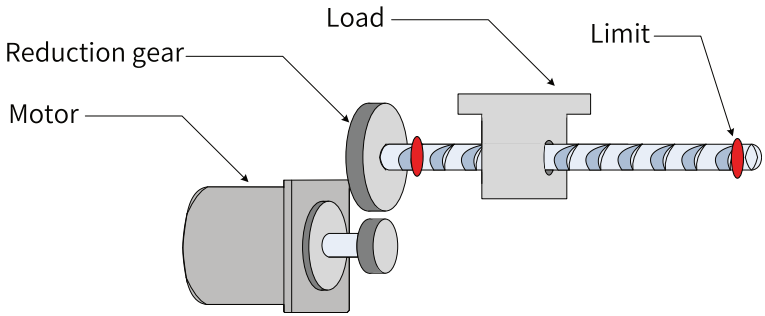


Figure 3-1 Application of the linear mode

Assume the absolute mechanical position (H0b.58 and H0b.60) is PM, the encoder absolute position is PE, the position offset in the absolute position linear mode is P_O, their relationship will be: $P_M = P_E$ - PO.

If the electronic gear ratio is B ÷ A, then the following formula applies: H0b.07 (Absolute position counter) = PM ÷ (B ÷ A) H0b.07 indicates present mechanical absolute position (in reference unit).

The multi-turn data range in the absolute position linear mode is -32768 to +32767. If the number of forward revolutions is higher than 32767 or the number of reverse revolutions is lower than -32768, E735.0 (encoder multi-turn counting overflow) occurs. In this case, you must set H0d.20 to 2 (reset multi-turn data) and power on

again, or even perform homing again. In special occasions, you can set H0A.36 to 1 to hide E735.0 or use absolute position linear mode 2.

See *" H05_en.46" on page 100* for details.

See *" H0A_en.36" on page 157* for details.

See *" H0b_en.07" on page 169* for details.

See *" H0b_en.58" on page 179* for details.

See *" H0b_en.60" on page 180* for details.

Absolute position rotation mode

This mode applies in cases where the load travel range is unlimited and the number of unidirectional revolutions is lower than 32767 upon power failure, as shown in the following figure.

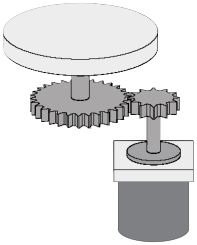
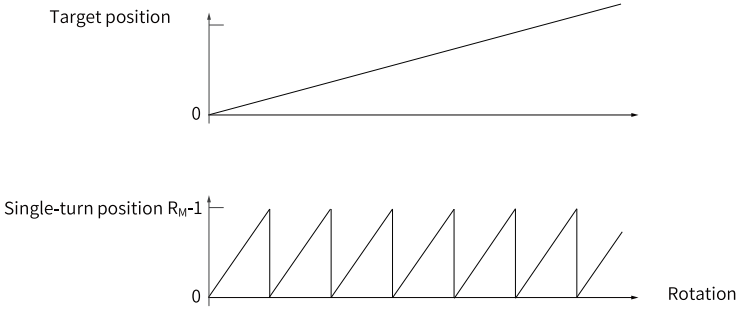
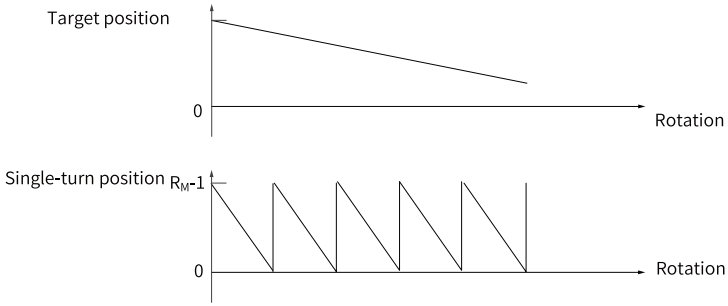


Figure 3-2 Application of the linear mode

The single-turn position range of the rotary load is 0 to (RM - 1) (RM: Encoder pulses per load revolution). When the gear ratio is 1:1, the variation law of the target position and the single-turn position of the rotary load during forward operation is shown as follows.



The variation law of the target position and the single-turn position of the rotary load during reverse operation is shown as follows.



The multi-turn data range is unlimited in the absolute position rotation mode. Therefore, E735.0 (Encoder multi-turn counting overflow) is hidden automatically.

Related parameters:

See *" H05_en.50" on page 100* for details.

See *" H05_en.51" on page 101* for details.

See *" H05_en.52" on page 101* for details.

See *" H05_en.54" on page 101* for details.

See *" H0b_en.81" on page 182* for details.

See *" H0b_en.83" on page 183* for details.

See *" H0b_en.85" on page 183* for details.

3.1.3 Precautions for Use

E731.0 (Encoder battery failure) will occur at initial power-on of the battery. Set H0d.20 (Absolute encoder reset function) to 1 to reset E731.0 before further operations.

When the battery voltage detected is lower than 3.0 V, E730.0 (Encoder battery warning) occurs.

In this case, replace the battery according to the following steps.

1. Power on the servo drive and make it stay in the non-operational state.
2. Replace the battery.
3. After the servo drive resets E730.0 automatically. If no other warning occurs, continue to operate the servo drive.

Note

- If you replace the battery after powering off the servo drive, E731.0 (Encoder battery failure) will occur at next power-on, leading to an abrupt change in the multi-turn data. In this case, set H0d.20 to 1 to reset the encoder fault. Then perform the homing operation again.
- Ensure the maximum motor speed does not exceed 6000 rpm upon power-down of the servo drive. This is to enable the encoder to record the position accurately.
- Keep the battery in environments within the required ambient temperature range and ensure the battery is in reliable contact and carries sufficient power capacity. Otherwise, encoder data loss may occur.

See *" H0d_en.20" on page 188* for details.

Note

The absolute position recorded by the encoder changes abruptly after multi-turn data reset. In this case, perform mechanical homing.

3.2 Program Block

Overview

Up to 16 different operating tasks can be stored in the drive system and can be used by the controller to control the drive.

Configuration Notes

You can configure program block parameters in the commissioning software through Graphical Configuration. You can also achieve that through parameters H27 and H28, as shown in *"Figure 3–3 " on page 21* and *"Figure 3–4 " on page 22* .

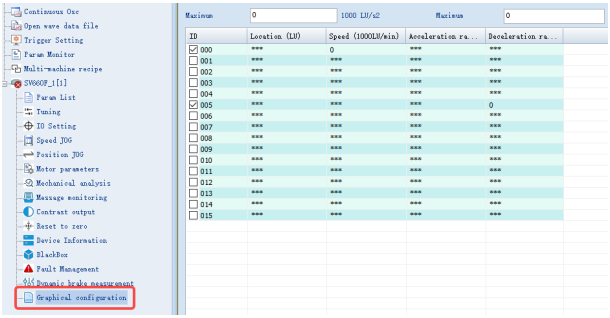


Figure 3-3 Configuration through Graphical Configuration

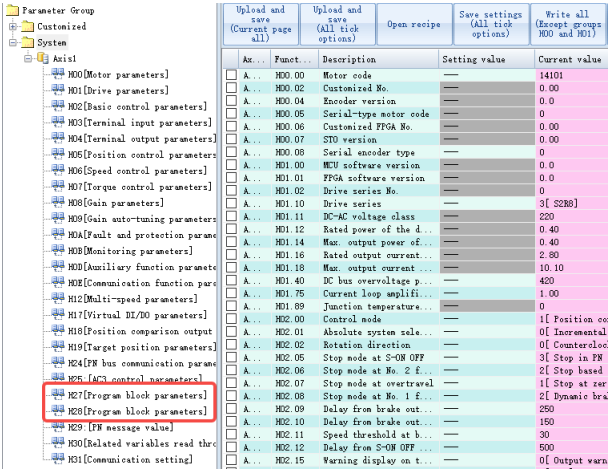


Figure 3-4 Configuration through H27 and H28

Task setting

Open the Graphical Configuration page and click **Task settings** to select the task mode, as shown in *"Figure 3–5 " on page 22* . The task modes are positioning, fixed stopper, forward cycle, reverse cycle, waiting, switching, setting I/O and resetting I/O.

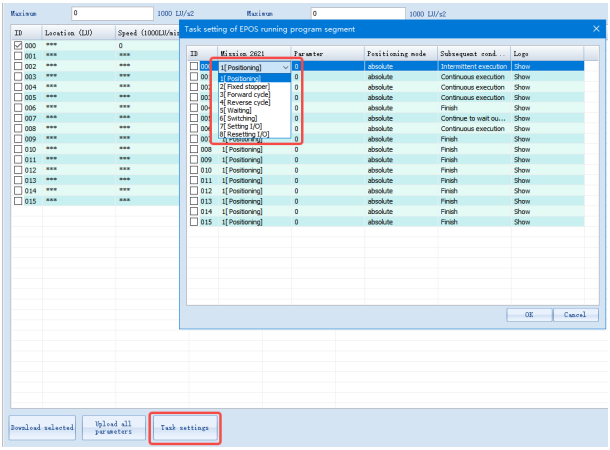


Figure 3-5 Task setting of the program block

The task modes are described as follows:

- Positioning: Positioning mode.
- Fixed stopper: The shaft runs to the stopper when the torque is reached.
- Forward cycle: Rotation in the forward direction.
- Reverse cycle: Rotation in the reverse direction.

- Waiting: You can set the waiting time (ms) before executing the next task.
- Switching: Move to the specified program block and determine the program block number to be switched to according to the parameters.
- Setting IO:
  - Sets OUTPUT1 and OUTPUT2(POS_ZSW2.10 and POS_ZSW2.11). If H28.32 to H28.62 are 1, OUTTPUT1 = 1 (POS_ZSW2.10 = 1).
  - If H28.32 to H28.62 are 2, OUTTPUT2 = 1 (POS_ZSW2.11 = 1).
  - If H28.32 to H28.62 are 3, OUTTPUT1 = 1 (POS_ZSW2.10 = 1) and OUTPUT2 = 1 (POS_ZSW2.11 = 1).
- Resetting IO:
  - Resets OUTPUT1 and OUTPUT2 (POS_ZSW2.10 and POS_ZSW2.11). If H28.32 to H28.62 are 1, OUTPUT1 = 0 (POS_ZSW2.10 = 0).
  - If H28.32 to H28.62 are 2, OUTTPUT2 = 0 (POS_ZSW2.11 = 0).
  - If H28.32 to H28.62 are 3, OUTTPUT1 = 0 (POS_ZSW2.10 = 0) and OUTPUT2 = 0 (POS_ZSW2.11 = 0).

The subsequent conditions are **finish**, **intermittent execution**, **continuous execution**, **continue external execution**, **continue to wait outside** and **continue external alarm**. as shown in *"Figure 3–6 " on page 23* .

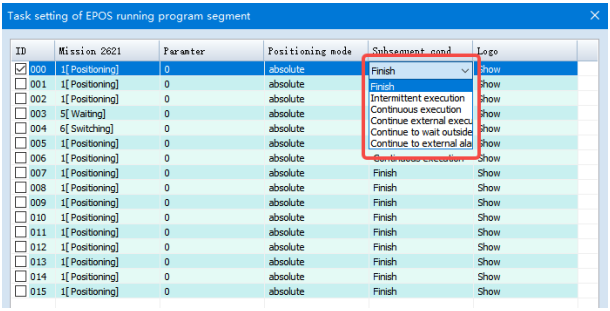


Figure 3-6 Subsequent condition of the program block

- Finish: Operation stops after the program block finishes.
- Intermittent execution: The axis stops after reaching the target position before carrying out the next task.
- Continuous execution: The next program block is executed without deceleration.
- Continue external execution: Defines the external execution signal source based on H28.68. If the signal does not trigger, execute the next program block continuously. If the signal triggers, run the next program block in advance.
- Continue to wait outside: Waits for the execution signal after the program block finishes. The signal source is determined by H28.68. When the signal is 1, the next program block is executed.

- Waits for the execution signal after the program block finishes. The signal source is determined by H28.68. When the signal is 1, the next program block is executed. Warning E550.2 is issued during waiting.

Configuration case

1. Connect the PLC to the drive through telegram 111. If the drive shows 43ry, the communication is successful.
2. Set FB284 ModePos to 6 to enter program block control. FB284 position now represents the selected program block. Select the program block to be run and send a rising edge signal to ExecuteMode to activate the selected block. as shown in *"Figure 3–7 " on page 24* .

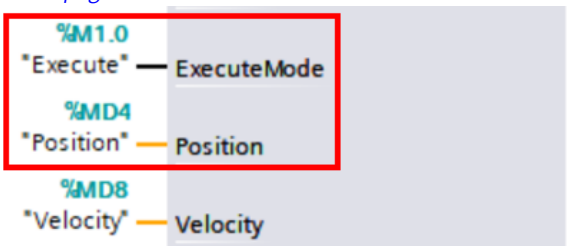


Figure 3-7 Related pins

3. Set the program block parameters as shown in *"Figure 3–8 " on page 24* . Blocks 1, 2, 6, 7, 8 are in the positioning mode, and block 3 is in the waiting mode. Block 4 is set directly to switch to block 6. Block 5 is skipped.

ID	Location (LU)	Speed (1000LU/min)	Acceleration ra...	Deceleration ra...
☑ 001	100000	1000	100	100
☑ 002	200000	600	100	100
☑ 003	0	600	100	100
☑ 004	0	600	100	100
☑ 005	0	600	100	100
☑ 006	300000	600	100	100
☑ 007	400000	600	100	100
☑ 008	600000	1200	100	100
☑ 009	0	600	100	100
☐ 010	0	600	100	100
☐ 011	0	600	100	100
☐ 012	0	600	100	100
☐ 013	0	600	100	100
☐ 014	0	600	100	100
☐ 015	0	600	100	100
☐ 016	0	600	100	100

Figure 3-8 Program block setting

4. The task settings are shown in *"Figure 3–9 " on page 25* . The subsequent condition for block 1 is set to intermittent execution, that for block 6 is set to continue to wait outside, and that for other blocks to be used is set to continuous execution.

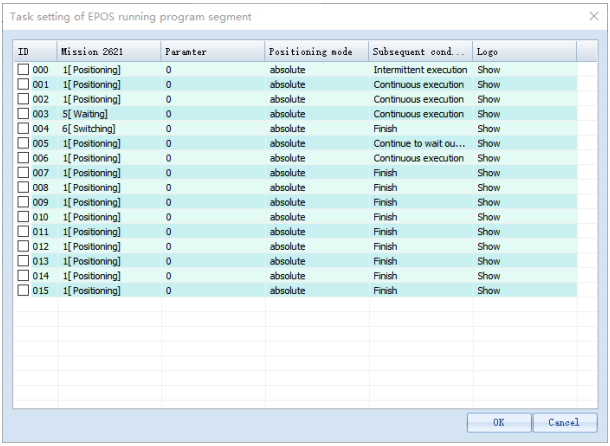


Figure 3-9 Task setting for the running block

5. Set the parameters as shown above to get the servo axis operation curve as shown in *"Figure 3–10 " on page 25* . The numbers on the diagram correspond to the program blocks.

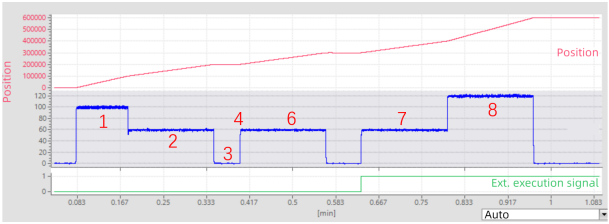


Figure 3-10 Servo axis operation curve

- As shown in *"Figure 3–10 " on page 25* , the subsequent condition of block 1 is intermittent execution, so there is a certain deceleration and acceleration process between blocks 1 and 2.
- Block 3, which waits for 3s, is executed after block 2.
- After 3s, block 4 is executed, that is directly switching to block 6, whose subsequent condition is continue to wait outside. Then block 7 waits to be executed until the external execution signal (determined by H28.68) is 1.
- The subsequent condition for block 7 is set to continuous execution. After the end of block 7, block 8 is executed directly without deceleration.

3.3 Model Axis

Overview

The modal axis feature restates the position signal to 0 after a distance. If it is applied to a rotary axis, you can set the angle signal to return to zero after a specific angle, or a specific distance if applied to a linear axis.

Description

Set H02-05 = 2 or 5 when using the modal axis feature.

- When H02.01 = 2, the absolute position command in this mode can be greater than the modulus. If it is greater than N times the modulus, then the distance of movement exceeds N modulus revolutions.
- When H02.01 = 5, the position command number is first modulated in this mode and then the modulus is fed into the position loop as a new command, that is, the distance of movement is always less than 1 modulus revolution.

When H02.01 = 5, the direction of motion for absolute positioning can be selected by the control words POS_STW1.bit9 and POS_STW1.bit10.

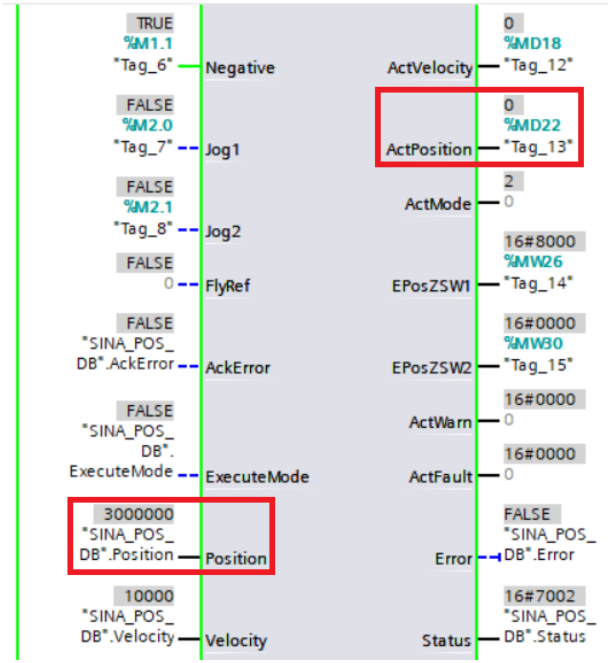
- The direction is forward only if POS_STW1.bit9 is 1.
- The direction is reverse only if POS_STW1.bit10 is 1.
- When both POS_STW1.bit9 and POS_STW1.bit10 are 1 or 0, the axis moves in the direction with the least distance.

Configuration case

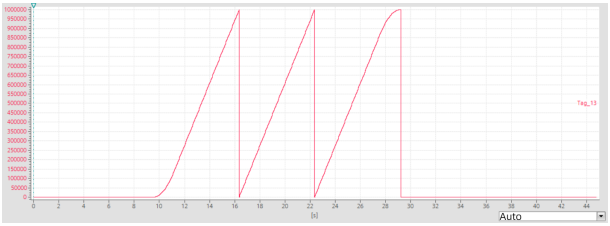
1. Connect the PLC to the drive through telegram 111. If the drive shows 43ry, the communication is successful. Set H02.01 = 2 to enter absolute position rotation mode.

☐	Axis1	H02.00	Control mode	—	1[Position control m...
☑	Axis1	H02.01	Absolute system selection	2[Absolute pos...	0[Incremental mode]
☐	Axis1	H02.02	Rotation direction	—	0[Counterclockwise (...

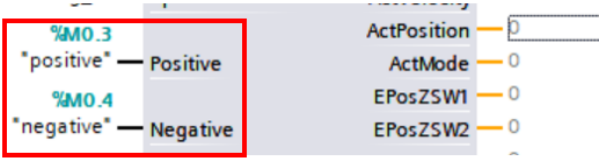
2. The axis is controlled by telegram 111. The operating mode is MDI absolute positioning. Set H29.71 = 1000000 and the absolute position is 3000000. Current axis position is 0.



The position feedback curve is as follows:



3. Set H02.01 = 5 to enter absolute position rotation mode, modal axis single modulus revolution absolute command. Set the absolute position to 3995000. The motion distance of the axis is 1000000–995000 = 5000.
   Setting H02.01 = 5 allows direction selection.
   - When FB284 Function Block Pin Positive is set to 1, the motion direction is positive.
   - When Negative is set to 1, the direction is negative.
   - When positive pins are 1 or 0, the axis moves in the direction with the least distance.



Modulus formula

- **When the pulses per revolution of the load in absolute rotation mode (H05.52 和H05.54) is not 0:**
  The absolute position rotation mode mechanical gear ratios (H05.50 and H05.51) become ineffective, and the pulses per revolution of absolute rotation mode load (H05.52 and H05.54) take effect:

$$\text{Modal axis modulus} = \text{PPR of load in abs. rotation mode} \div \frac{\text{E-gear ratio numerator}}{\text{E-gear ratio denominator}}$$

- **When the pulses per revolution of the load in absolute rotation mode (H05.52 和H05.54) is 0:**
  The pulses per revolution of absolute rotation mode load (H05.52 and H05.54) become ineffective, and the absolute position rotation mode mechanical gear ratio (H05.50 and H05.51) takes effect:

$$\text{Modal axis modulus} = \text{Encoder resolution} \div \frac{\text{E-gear ratio numerator}}{\text{E-gear ratio denominator}} \times \frac{\text{Abs. pos. rotation mode mechanical GR numerator}}{\text{Abs. pos. rotation mode mechanical GR denominator}}$$

- **Example**
  When the drive works with a 23-bit motor, the encoder resolution is a fixed value of 8388608. Set H05.07 = 8388608, H05.09 = 10000, H05.02 = 0.
  - When H05.52 = 838860800 and H05.54 = 0, H05.50 and H05.51 become ineffective, and the modulus of the modal axis is:

$$\text{Modal axis modulus} = 838860800 \div \frac{8388608}{10000} = 1000000$$

  - When H05.52 = 0, H05.54 = 0, H05.50 = 60000, H05.51 = 100, The modal axis modulus is:

$$\text{Modal axis modulus} = 8388608 \div \frac{8388608}{10000} \times \frac{60000}{100} = 6000000$$

  - If the user wants to set the modal axis modulus to 360, the parameters can be set as follows:
    H05.02 = 0

    H05.07 = 8388608

    H05.09 = 36

H05.52 = 83886080

H05.54 = 0

Then, the modal axis modulus H29.90 = 360.

3.4 Software limit

Description

Hardware position limit is implemented by inputting external encoder signals to CN1 of the servo drive.

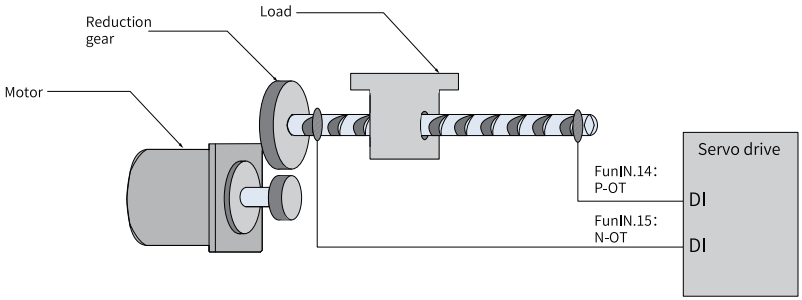


Figure 3-11 Installation of limit switches

Software position limit is implemented through a comparison between the internal position feedback and the set limit value. If the set limit value is exceeded, the servo drive reports a warning and stops immediately. Software position limit is available both in the absolute position mode and the incremental position mode. To use the software position limit in the incremental position mode, set H0A.01 (Software position limit) to 2 (Enabled after homing) first, and then perform homing upon power-on before applying software position limit.

Table 3–1 Comparison between the hardware position limit and software position limit

Hardware Position Limit		Software position limit	
1	Restricted to linear motion and single-turn rotational motion.	1	Applicable to both the linear motion and the rotational motion.
2	Requires an external mechanical limit switch.	2	Removes the need for hardware wiring, preventing malfunction due to poor cable contact.
3	Suffered from the risk of mechanical slip.	3	Prevents malfunction due to mechanical slip through internal position comparison.
4	Unable to sense or detect an overtravel fault after power-off.		

Related objects

☆ Related parameters:

See *" H0A_en.01" on page 151* for details.

See *" H0A_en.41" on page 158* for details.

See *" H0A_en.43" on page 159* for details.

- When H0A.01 is set to 0, software position limit is disabled.
- When H0A.01 is set to 1, software position limit is enabled immediately upon power-on. When the value of the absolute position counter (H0b.07) is higher than the value of H0A.41, E950.0 (Forward overtravel warning) occurs and the drive stops accordingly.
  When the value of the absolute position counter (H0b.07) is lower than the value of H0A.43, E952.0 (Reverse overtravel warning) occurs and the drive stops accordingly.
- If H0A.01 is set to 2, software position limit is not enabled after homing upon power-on. When the value of the absolute position counter (H0b.07) is higher than the value of H0A.41 after homing, E950.0 (Forward overtravel warning) occurs and the drive stops accordingly. When the value of the absolute position counter (H0b.07) is lower than the value of H0A.43 after homing, E952.0 (Reverse overtravel warning) occurs and the drive stops accordingly.

3.5 Software Reset

Description

The software reset function applies when power cycling of the drive is not allowed on the application site.

Related objects

☆ Related parameters:

See *" H0d_en.00" on page 185* for details.

3.6 Motor Protection

Motor overload protection

The motor generates heat continuously due to thermal effect of the current after power-on. The heat is then dissipated to the surroundings. When the heat generated exceeds the heat dissipated, the motor temperature will rise to a point that could damage the motor. To prevent such risks, the drive offers the motor overload protection function to prevent the motor from being damaged due to over-temperature.

The motor is compliant with NEC and CEC requirements and equipped with protective functions against overload and overtemperature.

Set the motor overload protection gain (H0A.04) to adjust the report time of fault E620.0. Use the default value of H0A.04 in general conditions, however, in case of one of the following situations, modify H0A.04 based on the actual heating condition.

- The motor works in environments with high temperature.
- The motor is in the cyclic motion featuring short motion cycle and frequent acceleration/deceleration.

You can also hide motor overload detection (H0A.26 = 1) when you are sure that the motor will not be damaged due to overtemperature.

Take caution when hiding motor overload detection as such operation may damage the motor.

☆ Related parameters:

See *" H0A_en.04" on page 152* for details.

See *" H0A_en.26" on page 155* for details.

Locked rotor over-temperature protection

When the motor is stalled, the motor speed is nearly 0 RPM while the current is large. In this case, the motor is overheated significantly. The motor is capable of operating upon stall in an allowable period of time, exceeding of which can damage the motor due to overtemperature. To prevent such risks, the drive offers motor overtemperature protection to protect the motor from being damaged by overtemperature.

You can set the time for reporting E630.0 (Motor stall over-temperature fault) by setting the time threshold for motor overtemperature protection (H0A.32). The motor overtemperature protection function is enabled by default (H0A.33 = 1).

Take caution when disabling motor stall over-temperature protection as such operation may damage the motor.

Use a dedicated motor for the servo drive. Failure to comply will result in the risk of short circuit due to insulation deterioration.

☆ Related parameters:

See *" H0A_en.32" on page 157* for details.

See *" H0A_en.33" on page 157* for details.

Motor overspeed protection

An excessively high speed may damage the motor or machine. Motor overspeed protection is used to protect the motor in case of overspeed, preventing the motor or machine from being damaged due to overtemperature.

$$\text{Overspeed threshold} = \begin{cases} \text{Max. motor speed x 1.2} & \text{H0A.08 = 0 or H0A.08 > Max. motor speed x 1.2} \\ \text{H0A.08} & \text{H0A.08} \neq 0 \text{ and H0A.08 < Max. motor speed x 1.2} \end{cases}$$

- The servo drive also offers motor runaway protection to prevent motor stall caused by lose of control.
- In applications where the motor drives a vertical axis or is driven by load, set H0A.12 to 0 to hide runaway fault detection. Use this function with caution.

☆ Related parameters:

See *" H0A_en.08" on page 152* for details.

See *" H0A_en.12" on page 153* for details.

Besides runaway protection, the drive also allows you to set the speed limit in the speed/torque control mode to protect the motor and the machine.

3.7 DI Filter Time Setting

Description

The drive provides 5 physical DI terminals, in which DI1 to DI3 are normal DI terminals, and DI4 to DI5 are high-speed DI terminals.

When regular functions (touch probe excluded) are assigned to DIs, the filter time of these DIs is set in H03.60...H03.64. Ensure the effective level hold time of the DI assigned with regular function is above 0.5 ms. Otherwise, the DI function may not be responded to.

When a high-speed DI is assigned with the touch probe function, the filter time of this DI is defined by H0A.19 and H0A.20. Ensure the effective level hold time of the high-speed DI is longer than the filter time.

Related objects

The drive provides two high-speed DIs with input signal frequency up to 4 kHz. When the DI signal is being disturbed, set the filter time in H0A.19 and H0A.20.

☆ Related parameters:

See *" H03_en.60" on page 80* for details.

See *" H03_en.61" on page 81* for details.

See *" H03_en.62" on page 81* for details.

See *" H03_en.63" on page 81* for details.

See *" H03_en.64" on page 81* for details.

See *" H03_en.65" on page 82* for details.

See *" H03_en.66" on page 82* for details.

See *" H03_en.67" on page 82* for details.

See *" H0A_en.19" on page 154* for details.

See *" H0A_en.20" on page 155* for details.

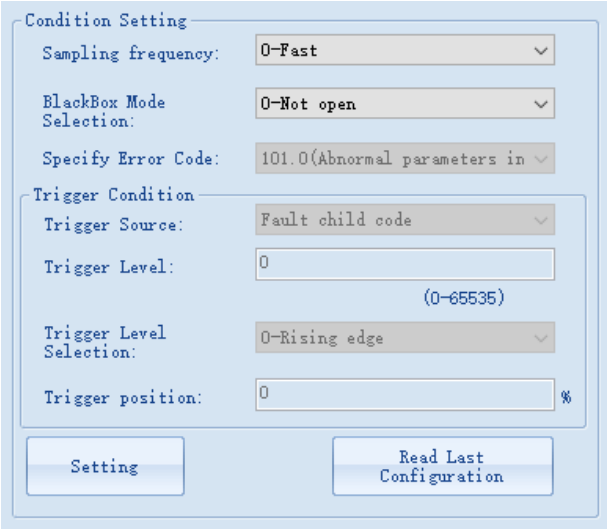
3.8 Black Box

Description

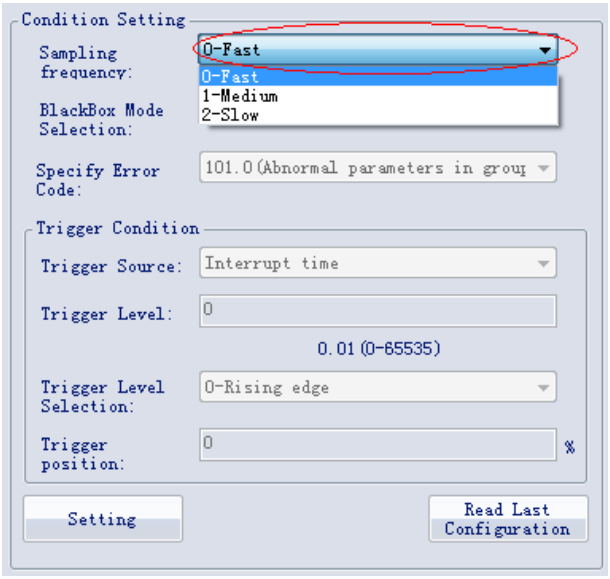
The black box function is used to capture and save the data generated upon occurrence of faults or under designated conditions. Such data can be read and uploaded by users through the software tool to facilitate troubleshooting.

The black box is enabled by default. It is triggered upon occurrence of a fault or a sampling frequency of 16k. The black box function will be turned off automatically after it is being triggered, or turned on automatically upon fault reset or power cycling.

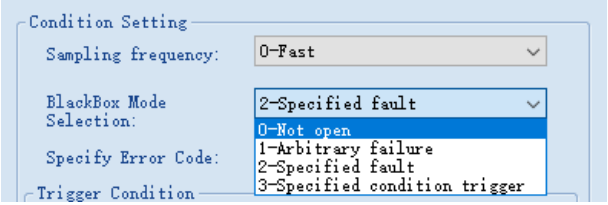
Triggering the black box



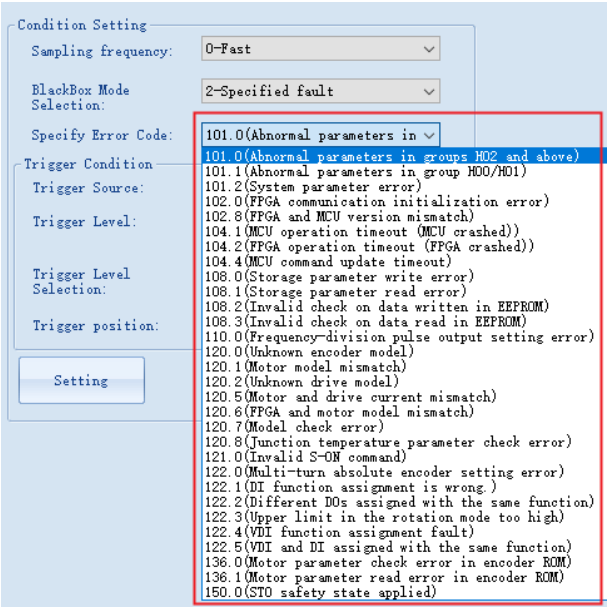
1. Sampling frequency: including three sampling frequencies, namely 16k (Fast), 4k (Medium), and 1k (Slow).



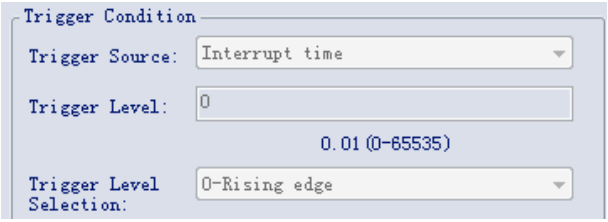
2. Black box mode selection: including three modes, namely Arbitrary failure, Specified fault, and Specified condition trigger.



3. Select designated fault in the combo box, as shown below.



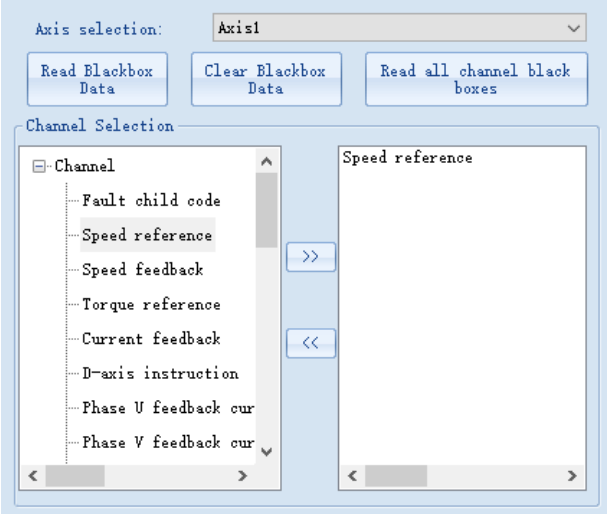
4. The Trigger Condition includes Trigger Source, Trigger Level, and Trigger Level Selection, as shown below.



5. Trigger position is used to set the position of the trigger time in the total sampling time, which is set to 75% by default.
6. After the black box is set, click Setting to download configuration parameters to the servo drive.

Reading black box data

You can select the black box channels (4 channels at most) by clicking >> or <<, or read data of all the channels by clicking Read all, then click Save to save the waveform files.



4 STO

4.1 General

4.1.1 Terms and Abbreviations

Terms and Abbreviations	Description
Cat.	Safety category It includes B, 1, 2, 3, and 4.
CCF	Common cause failure
DCavg	Average diagnostic coverage (%)
DTI	Diagnostic test interval time
SFF	Safe failure fraction
HFT	Hardware fault tolerance
PFH_D	Probability of a dangerous Failure per Hour
PL	Performance Level
SC	Systematic capability
SIL	Safety integrity level
T_1	Test interval
DI	Digital input
DO	Digital output
PCB	Printed circuit board
MCU	Micro computer unit
FPGA	Field programmable gate array
MTTFd	Mean time to dangerous failure
STO	The safe torque off (STO) function brings the machine safely into a no-torque state and prevents it from unexpected start. If the motor is running when STO function is activated, it coasts to 0 RPM.

4.1.2 Safety Standards

Standards compliance

- EC directives and standards
  Low Voltage Directive 2014/35/EU Standard EN 61800-5-1

  EMC Directive 2014/30/EU Standard IEC 61800-3:2017 IEC61800-5-2:2016

  Machinery Directive 2006/42/EC (Safety Functions) Standard IEC 61800-5-2
- Safety standard

Safety standard	Reference
Functional safety	IEC 61508: 2010 ISO 13849-1: 2015 ISO 13849-2: 2012 IEC 62061: 2021 EN 61508: 2010 EN ISO 13849-1: 2015 EN ISO 13849-2: 2012 EN IEC 62061: 2021 IEC 60204-1: 2016 (in extracts) EN 60204-1: 2018 (in extracts)
EMC	IEC 61800-5-2: 2016 IEC 61800-3: 2017 IEC 61326-3-1: 2017 IEC 61000-6-7: 2014 EN 61800-5-2: 2017 EN IEC 61800-3: 2018 EN 61326-3-1: 2017 EN 61000-6-7:2015
LVD	IEC 61800-5-1:2007/AMD1:2016 EN 61800-5-1:2007/A1:2017

- Safety data

Item	Safety data
SIL	SIL3, IEC61508 Maximum SIL3, EN IEC62061
PFH_D	$PFH_D \leqslant 1.1\times10^{-9}$[1/h] (1.1% of SIL3)
Cat.	3, EN ISO 13849-1
PL	e, EN ISO 13849-1
MTTFd	904 years (high)
DCavg	⩾90% (medium)
T_1	20 years
HFT	1
SC	SC3
λ_S	2.5×10^{-7}/h
λ_{DD}	1.3×10^{-7}/h
λ_{DU}	2.0×10^{-9}/h
MTTR	0 hour
MRT	0 hour
Application mode	High demand or continuous mode
Device type	Type B

λ_S means the failure rate of safe failure which brings the system into safe state.

λ_{DD} means the failure rate of dangerous failure but can be diagnosed by the diagnosis subsystem.

λ_{DU} means the failure rate of dangerous failure and can't be diagnosed by the diagnosis subsystem.

Note

- See ISO13849-2: 2012 for failure modes of devices.
- Failure sharing of different failure modes of each device.
- See SN29500 for failure rate of each device.

Specifications

- Electrical safety according to IEC 61800-5-1:2016, overvoltage category II
- Environment test requirement according to IEC 61800-5-1:2016
- Operating conditions are shown as follows.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Ambient/Storage temperature</td><td>0 to 55℃/-20℃ to +70℃</td></tr>
<tr><td>Ambient/Storage humidity</td><td>20%–95% RH (no condensation)</td></tr>
<tr><td>Vibration</td><td>
<table>
<tr><th>Item</th><th>Test Condition</th></tr>
<tr><td>Test reference</td><td>See IEC 60068-2-6 4.6</td></tr>
<tr><td>Condition</td><td>EUT is powered on and works normally.</td></tr>
<tr><td>Motion mode</td><td>Sinusoidal</td></tr>
<tr><td>Vibration amplitude/ Acceleration rate</td><td>-</td></tr>
<tr><td>10 Hz ⩽ f ⩽ 57 Hz</td><td>0.075 mm amplitude</td></tr>
<tr><td>57 Hz < f ⩽ 150 Hz</td><td>1 kg</td></tr>
<tr><td>Vibration duration</td><td>10 times on each of the three mutually perpendicular axes</td></tr>
<tr><td>Axis</td><td>X, Y, Z</td></tr>
<tr><td>Installation</td><td>According to the manufacturer's specifications</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Shock resistance</td><td>
<table>
<tr><th>Item</th><th>Test Condition</th></tr>
<tr><td>Test reference</td><td>See IEC 60068-2-27: 2008 Table 17</td></tr>
<tr><td>Condition</td><td>EUT is powered on and works normally.</td></tr>
<tr><td>Motion mode</td><td>Half-sine pulse</td></tr>
<tr><td>Shock amplitude/ Time</td><td>50 m/s^2 (5 g) 30 ms</td></tr>
<tr><td>Number of shocks</td><td>3 per axis on each of three mutually perpendicular axes</td></tr>
<tr><td>Axis</td><td>±X, ±Y, ±Z</td></tr>
<tr><td>Installation</td><td>According to the manufacturer's specifications</td></tr>
</table>
</td></tr>
<tr><td>IP rating</td><td>IP20</td></tr>
<tr><td>Pollution degree (PD)</td><td>PD2: free of corrosive or explosive gases; free of exposure to water, oil or chemicals; free of dust, salts or iron dust</td></tr>
<tr><td>Altitude</td><td>2000 m or below</td></tr>
<tr><td>Cooling method</td><td>Dry clean air (natural convection)</td></tr>
<tr><td>Others</td><td>Free of static electricity, strong electromagnetic fields, magnetic fields, or exposure to radioactivity</td></tr>
</table>

- The drive complies with EMC standards EN/IEC 61800-3:2017, IEC 61326-3-1, and IEC 61800-5-2
- Others

Item	Description
Applicable servo drives	SV660FS1R6I-FS SV660FS2R8I-FS SV660FS5R5I-FS SV660FS7R6I-FS SV660FS012I-FS SV660FT3R5I-FS SV660FT5R4I-FS SV660FT8R4I-FS SV660FT012I-FS SV660FT017I-FS SV660FT021I-FS SV660FT026I-FS
Position	Integrated on the control board of the drive
Safety function - Inputs	Two channels: STO1/STO2

The STO subsystem elements must always be able to operate within the range of temperature, humidity, corrosion, dust, and vibration and other requirements specified above.

4.1.3 Precautions for Use

General Safety Instructions

The chapter contains the warning symbols used in this manual and the safety instructions which you must obey when you install or connect an option module to a drive or inverter. If you ignore the safety instructions, injury, death or damage can occur. Read this chapter before you start the installation.

Any illustrations, photographs, or examples used in this manual are provided as examples only and may not apply to all products to which this manual is applicable.

The products and specifications described in this manual or the content and presentation of the manual may be changed without notice to improve the product and/or the manual.

Table 4–1 Warnings, Cautions and Notes

Pictogram	Signal word	Meaning	Consequences in case of disregard
Example: DANGER Hazardous voltage e.g. electric shock	DANGER	DANGER	Indicates that failure to comply with the notice will result in death or severe personal injuries
	WARNINGS	Warning	Indicates that failure to comply with the notice may result in death or severe personal injuries
	CAUTION	Note	Indicates that failure to comply with the notice may result in minor or moderate personal injuries or equipment damage
	STOP	Prohibit	Indicates that failure to comply with the notice will result in equipment or environmental damage

- High attention is required for electrical installation and at the system design to avoid hazards either in normal operation or in the event of equipment malfunction.
- System design, installation, commissioning and maintenance must be carried out by personnel who have the necessary training and experience. They must read the operating instruction and this safety information.

It is the responsibility of the machine builder/OEM/system integrator to make sure that the essential health and safety function requirements specified in the Machinery Directive are met. Risk analysis and risk assessment is needed before using a product. Make sure that adequate measures are taken to eliminate/reduce the relating risks and components chosen must meet the safety requirements.

This section describes the information that needs to be noted before starting operation. Read the following safety precautions, risk assessment information, and limitations before starting operation.

Safety function: Use the safety function after properly understanding all of these information. Incorrect use of safety functions or use of safety functions that are not sufficient to meet the safety requirements of the site may result in personal injury.

Safety Precautions

Carefully read the following important precautions and observe them when using the safety function.

- STO function is not intended as a replacement for the emergency stop function (E-stop). If only the STO function is triggered, with no extra measures taken, the power supply cannot be cut off in emergencies and high-current parts of the motor and drive are still energized, incurring the risk of electric shock or other risks result in electric energy. Therefore maintenance work on electrical parts of the drive or motor can only be carried out after isolating the drive system from the main supply.
- Depending on the standards and requirements for a particular application, it may be possible to use STO as an integral part of an E-stop system. However, its main purpose is for use in a dedicated safety control arrangement whose purpose is to prevent any hazard from occurring, without the use of an E-stop.
- An E-stop is often provided in a machine to allow for unexpected situations where an operator sees a hazard and can take action to prevent an accident.
- The design requirement for an E-stop differs from that of a safety interlock. Generally, the E-stop is required to be independent from any complex or "intelligent" control. It may use purely electromechanical devices to either disconnect the power or initiate a controlled rapid stop using other means such as dynamic or regenerative braking.

Note

- The design of safety-related systems requires specialist knowledge. To ensure that a complete control system is safe, it is necessary for the whole system to be designed according to recognized safety principles. The use of individual sub-systems such as drives with STO function, which are intended for safety-related applications, does not in itself ensure that the complete system is safe.
- The STO function can be used to stop the drive in emergency stop situations.
- In processes without personnel protection, it is recommended not to stop the drive by using the STO function. If a drive running is stopped by using STO, the drive performs a coast-to-stop. If this is not acceptable, the system should be stopped using the correct mode instead of the STO function.
- This publication is a guide to the application of Inovance SV660 series safety functions, and also on the design of safety-related systems for machinery control.
- It is the responsibility of the designer of the end product or application to ensure that it is safe and in compliance with the relevant regulations.

Risk Assessment

- When using the safety functions, perform risk assessment on the servo system in advance. Make sure that the safety integrity level of the standards is met.
- The following residual risks can be present even when the safety functions operate. Therefore, safety must always be given consideration during risk assessment.
- If external forces (such as gravitational force with a vertical axis) are applied when the safety functions are operating, the motor will rotate due to the action of these external forces. Therefore, you must use a separate mechanical brake to secure the motor.

Note

- In the case of failure of multiple IGBTs, regardless of whether the STO function is enabled, the servo drive can generate an alignment torque. This torque can cause the motor shaft to rotate within a range of up to 180÷p (for a synchronous reluctance motor, the range is 180÷2p).
- p: Number of motor pole pairs.

To ensure safety, users should decide all the risk assessments and residual risks in the entire machine equipment. A company and individual who constructed the safety related system must take full responsibility for installation and commissioning of the system. Additionally, when complying with a European machinery directive, the related sub system must acquire safety standards certification, and the whole equipment or system is subject to all risk assessments and safety class certification. It

is recommended that a Certification Body final safety certification of the system be used.

The following shows residual risks concerning the safety function of this product.

Common residual risks

- At the shipment to end-users, check the settings of safety related components with programming tools and monitored/displayed contents on display and record and save the setting data concerning the safety observation function and the programming tools you used. Perform them using a check sheet, etc.
- The safety will not be ensured such as in assembling machine until installing, wiring, and adjustment are completed properly. Install, wire, and adjust your system referring to installation guide for each unit.
- Only qualified personnel are authorized to install, start-up, repair or adjust the machines in which these components are installed. Only trained engineers should install and operate the equipment.
- Separate the wiring for safety observation function from other signal wiring.
- Protect the cables with appropriate ways (routing them in a cabinet, using a cable guard, etc.).
- We recommend using a switch, relay, sensor, etc. which comply with safety standards. When using a switch, relay, sensor, etc. which do not comply with safety standards, perform a safety confirmation.
- Keep the required clearance/creepage distance depending on voltage you use.
- The time to a safety observation error depends on parameter settings.

Safe torque off (STO)

This function only cuts off the torque of the motor, and does not cut off the power supply of the servo/inverter. Before servicing the servo/inverter, cut off the power supply and ensure that the servo/inverter are not energized.

4.2 Safety Function

4.2.1 Overview

Figure 4-1 Schematics of the STO function

Safe Torque Off (STO) is a safety function that complies with IEC 61800-5-2:2016. It is built into Inovance SV660F series servo drives.

The STO function inhibits the control signal of the power semiconductors on the drive output end, preventing the drive from generating torque at the motor shaft end.

The STO function prevents movement of the motor by two redundant external hardware signals (STO1 and STO2) that block the PWM signals from being outputted

to the power layer of the servo drive. STO1 and STO2 input signals must be both active to allow the servo drive to operate normally.

See the following table for the STO function.

STO1 input	STO2 input	PWM signal
H	H	Normal
L	H	Inhibited
H	L	Inhibited
L	L	Inhibited

STO (safe torque)	
Description	Cuts off the power of the motor.
Description	The safe torque off (STO) function brings the machine safely into a no-torque state and prevents it from unexpected start. If the motor is running when STO function is activated, it coasts to stop.
Safe state	Disables the PWM gating signal of the drive.
Operating mode	High demand mode or continuous mode

4.2.2 Function Use and Monitoring

Function Use

The keypad displays the STO function state and error information.

See the following table to identify the cause of a fault and the action to be taken. Contact Inovance technical support if the fault persists after corrective actions listed in the following table are taken.

Fault codes related to the STO function are listed in the following table:

Fault Code	State	Description	Cause	Corrective Action
E150.1	Status of STO1 and STO2 inconsistent	Only one of STO1 and STO2 is in "Low" state, status of STO1 and STO2 are inconsistent.	The input states of STO1 and STO2 are inconsistent.	1. Ensure the requests for disconnecting the voltage of STO1 and STO2 are triggered simultaneously. 2. The input circuit is abnormal and a certain STO input signal is still in the"H" state after the 24 V signal is disconnected. Contact Inovance for technical support.
E150.2	STO activated	OV/UV of the 5V power supply is detected.	OV/UV of the 5V power supply.	Restore the 5 V power supply to normal state. Contact Inovance for technical support.

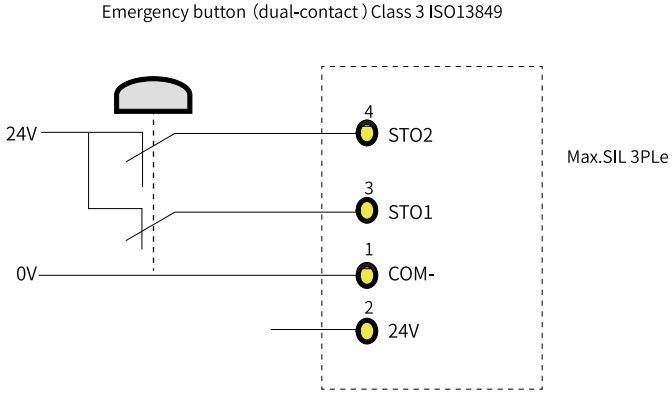
Fault Code	State	Description	Cause	Corrective Action
E150.3	STO activated	The input circuit of STO works improperly.	The input circuit of STO works improperly.	Fix the input circuit fault. Contact Inovance for technical support.
E150.4	STO activated	The buffer circuit of STO works improperly.	The buffer circuit of STO works improperly.	Fix the buffer circuit fault. Contact Inovance for technical support.

Note

- For a motor with brake, if either STO1 or STO2 closes, the drive will be disabled within 30 ms (STO response time).
- For a motor without brake, if either STO1 or STO2 closes, the drive will be disabled within 5 ms (STO response time).

Application Example of Safety Function

Example 1:



4.2.3 Fault Reset

The exceptional operation refers to the durations of power-on and initialization, and how to return from the STO state.

- The PWM buffer is disabled as the enable terminal is pulled up during power-on, so the PWM signal is inhibited.
- The PWM buffer is disabled as the enable terminal is pulled up during initialization of the MCU, so the PWM signal is inhibited. Such condition is cleared and servo drive works normally after initialization is done.

- When all of the following conditions are met, the servo system that enters the safe state through the STO function can be back to normal with the safe state cleared after auto-reset of the drive.
  - The input state of the STO request must be "high".
  - The servo ON or servo RUN command must be inactive.
  - No dangerous faults exist.

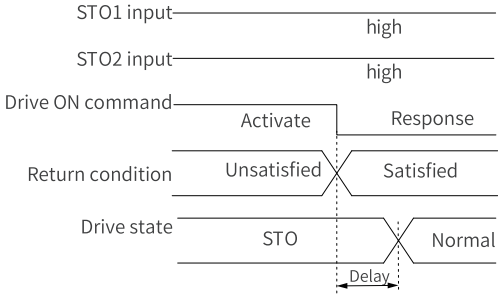


Figure 4-2 Return condition of servo ON/RUN command

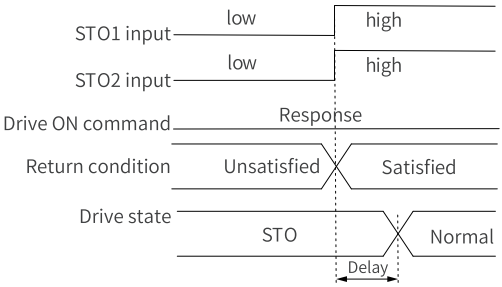


Figure 4-3 Return condition of external STO request state

  - When STO_IN (STO1 or STO2 input) is restored to 24 V, the EDM and servo ready signals are immediately reset to 0. After 400 milliseconds, the servo operation signal is activated (when STO_IN keeps at 24 V). Servo operation is PWM drive signal output.

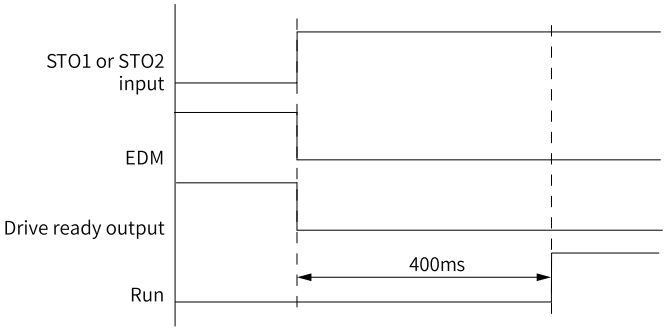
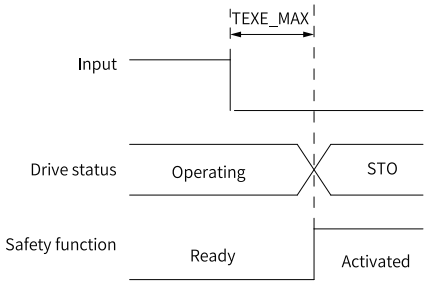


Figure 4-4 Servo drive reset timing diagram

4.2.4 Safety Function Response Time

The STO function prevents movement of the motor by two redundant external hardware signals (STO1 and STO2) that block the PWM signals from being outputted to the power layer of the servo drive. STO1 and STO2 input signals must be both active to allow the servo drive to operate normally.

If either one or both signals are set to "Low" level, the PWM signals will be blocked within 30 ms.



Note

[1]: The typical response time is 30 ms. The maximum response time is 100 ms, given the discrete type of the electronic device.

4.3 Commissioning, Operation, and Maintenance Requirements

Basic requirements

- Technical staff must be trained to understand the requirements and principles of designing and operating safety-related systems.

- Person performing the maintenance must be trained to understand the requirements and principles of designing and operating safety-related systems.
- Operators must be trained to understand the requirements and principles of designing and operating safety-related systems.
- The safety-related circuit on the control board that fails to operate must be replaced with a new one as it is not repairable.

Commissioning Checklist

- Start-up test and validation
  IEC 61508, EN/IEC 62061 and EN ISO 13849 require the final assembler of the equipment to verify the operation of the safety function through acceptance testing. This acceptance test is described in the drive manual. The testing of optional safety features is described in the corresponding manuals.

  The acceptance test must be performed:

  - at initial start-up of the safety function
  - after any changes related to the safety function (wiring, components, settings and so on).
  - after any maintenance work related to the safety function.

  The acceptance test of the safety function must be carried out by an authorized person with expertise and knowledge of the safety function. The test must be documented and signed by the test staff.

  Signed acceptance test reports must be stored in the logbook of the machine. The report shall include documentation of start-up activities and test results, references to failure reports and resolution of failures. Any new acceptance tests performed due to changes or maintenance need to be logged into the logbook.

- Checklist

Step	Action	Result
1	Ensure that the drive runs and stops freely during commissioning.	
2	Stop the drive (if running), switch the input power supply off and isolate the drive from the power line by a disconnector.	
3	Check the STO circuit connections based on the circuit diagram.	
4	Check that the shield of the STO input cable is grounded to the drive frame.	
5	Close the disconnector and switch the power supply on.	

Step	Action	Result
5.1	Test the STO signal #1 when the motor stops: Set STO1 and STO2 to "H". Send a stop command to the drive (if running) and wait until the motor shaft is at standstill. Awake the STO function by de-energizing (low state or open-circuit) the STO input signal #1 and send a start command to the drive. Ensure that the motor stays at a standstill and the keypad of the drive displays "E150.1".	
5.2	Set STO1 to "H" and disable the ON/RUN command of the drive. Then, reset the drive automatically and enable ON/RUN command of the drive. Finally, check whether the motor runs normally.	
5.3	Test the STO signal #2 when the motor stops: Set STO1 and STO2 to "H". Send a stop command to the drive (if running) and wait until the motor shaft is at standstill. Awake the STO function by de-energizing (low state or open-circuit) the STO input signal 2 and send a start command to the drive. Ensure that the motor stays at a standstill and the keypad of the drive displays "E150.1".	
5.4	Set STO2 to "H" and disable the ON/RUN command of the drive. Then, reset the drive automatically and enable ON/RUN command of the drive. Finally, check whether the motor runs normally.	
6.1	Test the STO channel 1 when the motor is running: Set STO1 and STO2 to "H". Start the drive and ensure the motor is running. Awake the STO function by de-energizing (low state or open-circuit) the STO input signal 1. Ensure that the motor stops and the drive trips. Reset the fault and try to start the drive. Ensure that the motor stays at a standstill and the keypad of the drive displays "E150.1".	
6.2	Set STO1 to "H" and disable the ON/RUN command of the drive. Then, reset the drive automatically and enable ON/RUN command of the drive. Finally, check whether the motor runs normally.	
6.3	Test the STO channel 2 when the motor is running: Set STO1 and STO2 to "H". Start the drive and ensure the motor is running. Awake the STO function by de-energizing (low state or open-circuit) the STO input signal 2. Ensure that the motor stops and the drive trips. Reset the fault and try to start the drive. Ensure that the motor stays at a standstill and the keypad of the drive displays "E150.1".	

Step	Action	Result
6.4	Set STO2 to "H" and disable the ON/RUN command of the drive. Then, reset the drive automatically and enable ON/RUN command of the drive. Finally, check whether the motor runs normally.	
7	Document and sign the acceptance test report which verifies that the safety function is safe and acceptable for operation.	

Special requirements

You must conduct STO diagnosis every three month by powering off and powering on the drive once, or running the STO function once.

4.4 Troubleshooting

See the following table to identify the cause of a fault and the action to be taken. Contact Inovance technical support if the fault persists after corrective actions listed in the following table are taken. Fault codes related to the STO function are listed in the following table.

Error Code	Cause	Corrective Action
E150.1	The input states of STO1 and STO2 are inconsistent.	1. Ensure the requests for disconnecting the voltage of STO1 and STO2 are triggered simultaneously. 2. The input circuit is abnormal and a certain STO input signal is still in the "High" state after the 24 V signal is disconnected. Contact Inovance for technical support.
E150.2	OV/UV of the 5V power supply is detected.	Restore the 5 V power supply to normal state. Contact Inovance for technical support.
E150.3	The input circuit of STO works improperly.	Fix the input circuit fault. Contact Inovance for technical support.
E150.4	The buffer circuit of STO works improperly.	Fix the buffer circuit fault. Contact Inovance for technical support.

5 Description of Parameters

5.1 H00 Servo Motor Parameters

H00.00 Motor SN

Address:	0x0000	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	14101	Change:	At stop

Value Range:

0 to 65535

Description

Defines the code of the servo motor. Fixed to 14XXX. Setting the motor code to a wrong value will result in E120.0 (Unknown motor model).

H00.02 Customized No.

Address:	0x0002	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	4294967295.00	Data Type:	UInt32
Default:	0.00	Change:	Unchangeable

Value Range:

0.00 to 4294967295.00

Description

Displays customized software code in hexadecimal.

The display format is: XXX.YY.

XXX: Fixed No. for customized software

YY: Upgrade record No. for customized software

H00.04 Encoder version

Address:	0x0004	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 to 6553.5

Description

Displays the software version number of the encoder.

The display format is 2XXX.Y.

H00.05 Serial-type motor code

Address:	0x0005	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

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

H00.06 FPGA customized SN

Address:	0x0006	Effective mode:	-
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	0.00	Change:	Unchangeable

Value Range:

0.00 to 655.35

Description

-

H00.07 STO version

Address:	0x0007	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 to 6553.5

Description

-

H00.08 Bus encoder type

Address:	0x0008	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 to 65535

Description

-

5.2 H01 Servo Drive Parameters

H01.00 **MCU software version**

Address:	0x0100	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 to 6553.5

Description

Displays the MCU software version.

The display format is XXXX.Y, with one decimal place.

H01.01 **FPGA software version**

Address:	0x0101	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 to 6553.5

Description

It displays the FPGA firmware version.

The display format is XXXX.Y, with one decimal place.

H01.02 **Servo drive series No.**

Address:	0x0102	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H01.08 Model parameter version 1

Address:	0x0108	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0 to 6553.5

Description

-

H01.09 Model parameter version 2

Address:	0x0109	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H01.10 Drive series No.

Address:	0x010A	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
60005: S6R6
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

Defines the servo drive model.

Drive models are listed in the following table. If the voltage input to the main circuit of the servo drive does not comply with the preceding specifications, E420.0 (Main circuit phase loss) occurs.

The main circuit of the servo drive supports single-phase 220 V power supplies without derating.

H01.11 DC-AC voltage class

Address:	0x010B	Effective mode:	-
Min.:	0	Unit:	V
Max.:	65535	Data Type:	UInt16
Default:	220	Change:	Unchangeable

Value Range:

0V to 65535V

Description

-

H01.12 Drive rated power

Address:	0x010C	Effective mode:	-
Min.:	0.00	Unit:	kW
Max.:	10737418.24	Data type:	UInt32
Default:	0.40	Change:	Unchangeable

Value Range:

0.00 kW–10737418.24 kW

Description

-

H01.14 Max. output power of the drive

Address:	0x010E	Effective mode:	-
Min.:	0.00	Unit:	kW
Max.:	10737418.24	Data type:	UInt32
Default:	0.40	Change:	Unchangeable

Value Range:

0.00 kW–10737418.24 kW

Description

-

H01.16 Rated output current of the drive

Address:	0x0110	Effective mode:	-
Min.:	0.00	Unit:	A
Max.:	10737418.24	Data Type:	UInt32
Default:	2.80	Change:	Unchangeable

Value Range:

0.00A to 10737418.24A

Description

-

H01.18 Max. output current of the drive

Address:	0x0112	Effective mode:	-
Min.:	0.00	Unit:	A
Max.:	10737418.24	Data Type:	UInt32
Default:	10.10	Change:	Unchangeable

Value Range:

0.00A to 10737418.24A

Description

-

H01.40 DC bus overvoltage protection threshold

Address:	0x0128	Effective mode:	-
Min.:	0	Unit:	V

Max.:	2000	Data Type:	UInt16
Default:	420	Change:	Immediately

Value Range:
0V to 2000V
Description
-

H01.75 Current loop amplification factor

Address:	0x014B	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	655.35	Data Type:	UInt16
Default:	1.00	Change:	Immediately

Value Range:
0.00 to 655.35
Description
-

H01.88 Junction temperature parameter version 1

Address:	0x0158	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0 to 6553.5
Description
-

H01.89 Junction temperature parameter version 2

Address:	0x0159	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

5.3 H02 Basic Control Parameters

H02.00 Control mode

Address:	0x0200	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	11	Data Type:	UInt16
Default:	11	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
11: PN communication mode

Description

Defines the control mode of the servo drive.

H02.01 Absolute system selection

Address:	0x0201	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	5	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 warning)
4: Absolute position single-turn mode
5: Absolute position rotational mode, modal axis single modal revolution absolute command

Description

Defines the mode of the absolute system.

H02.02 Rotation direction selection

Address:	0x0202	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16

Default: 0 Change: At stop

Value Range:

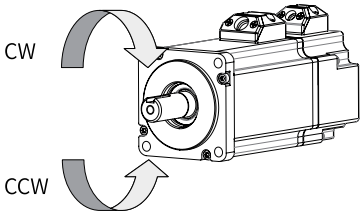
0: Counterclockwise (CCW) as forward direction

1: Clockwise (CW) as forward direction

Description

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

Setpoint	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

Address: 0x0203 Effective mode: Upon the next power-on

Min.: 0 Unit: -

Max.: 1 Data Type: UInt16

Default: 0 Change: At stop

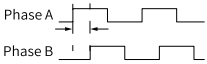
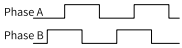
Value Range:

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.

Setpoint	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

Address:	0x0205	Effective mode:	At stop
Min.:	-5	Unit:	-
Max.:	3	Data Type:	Int16
Default:	3	Change:	Real-time

Value Range:

-5: Stop in PN communication state (ramp-to-stop/quick stop/coast-to-stop), keeping dynamic braking state
-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
3: Stop in PN communication state (ramp-to-stop/quick stop/coast-to-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.

Set a proper stop mode according to the mechanical status and operation requirements.

H02.06 Stop mode at No.2 fault

Address:	0x0206	Effective mode:	At stop
Min.:	-5	Unit:	-
Max.:	3	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 motor for stopping rotating upon occurrence of a No. 2 fault and the motor status after stop.
After the brake (BK) output function is enabled, the stop mode at No. 2 fault is forcibly set to "Ramp to stop as defined by 6085h, keeping dynamic braking status".

H02.07 Stop mode at overtravel

Address:	0x0207	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	8	Change:	Real-time

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 motor for stopping rotating upon overtravel and the motor status after stop.

When the servo motor drives vertical axis, your setting must make the motor axis in position locking state after the limit switch signal is active to ensure safety.

H02.08 Stop mode at No.1 fault

Address:	0x0208	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	2	Change:	Real-time

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 motor for stopping rotating when a No. 1 fault occurs and the motor status after stop.

For details on No. 1 faults, see the Troubleshooting Guide.

H02.09 Delay from brake output ON to command received

Address:	0x0209	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	500	Data Type:	UInt16
Default:	250	Change:	Real-time

Value Range:

0 ms to 500 ms

Description

Defines the delay from the moment the brake (BK) 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

Address:	0x020A	Effective mode:	Real time
Min.:	50	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	150	Change:	Real-time

Value Range:

50 ms to 1000 ms

Description

Defines the delay from the moment brake (BK) 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

Address:	0x020B	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 rotation state.

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

Address:	0x020C	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	500	Change:	Real-time

Value Range:

1 ms to 65535 ms

Description

Defines the delay from the moment the S-ON signal is OFF to the moment the brake (BK) output is OFF in the rotation state.

H02.15 LED warning display

Address:	0x020F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Output warning information immediately

1: Not output warning information

Description

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

For details on No. 3 Warnings, see the Troubleshooting Guide.

H02.17 Stop mode upon main circuit power failure

Address:	0x0211	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 H0206

2: Stop at S-ON OFF as defined by H0205

3: Stop quickly as defined by H0218

Description

-

H02.18 DI emergency stop mode selection

Address:	0x0212	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0: Coast to stop, keeping de-energized state

1: Ramp 1 stop, keeping de-energized state

2: Ramp 2 stop, keeping de-energized stat

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

Description

-

H02.21 Permissible minimum resistance of regenerative resistor

Address:	0x0215	Effective mode:	-
Min.:	1	Unit:	Ω
Max.:	1000	Data Type:	UInt16
Default:	40	Change:	Unchangeable

Value Range:

1Ω to 1000 Ω

Description

The permissible minimum resistance of the regenerative resistor is only related to the servo drive model.

H02.22 Power of built-in regenerative resistor

Address:	0x0216	Effective mode:	-
Min.:	0	Unit:	W
Max.:	65535	Data Type:	UInt16
Default:	50	Change:	Unchangeable

Value Range:

0 W–65535 W

Description

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

H02.23 Resistance of built-in regenerative resistor

Address:	0x0217	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.

The built-in braking resistor comes into rescue when the maximum braking energy calculated exceeds the absorption capacity of the capacitor.

When using the built-in braking resistor, connect a jumper bar between terminals P and D. When H01-02 (servo drive No.) = 2 or 3, there is no built-in braking resistor.

Table 5–1 Specifications of the regenerative resistor

Servo Drive Model	Specifications of Built-in Regenerative Resistor		External regenerative resistor Min. Allowable Resistance (Ω) (H02.21)
	Resistance (Ω)	Power (Pr) (W)	
SV660FS1R6I	-	-	50
SV660FS2R8I	-	-	45
SV660FS5R5I	50	50	40
SV660FS7R6I	25	80	20
SV660FS012I			15
SV660FT3R5I	100	80	80
SV660FT5R4I	100	80	60
SV660FT8R4I	50	80	45
SV660FT012I			40
SV660FT017I	35	100	35
SV660FT021I			25
SV660FT026I			

H02.24 Resistor heat dissipation coefficient

Address:	0x0218	Effective mode:	Real time
Min.:	10	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

10%–100%

Description

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

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

Recommendations:

- Generally, the coefficient cannot exceed 30% for natural cooling.
- It cannot exceed 50% for forced air cooling.

H02.25 Regenerative resistor type

Address:	0x0219	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 regenerative resistor type and the mode of absorbing and releasing the braking energy.

H02.26 Power of external regenerative resistor

Address:	0x021A	Effective mode:	Real time
Min.:	1	Unit:	W
Max.:	65535	Data Type:	UInt16
Default:	40	Change:	Real-time

Value Range:

1 W–65535 W

Description

Defines the power of the external braking resistor.

Note: The value of this parameter cannot be lower than the calculated braking power.

H02.27 Resistance of external regenerative resistor

Address:	0x021B	Effective mode:	Real time
Min.:	15	Unit:	Ω
Max.:	1000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

15 Ω to 1000 Ω

Description

Defines the power of the external braking resistor.

Note: The value of this parameter cannot be lower than the calculated braking power.

H02.30 User password

Address:	0x021E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H02.31 System parameter initialization

Address:	0x021F	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.
If necessary, use Inovance software tool to back up parameters except those in groups 2000h and 2001h.

H02.32 Selection of parameters in group H0b

Address:	0x0220	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	50	Change:	Immediately

Value Range:
0 to 99
Description
-

H02.33 200P software version

Address:	0x0221	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	65535.0	Data Type:	UInt16

Default: 0.0 Change: Unchangeable

Value Range:

0.0 to 65535.0

Description

-

H02.35 Keypad data update frequency

Address:	0x0223	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 Hz to 20 Hz

Description

-

H02.41 Manufacturer password

Address:	0x0229	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 65535

Description

-

5.4 H03 Terminal Input Parameters

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

Address:	0x0300	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

-

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

Address:	0x0301	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

-

H03.02 DI1 function

Address:	0x0302	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	14	Change:	Real-time

Value Range:

0: Undefined
1: S-ON
3: Gain switchover
14: Forward overtravel switch
15: Reverse overtravel switch
16: Positive external torque limit
17: Negative external torque limit
18: Forward jog
19: Reverse jog
31: Home switch
32: Homing enabled
34: Emergency stop
36: Internal speed limit source
38: Probe 1
39: Probe 2
41: Current position as home
56: EPOS program block external toggle switch

Description

Defines the function of DI1.

H03.03 DI1 logic selection

Address:	0x0303	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Active low
1: Active high

Description

Used to set the level logic of DI1 when the function assigned to DI1 is active.
DI1 to DI4 are normal DIs, requiring the input signal width to be larger than 1 ms. Set active level logic correctly according to the host controller and peripheral circuits. The width of the input signal is shown in the following table for your reference.

H03.04 DI2 function selection

Address:	0x0304	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	15	Change:	Immediately

Value Range:
Same as H03.02.
Description
-

H03.05 DI2 logic selection

Address:	0x0305	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Active low
1: Active high
Description
-

H03.06 DI3 function

Address:	0x0306	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	31	Change:	Immediately

Value Range:
Same as H03.02.
Description
-

H03.07 DI3 logic selection

Address:	0x0307	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Active low
1: Active high
Description
-

H03.08 DI4 function

Address:	0x0308	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	34	Change:	Immediately

Value Range:

Same as H03.02.

Description

-

H03.09 DI4 logic selection

Address:	0x0309	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Active low

1: Active high

Description

-

H03.10 DI5 function

Address:	0x030A	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	38	Change:	Immediately

Value Range:

Same as H03.02.

Description

-

H03.11 DI5 logic selection

Address:	0x030B	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Active low
1: Active high
Description
-

H03.12 DI6 function

Address:	0x030C	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	45	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H03.02
Description
-

H03.13 DI6 logic selection

Address:	0x030D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Active low
1: Active high
Description
-

H03.14 DI7 function

Address:	0x030E	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	45	Data Type:	UInt16
Default:	45	Change:	Immediately

Value Range:
Same as H03.02
Description
-

H03.15 DI7 logic selection

Address:	0x030F	Effective mode:	Real time

Min.: 0 Unit: -
Max.: 1 Data Type: UInt16
Default: 0 Change: Immediately

Value Range:

0: Active low

1: Active high

Description

-

H03.16 DI8 function

Address: 0x0310 Effective mode: At stop
Min.: 0 Unit: -
Max.: 45 Data Type: UInt16
Default: 31 Change: Immediately

Value Range:

Same as H03.02

Description

-

H03.17 DI8 logic selection

Address: 0x0311 Effective mode: At stop
Min.: 0 Unit: -
Max.: 1 Data Type: UInt16
Default: 0 Change: Immediately

Value Range:

0: Active low

1: Active high

Description

-

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

Address: 0x0322 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.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

-

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

Address:	0x0323	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

-

H03.51 Current-type AI1 input filter time constant

Address:	0x0333	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	Immediately

Value Range:

0.00ms to 655.35ms

Description

-

H03.55 Voltage-type AI2 offset

Address:	0x0337	Effective mode:	Real time
Min.:	-5000	Unit:	mV
Max.:	5000	Data Type:	Int16
Default:	0	Change:	Immediately

Value Range:

-5000mV to 5000mV

Description

-

H03.56 Voltage-type AI2 input filter time constant

Address:	0x0338	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	655.35	Data Type:	UInt16
Default:	2.00	Change:	Immediately

Value Range:
0.00ms to 655.35ms
Description
-

H03.58 Voltage-type AI2 dead zone

Address:	0x033A	Effective mode:	Real time
Min.:	0.0	Unit:	mV
Max.:	1000.0	Data Type:	UInt16
Default:	10.0	Change:	Immediately

Value Range:
0.0mV to 1000.0mV
Description
-

H03.59 Voltage-type AI2 zero drift

Address:	0x033B	Effective mode:	Real time
Min.:	-500	Unit:	mV
Max.:	500.0	Data Type:	Int16
Default:	0.0	Change:	Immediately

Value Range:
-500mV to 500.0mV
Description
-

H03.60 DI1 filter time

Address:	0x033C	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data Type:	UInt16
Default:	3.00	Change:	Immediately

Value Range:
0.00ms to 500.00ms

Description

-

H03.61 **DI2 fitter time**

Address:	0x033D	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	3.00	Change:	Immediately

Value Range:

0.00ms to 500.00ms

Description

-

H03.62 **DI3 fitter time**

Address:	0x033E	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	3.00	Change:	Immediately

Value Range:

0.00ms to 500.00ms

Description

-

H03.63 **DI4 fitter time**

Address:	0x033F	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	3.00	Change:	Immediately

Value Range:

0.00ms to 500.00ms

Description

-

H03.64 **DI5 fitter time**

Address:	0x0340	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	3.00	Change:	Immediately

Value Range:
0.00ms to 500.00ms
Description
-

H03.65 **DI6 fitter time**

Address:	0x0341	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	0.50	Change:	Immediately

Value Range:
0.00ms to 500.00ms
Description
-

H03.66 **DI7 fitter time**

Address:	0x0342	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	0.50	Change:	Immediately

Value Range:
0.00ms to 500.00ms
Description
-

H03.67 **DI8 fitter time**

Address:	0x0343	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	500.00	Data type:	UInt16
Default:	0.50	Change:	Immediately

Value Range:
0.00ms to 500.00ms
Description
-

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

Address:	0x0350	Effective mode:	Real time
Min.:	0	Unit:	1 RPM

Max.:	6000	Data type:	UInt16
Default:	3000	Change:	At stop

Value Range:

01 RPM–60001 RPM

Description

-

H03.81 Torque corresponding to analog 10 V

Address:	0x0351	Effective mode:	Real time
Min.:	1.00	Unit:	Multiplier
Max.:	8.00	Data type:	UInt16
Default:	1.00	Change:	At stop

Value Range:

1.00 to 8.00

Description

-

5.5 H04 Terminal Output Parameters

H04.00 DO1 function

Address:	0x0400	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

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
16: Homing completed
18: Torque reached signal
19: Speed reached signal
21: Enable completed
25: Comparison output
30: Warning or fault output
32: EDM output

Description

Defines the function of DO1.
Different VDOs can be assigned with the same function.
Descriptions for the setpoints are shown in the following table.

H04.01 DO1 logic selection

Address:	0x0401	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 DO1 is active.
DO1 to DO3 are normal DOs, requiring the minimum output signal width to be 1 ms.
The host controller must be able to receive valid DO logic changes.
Before receiving DO logic changes, check the setting of forced DI/DO selection to see whether the DO level is determined by the actual operating status of the drive or by forced DO.

H04.02 **DO2 function**

Address: 0x0402
Effective mode: Real time
Min.: 0
Unit: -
Max.: 65535
Data Type: UInt16
Default: 11
Change: Immediately

Value Range:

See H04.00.

Description

-

H04.03 **DO2 logic selection**

Address: 0x0403
Effective mode: Real time
Min.: 0
Unit: -
Max.: 1
Data Type: UInt16
Default: 0
Change: Immediately

Value Range:

0: Normally open
1: Closed

Description

-

H04.04 **DO3 function**

Address: 0x0404
Effective mode: Real time
Min.: 0
Unit: -
Max.: 65535
Data Type: UInt16
Default: 9
Change: Immediately

Value Range:

See H04.00.

Description

-

H04.05 **DO3 logic selection**

Address: 0x0405
Effective mode: Real time
Min.: 0
Unit: -
Max.: 1
Data Type: UInt16
Default: 0
Change: Immediately

Value Range:

0: Normally open
1: Closed
Description
-

H04.06 DO4 function

Address:	0x0406	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	11	Change:	Immediately

Value Range:
Same as H04.00
Description
-

H04.07 DO4 logic selection

Address:	0x0407	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

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

H04.08 DO5 function

Address:	0x0408	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	16	Change:	Immediately

Value Range:
Same as H04.00
Description
-

H04.09 DO5 logic selection

Address:	0x0409	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Normally open

1: Closed

Description

-

H04.22 DO source selection

Address:	0x0416	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

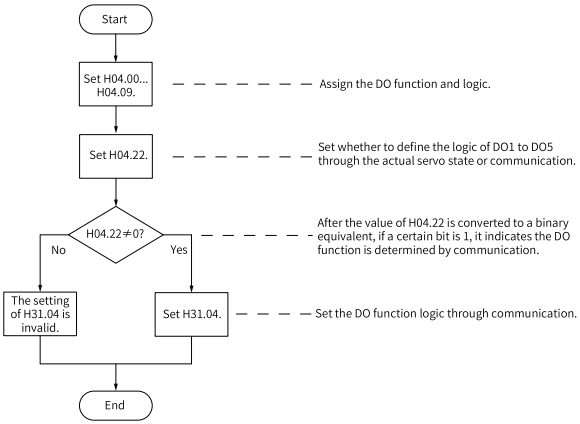
Defines whether the logic of a physical DO terminal is defined by the actual state of the drive or by communication.

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.



H04.50 AO1 signal selection

Address:	0x0432	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
9: AI2 voltage
10: Defined by H31.05

Description

-

H04.51 AO1 offset voltage

Address:	0x0433	Effective mode:	Real time
Min.:	-10000	Unit:	mV
Max.:	10000	Data Type:	Int16
Default:	5000	Change:	Immediately

Value Range:

-10000mV to 10000mV

Description

-

H04.52 AO1 ratio

Address:	0x0434	Effective mode:	Real time
Min.:	-99.99	Unit:	-
Max.:	99.99	Data Type:	Int16
Default:	1.00	Change:	Immediately

Value Range:

-99.99 to 99.99

Description

-

5.6 H05 Position Control Parameters

H05.00 Primary position reference source

Address:	0x0500	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16

Default:	0	Change:	Immediately

Value Range:

0: Pulse reference

1: Step reference

2: Multi-position reference

Description

-

H05.01 Position pulse reference input terminal

Address:	0x0501	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

-

H05.02 Pulses per revolution

Address:	0x0502	Effective mode:	Upon the next power-on
Min.:	0	Unit:	PPR
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:

0P/Rev–4294967295P/Rev

Description

-

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

Address:	0x0504	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 to 6553.5 ms

Description

-

H05.05 Step amount

Address:	0x0505	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
-

H05.06 Moving average filter time constant 1

Address:	0x0506	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 to 128.0ms
Description
-

H05.07 Electronic gear ratio 1 (numerator)

Address:	0x0507	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data type:	UInt32
Default:	8388608	Change:	Immediately

Value Range:
1 to 1073741824
Description
-

H05.09 Electronic gear ratio 1 (denominator)

Address:	0x0509	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data type:	UInt32
Default:	10000	Change:	Immediately

Value Range:
1 to 1073741824

Description

-

H05.11 Electronic gear ratio 2 (numerator)

Address:	0x050B	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data type:	UInt32
Default:	8388608	Change:	Immediately

Value Range:

1 to 1073741824

Description

-

H05.13 Electronic gear ratio 2 (denominator)

Address:	0x050D	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	1073741824	Data type:	UInt32
Default:	10000	Change:	Immediately

Value Range:

1 to 1073741824

Description

-

H05.15 Pulse reference form

Address:	0x050F	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

-

H05.16 Clear action

Address:	0x0510	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-OFF or non-operational state

1: Position deviation cleared upon S-OFF or fault

2: Position deviation cleared upon S-OFF or active DI function 35

Description

-

H05.17 Number of encoder frequency-division pulses

Address:	0x0511	Effective mode:	Upon the next power-on
Min.:	35	Unit:	PPR
Max.:	4194303	Data type:	UInt32
Default:	2500	Change:	At stop

Value Range:

35P/Rev–4194303P/Rev

Description

-

H05.19 Speed feedforward control

Address:	0x0513	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: PLC speed feedforward

Description

Defines the source of the speed loop feedforward signal.

In the position control mode, speed feedforward can be used to improve the position reference response speed.

Speed feedforward control parameters include speed feedforward filter time constant and speed feedforward gain. See section "Feedforward Gain" for details.

H05.20 Condition for positioning completed signal output

Address:	0x0514	Effective mode:	Real time

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

Value Range:

0: Absolute position deviation lower than the setpoint of H05.21
1: Absolute position deviation lower than the setpoint of H05.21 and the filtered position reference is 0
2: Absolute position deviation lower than the setpoint of H05.21 and the unfiltered position reference is 0
3: Absolute position deviation kept lower than the setpoint of H05.21 within the time defined by H05.60 and the unfiltered position reference is 0
4: Absolute value of position deviation lower than threshold, window time being active and filtered position reference being 0
5: Absolute value of position deviation lower than threshold, with zero speed signal being active and filtered position reference being 0
6: Absolute value of position deviation lower than threshold, with zero speed signal being active and filtered position reference being 0
7: COIN signal judged after the change (available→unavailable) of the position reference kept active for the defined window time, with filtered position reference being 0 and position deviation lower than threshold
8: COIN signal judged after the change (available→unavailable) of the filtered position reference kept active for the defined window time, with filtered position reference being 0 and position deviation lower than the threshold
9: COIN signal judged after the change (available→unavailable) of the position reference kept active for the defined window time, with filtered position reference being 0 and position deviation lower than the threshold
10: COIN signal judged after the change (available→unavailable) of the filtered position reference kept active for the defined window time, with filtered position reference being 0 and position deviation lower than threshold

Description

-

H05.21 Threshold of positioning completed

Address:	0x0515	Effective mode:	Real time
Min.:	1	Unit:	Encoder unit
Max.:	65535	Data Type:	UInt16
Default:	7	Change:	Immediately

Value Range:

1 to 65535

Description

-

H05.22 Proximity threshold

Address:	0x0516	Effective mode:	Real time
Min.:	1	Unit:	Encoder unit
Max.:	65535	Data type:	UInt16
Default:	65535	Change:	Immediately

Value Range:
1 to 65535
Description
-

H05.24 Interrupt positioning displacement

Address:	0x0518	Effective mode:	Real time
Min.:	0	Unit:	Reference unit
Max.:	1073741824	Data type:	UInt32
Default:	10000	Change:	Immediately

Value Range:
0 to 1073741824
Description
-

H05.26 Constant operating speed in interrupt positioning

Address:	0x051A	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	6000	Data Type:	UInt16
Default:	200	Change:	Immediately

Value Range:
0rpm–6000rpm
Description
-

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

Address:	0x051B	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:
0ms to 65535ms

Description

-

H05.29 Interruption fixed length unlock

Address:	0x051D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:

0: Disabled

1: Enabled

Description

-

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

Address:	0x0520	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	3000	Data type:	UInt16
Default:	100	Change:	Immediately

Value Range:

0 RPM–3000 RPM

Description

-

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

Address:	0x0521	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data type:	UInt16
Default:	10	Change:	Immediately

Value Range:

0rpm–1000rpm

Description

-

H05.34 Acceleration/Deceleration time during homing

Address:	0x0522	Effective mode:	Real time
Min.:	0	Unit:	ms

Max.:	1000	Data Type:	UInt16
Default:	1000	Change:	Immediately

Value Range:

0ms to 1000ms

Description

-

H05.35 Home search time limit

Address:	0x0523	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	Immediately

Value Range:

0ms to 65535ms

Description

-

H05.36 Mechanical home offset

Address:	0x0524	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

-

H05.38 Frequency-division output source

Address:	0x0526	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	2	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Encoder frequency-division output

1: Pulse reference synchronous output

2: Frequency-division output inhibited

3: Second encoder frequency-division output

Description

-

H05.39 Electronic gear ratio switchover condition

Address:	0x0527	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

-

H05.40 Mechanical home offset and action upon overtravel

Address:	0x0528	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

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

-

H05.41 Z pulse output polarity

Address:	0x0529	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

-

H05.43 Position pulse edge

Address:	0x052B	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Rising edge-triggered
1: Falling edge-triggered

Description

-

H05.44 Numerator of frequency-division output reduction ratio

Address:	0x052C	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	16383	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1 to 16383

Description

-

H05.45 Denominator of frequency-division output reduction ratio

Address:	0x052D	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	8191	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:
1 to 8191
Description
-

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

Address:	0x052E	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
-

H05.47 Frequency-division Z pulse width

Address:	0x052F	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	400	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0us–400us
Description
-

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

Address:	0x0532	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	65535	Data type:	UInt16
Default:	1	Change:	At stop

Value Range:

1 to 65535
Description
-

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

Address:	0x0533	Effective mode:	Upon the next power-on
Min.:	1	Unit:	-
Max.:	65535	Data type:	UInt16
Default:	1	Change:	At stop

Value Range:
1 to 65535
Description
-

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

Address:	0x0534	Effective mode:	Upon the next power-on
Min.:	0	Unit:	Encoder unit
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:
0 to 2147483647
Description
-

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

Address:	0x0536	Effective mode:	Upon the next power-on
Min.:	0	Unit:	Encoder unit
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	At stop

Value Range:
0 to 2147483647
Description
-

H05.56 Speed threshold in homing upon hit-and-stop

Address:	0x0538	Effective mode:	Real time

Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	2	Change:	Immediately

Value Range:
0rpm–1000rpm
Description
-

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

Address:	0x053A	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data type:	UInt16
Default:	100.0	Change:	Immediately

Value Range:
0.0% to 300.0%
Description
-

H05.59 Positioning window time

Address:	0x053B	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	30000	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0ms to 30000ms
Description
-

H05.60 Hold time of positioning completed

Address:	0x053C	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	30000	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0ms to 30000ms
Description
-

H05.66 Homing time unit

Address:	0x0542	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
-

H05.67 Offset between zero point and single-turn absolute position

Address:	0x0543	Effective mode:	Real time
Min.:	-2147483648	Unit:	1 encoder unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	At stop

Value Range:
-2147483648 to 2147483647
Description
-

H05.69 Auxiliary homing function

Address:	0x0545	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Inhibited
1: Record offset position
2: Clear offset position
Description
-

H05.70 Moving average filter time constant 2

Address:	0x0546	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	1000.0	Data Type:	UInt16

Default: 0.0 Change: At stop

Value Range:

0.0 ms to 1000.0ms

Description

-

H05.71 Motor Z signal width

Address:	0x0547	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	4	Change:	Immediately

Value Range:

0ms to 100ms

Description

-

H05.72 Positioning completed window in fully closed-loop mode

Address:	0x0548	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Use inner loop unit

1: Inner loop uses inner loop unit, and outer loop uses outer loop unit

Description

-

H05.80 Reference operation mode in rotation mode

Address:	0x0550	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 to 4

Description

-

5.7 H06 Speed Control Parameters

H06.00 Source of main speed reference A

Address:	0x0600	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Digital setting (H06.03)

Description

-

H06.01 Source of auxiliary speed reference B

Address:	0x0601	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Digital setting (H06.03)

5: Multi-speed reference

Description

-

H06.02 Speed reference source

Address:	0x0602	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

-

H06.03 Speed reference value set through keypad

Address:	0x0603	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	200	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H06.04 DI speed reference

Address:	0x0604	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	Int16
Default:	150	Change:	Immediately

Value Range:
0rpm–10000rpm
Description
-

H06.05 Acc. ramp time of speed reference

Address:	0x0605	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0ms to 65535ms
Description
Acc. ramp time of speed reference in the local speed mode.

H06.06 Dec. ramp time of speed reference

Address:	0x0606	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0ms to 65535ms

Description
Dec. ramp time of speed reference in the local speed mode.

H06.07 Max. speed limit

Address:	0x0607	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Immediately

Value Range:
0rpm–10000rpm
Description
-

H06.08 Forward speed limit

Address:	0x0608	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Immediately

Value Range:
0rpm–10000rpm
Description
-

H06.09 Reverse speed limit

Address:	0x0609	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	7000	Change:	Immediately

Value Range:
0rpm–10000rpm
Description
-

H06.10 Deceleration unit in emergency stop

Address:	0x060A	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

The default value is 0. When ramp stop is set to the maximum value but the ramp time still exceeds the expected value, you can use this parameter to reduce the stop time.

H06.11 Torque feedforward control

Address:	0x060B	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 whether to enable internal torque feedforward in the control modes other than torque control.

Torque feedforward can be used to improve the torque reference response speed and reduce the position deviation during acceleration/deceleration at constant speed.

Parameters of the torque feedforward function include torque feedforward filter time constant and torque feedforward gain. For details, see section Feedforward Gain.

In non-torque control, the control block diagram of torque feedforward is shown in the following figure.

H06.12 Acceleration ramp time of jog speed

Address:	0x060C	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Real-time

Value Range:

0 ms to 65535 ms

Description

Defines the acceleration/deceleration time of jog speed references in the jog mode set through H0d.11 or the software tool.

H06.13 Speed feedforward smoothing filter

Address:	0x060D	Effective mode:	Real time
Min.:	0	Unit:	us
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0us–65535us

Description

Defines the speed feedforward filter time constant.

H06.15 Zero clamp speed threshold

Address:	0x060F	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:

0rpm–10000rpm

Description

-

H06.16 Threshold of TGON (motor rotation) signal

Address:	0x0610	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	20	Change:	Immediately

Value Range:

0rpm–1000rpm

Description

-

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

Address:	0x0611	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	100	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:

0 RPM –100 RPM

Description

-

H06.18 Threshold of speed reach signal

Address:	0x0612	Effective mode:	Real time
Min.:	20	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	1000	Change:	Immediately

Value Range:

20rpm–10000rpm

Description

-

H06.19 Threshold of zero speed output signal

Address:	0x0613	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	10000	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:

1rpm–10000rpm

Description

-

H06.36 Deceleration time of ramp 1/PN ramp stop

Address:	0x0624	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	32	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0ms to 32ms

Description

-

H06.40 Deceleration time of ramp 1/PN ramp stop

Address:	0x0628	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data type:	UInt16

Default:	0	Change:	At stop

Value Range:
0ms to 65535ms
Description
-

H06.41 Dec. time of ramp 2/PN quick stop

Address:	0x0629	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data type:	UInt16
Default:	0	Change:	At stop

Value Range:
0ms to 65535ms
Description
-

H06.50 Speed S-curve enable switch

Address:	0x0632	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0 to 1
Description
-

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

Address:	0x0633	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
-

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

Address:	0x0634	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
-

H06.53 Increasing acceleration of speed S-curve deceleration segment

Address:	0x0635	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
-

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

Address:	0x0636	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
-

5.8 H07 Torque Control Parameters

H07.00 Source of main torque reference A

Address:	0x0700	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Keypad (H7.03)

Description

-

H07.01 Source of auxiliary torque reference B

Address:	0x0701	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Keypad (H7.03)

Description

-

H07.02 Torque reference source

Address:	0x0702	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

-

H07.03 Torque reference set through keypad

Address:	0x0703	Effective mode:	Real time
Min.:	-400	Unit:	%
Max.:	400.0	Data type:	Int16
Default:	0.0	Change:	Immediately

Value Range:

-400.0% to 400.0%

Description

-

H07.05 Torque reference filter time constant 1

Address:	0x0705	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	30.00	Data Type:	UInt16
Default:	0.50	Change:	Immediately

Value Range:

0.00ms to 30.00ms

Description

-

H07.06 Torque reference filter time constant 2

Address:	0x0706	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 to 30.00 ms

Description

Defines the torque reference filter time constant.

Low-pass filtering of torque references helps smoothen torque references and reduce vibration.

Pay attention to the responsiveness during setting as an excessively high setpoint lowers down the responsiveness.

H07.07 Torque limit source

Address:	0x0707	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Positive/Negative internal torque limit

5: PN torque limit

Description

-

H07.09 Positive internal torque limit

Address:	0x0709	Effective mode:	Real time

Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Immediately

Value Range:
0.0% to 400.0%
Description
-

H07.10 Negative internal torque limit

Address:	0x070A	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Immediately

Value Range:
0.0% to 400.0%
Description
-

H07.11 Positive external torque limit

Address:	0x070B	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Immediately

Value Range:
0.0% to 400.0%
Description
-

H07.12 Negative external torque limit

Address:	0x070C	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	350.0	Change:	Immediately

Value Range:
0.0% to 400.0%
Description
-

H07.15 Emergency-stop torque

Address:	0x070F	Effective mode:	At stop
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	100.0	Change:	Immediately

Value Range:

0.0% to 400.0%

Description

-

H07.17 Speed limit source

Address:	0x0711	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Internal speed limit

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

Description

-

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

Address:	0x0713	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data type:	UInt16
Default:	3000	Change:	Immediately

Value Range:

0 RPM–10000 RPM

Description

-

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

Address:	0x0714	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	10000	Data type:	UInt16
Default:	3000	Change:	Immediately

Value Range:

0 RPM–10000 RPM

Description

-

H07.21 Torque reach base value

Address:	0x0715	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0% to 300.0%

Description

-

H07.22 Torque reach valid value

Address:	0x0716	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	20.0	Change:	Immediately

Value Range:

0.0% to 400.0%

Description

-

H07.23 Torque reach invalid value

Address:	0x0717	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	400.0	Data Type:	UInt16
Default:	10.0	Change:	Immediately

Value Range:

0.0% to 400.0%

Description

-

H07.24 Field weakening depth

Address:	0x0718	Effective mode:	Real time
Min.:	60	Unit:	%
Max.:	115	Data Type:	UInt16

Default:	115	Change:	Real-time

Value Range:

60%–115%

Description

Use the default value in general cases. Reducing the flux weakening depth improves the dynamic performance of flux-weakening area and reduces current ripple, but also leads to load rate rise.

H07.25 Max. permissible demagnetizing current

Address:	0x0719	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

0%–200%

Description

Use the default value in general cases. Increasing the demagnetizing current extends the motor speed range, but also poses a greater challenge on the bearing capacity of the motor. If you need to increase the setpoint of 2007-1Ah, contact Inovance first.

H07.26 Field weakening selection

Address:	0x071A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

0: Disabled; 1: Enabled

H07.27 Flux weakening gain

Address:	0x071B	Effective mode:	Real time
Min.:	0.001	Unit:	Hz
Max.:	1.000	Data Type:	UInt16
Default:	0.030	Change:	Immediately

Value Range:

0.001 Hz to 1.000 Hz

Description

-

H07.28 Speed of flux weakening point

Address:	0x071C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H07.36 Time constant of low-pass filter 2

Address:	0x0724	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	10.00	Data Type:	UInt16
Default:	0.00	Change:	Immediately

Value Range:

0.00ms to 10.00ms

Description

-

H07.37 Torque reference filter selection

Address:	0x0725	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: First-order filter

1: Biquad filter

Description

0: First-order filter

1: Biquad filter

H07.38 Biquad filter attenuation ratio

Address:	0x0726	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	50	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:
0 to 50
Description
-

H07.40 Speed limit window in torque control mode

Address:	0x0728	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	30.0	Data type:	UInt16
Default:	1.0	Change:	Immediately

Value Range:
0.0 ms to 30.0ms
Description
-

5.9 H08 Gain Parameters

H08.00 Speed loop gain

Address:	0x0800	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Real-time

Value Range:
0.1Hz to 2000.0Hz
Description
Defines the proportional gain of the speed loop.
2008-01h determines the responsiveness of the speed loop. The higher the setpoint, the higher the responsiveness. 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

Address:	0x0801	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 to 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

Address:	0x0802	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	64.0	Change:	Real-time

Value Range:

0.1Hz to 2000.0Hz

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 torque reference filter time constant is called the 1st gain.

H08.03 2nd speed loop gain

Address:	0x0803	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	75.0	Change:	Immediately

Value Range:

0.1 Hz to 2000.0 Hz

Description

-

H08.04 2nd speed loop integral time constant

Address:	0x0804	Effective mode:	Real time
Min.:	0.15	Unit:	ms
Max.:	512.00	Data type:	UInt16
Default:	10.61	Change:	Immediately

Value Range:
0.15ms to 512.00ms
Description
-

H08.05 2nd position loop gain

Address:	0x0805	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	120.0	Change:	Real-time

Value Range:
0.1Hz to 2000.0Hz
Description
Defines the second gain set of the position loop and speed loop.
The 2nd torque reference filter time constant is called 2nd gain.
For details on gain switchover, see section "Gain Switchover".

H08.08 2nd gain mode setting

Address:	0x0808	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:
0: Fixed to the 1st group of gains, P/PI switched through external DI1:Switched between the 1st and 2nd group of gains as defined by H08.09
Description
Defines the mode for switching to the 2nd gain set.

H08.09 Gain switchover condition

Address:	0x0809	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 Func3 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

See the following table for gain switchover conditions.

Set point	Gain switchover condition	Remarks
0	Fixed to the 1st gain set	The 1st gain set applies.
1	DI (Func3) switchover	-
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.
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 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.

Set point	Gain switchover condition	Remarks
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.
9	Actual speed	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

Address:	0x080A	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 to 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

Address:	0x080B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20000	Data Type:	UInt16
Default:	50	Change:	Real-time

Value Range:

0 to 20000

Description

Defines the gain switchover level.

Defines the gain switchover level.

The unit of gain switchover level varies with the switchover condition.

H08.12 Gain switchover hysteresis

Address:	0x080C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20000	Data Type:	UInt16
Default:	30	Change:	Real-time

Value Range:

0 to 20000

Description

Defines the dead time for gain switchover.

Gain switchover is affected by both the level and the dead time.

The unit of gain switchover hysteresis varies with the switchover condition.

H08.13 Position gain switchover time

Address:	0x080D	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 to 1000.0 ms

Description

In position control, if 2nd position loop gain is much higher than position loop gain, set the time for switching from the latter to the former.

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

Address:	0x080F	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:

0.00 to 120.00

Description

Defines the mechanical load inertia ratio relative to the motor moment of inertia. In online inertia auto-tuning, the servo drive sets the parameter automatically and manual setting is not allowed. Manual setting is allowed after online inertia auto-tuning is off.

H08.17 Zero phase delay

Address:	0x0811	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	4.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0 ms to 4.0ms

Description

-

H08.18 Time constant of speed feedforward filter

Address:	0x0812	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	64.00	Data Type:	UInt16
Default:	0.50	Change:	Immediately

Value Range:

0.00ms to 64.00ms

Description

Defines the filter time constant of speed feedforward.

H08.19 Speed feedforward gain

Address:	0x0813	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0% to 100.0%

Description

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

H08.20 Torque feedforward filter time constant

Address:	0x0814	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	64.00	Data type:	UInt16
Default:	0.50	Change:	Immediately

Value Range:

0.00ms to 64.00ms

Description

Defines the filter time constant of torque feedforward.

H08.21 Torque feedforward gain

Address:	0x0815	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Real-time

Value Range:

0.0%–300.0%

Description

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.

H08.22 Speed feedback filtering option

Address:	0x0816	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

Address:	0x0817	Effective mode:	Real time
Min.:	100	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

100Hz to 8000Hz

Description

Defines the cutoff frequency for first-order low-pass filtering on the speed feedback.

H08.24 PDFF control coefficient

Address:	0x0818	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	200.0	Data Type:	UInt16
Default:	100.0	Change:	Real-time

Value Range:

0.0%–200.0%

Description

Defines the control mode of the speed loop.
When the parameter is set to 200.0, PI control (default control mode of the speed loop) is applied to the speed loop, which features fast 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.

H08.27 Speed observer cutoff frequency

Address:	0x081B	Effective mode:	Real time

Min.:	50	Unit:	Hz
Max.:	600	Data Type:	UInt16
Default:	170	Change:	Immediately

Value Range:
50 Hz to 600 Hz
Description
-

H08.28 Speed observer inertia correction coefficient

Address:	0x081C	Effective mode:	Real time
Min.:	1	Unit:	%
Max.:	1600	Data Type:	UInt16
Default:	100	Change:	Immediately

Value Range:
1% to 1600%
Description
-

H08.29 Speed observer filter time

Address:	0x081D	Effective mode:	Real time
Min.:	0.00	Unit:	ms
Max.:	10.00	Data Type:	UInt16
Default:	0.80	Change:	Immediately

Value Range:
0.00ms to 10.00ms
Description
-

H08.31 Disturbance cutoff frequency

Address:	0x081F	Effective mode:	Real time
Min.:	10	Unit:	Hz
Max.:	4000	Data Type:	UInt16
Default:	600	Change:	Immediately

Value Range:
10 Hz to 4000 Hz
Description
-

H08.32 Disturbance compensation gain

Address:	0x0820	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0% to 100%
Description
-

H08.33 Disturbance observer inertia correction coefficient

Address:	0x0821	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	1600	Data Type:	UInt16
Default:	100	Change:	Immediately

Value Range:
0% to 1600%
Description
-

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

Address:	0x0825	Effective mode:	Real time
Min.:	-90	Unit:	°
Max.:	90	Data Type:	Int16
Default:	0	Change:	Immediately

Value Range:
-90° to 90°
Description
-

H08.38 Medium-frequency suppression 2 frequency

Address:	0x0826	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	1000	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 Hz to 1000 Hz

Description

-

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

Address:	0x0827	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	300	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0% to 300%

Description

-

H08.40 Speed observer selection

Address:	0x0828	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disabled

1: Enabled

Description

-

H08.42 Model control selection

Address:	0x082A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disable

1: Enable

2: Dual-inertia model

Description

-

H08.43 Model gain

Address:	0x082B	Effective mode:	Real time

Min.:	0.1	Unit:	-
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Immediately

Value Range:
0.1 to 2000.0
Description
-

H08.46 Feedforward value

Address:	0x082E	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	102.4	Data Type:	UInt16
Default:	95.0	Change:	Immediately

Value Range:
0.0 to 102.4
Description
-

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

Address:	0x0835	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0 Hz to 300.0 Hz
Description
-

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

Address:	0x0836	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0% to 200%
Description
-

H08.56 Medium- and low-frequency jitter suppression phase modulation 3

Address:	0x0838	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	600	Data Type:	UInt16
Default:	100	Change:	Immediately

Value Range:
0% to 600%
Description
-

H08.59 Medium- and low-frequency jitter suppression frequency 4

Address:	0x083B	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0 Hz to 300.0 Hz
Description
-

H08.60 Medium- and low-frequency jitter suppression compensation 4

Address:	0x083C	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0% to 200%
Description
-

H08.61 Medium- and low-frequency jitter suppression phase modulation 4

Address:	0x083D	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	600	Data Type:	UInt16
Default:	100	Change:	Immediately

Value Range:
0% to 600%

Description

-

H08.62 Position loop integral time constant

Address:	0x083E	Effective mode:	Real time
Min.:	0.15	Unit:	-
Max.:	512.00	Data type:	UInt16
Default:	512.00	Change:	Immediately

Value Range:

0.15 to 512.00

Description

-

H08.63 2nd position loop integral time constant

Address:	0x083F	Effective mode:	Real time
Min.:	0.15	Unit:	-
Max.:	512.00	Data type:	UInt16
Default:	512.00	Change:	Immediately

Value Range:

0.15 to 512.00

Description

-

H08.64 Speed observer feedback source

Address:	0x0840	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disabled

1: Enabled

Description

-

H08.65 Zero deviation control selection

Address:	0x0841	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disabled

1: Enabled

Description

-

H08.66 Zero deviation control position average filter

Address:	0x0842	Effective mode:	Real time
Min.:	0.0	Unit:	ms
Max.:	320.0	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:

0.0 ms to 320.0ms

Description

-

H08.68 Speed feedforward of zero deviation control

Address:	0x0844	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0% to 100.0%

Description

-

H08.69 Torque feedforward of zero deviation control

Address:	0x0845	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0% to 100.0%

Description

-

H08.81 Anti-resonance frequency of dual-inertia model

Address:	0x0851	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0 Hz to 300.0 Hz
Description
-

H08.82 Resonance frequency of dual-inertia model

Address:	0x0852	Effective mode:	Real time
Min.:	0.0	Unit:	Hz
Max.:	300.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0 Hz to 300.0 Hz
Description
-

H08.83 Dual-inertia model gain

Address:	0x0853	Effective mode:	Real time
Min.:	0.1	Unit:	Hz
Max.:	2000.0	Data Type:	UInt16
Default:	40.0	Change:	Immediately

Value Range:
0.1 Hz to 2000.0 Hz
Description
-

H08.84 Inertia ratio of dual-inertia model

Address:	0x0854	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	120.00	Data Type:	UInt16
Default:	1.00	Change:	Immediately

Value Range:
0.00 to 120.00

Description

-

H08.88 Speed feedforward value of dual-inertia model

Address:	0x0858	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	100.0	Change:	Immediately

Value Range:

0.0 to 100.0

Description

-

H08.89 Torque feedforward value of dual-inertia model

Address:	0x0859	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	100.0	Change:	Immediately

Value Range:

0.0 to 100.0

Description

-

5.10 H09 Auto-tuning Parameters

H09.00 Auto-adjustment mode

Address:	0x0900	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	6	Data Type:	UInt16
Default:	0	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

4: Normal mode+Inertia auto-tuning

6: Quick positioning mode+Inertia auto-tuning

Description
2009-01h is set to 4 by default.

H09.01 Stiffness level selection

Address:	0x0901	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	41	Data Type:	UInt16
Default:	15	Change:	Real-time

Value Range:
0 to 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

Address:	0x0902	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

Address:	0x0903	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

Sets the offline inertia auto-tuning mode. For details on offline inertia auto-tuning, see section Offline Inertia Auto-tuning.

H09.05 Offline inertia auto-tuning mode

Address:	0x0905	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	1	Change:	At stop

Value Range:

0: Bi-directional
1: Unidirectional

Description

Sets the offline inertia auto-tuning mode. For details on offline inertia auto-tuning, see section Offline Inertia Auto-tuning.

H09.06 Max. speed of inertia auto-tuning

Address:	0x0906	Effective mode:	Real time
Min.:	100	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	500	Change:	At stop

Value Range:

100rpm–1000rpm

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

Address:	0x0907	Effective mode:	Real time
Min.:	20	Unit:	ms
Max.:	800	Data Type:	UInt16
Default:	125	Change:	At stop

Value Range:
20 ms to 800 ms
Description
Defines the time for the motor to accelerate from 0 rpm to the maximum speed of inertia auto-tuning during offline inertia auto-tuning.

H09.08 Interval time after an individual inertia auto-tuning

Address:	0x0908	Effective mode:	Real time
Min.:	50	Unit:	ms
Max.:	10000	Data Type:	UInt16
Default:	800	Change:	At stop

Value Range:
50 ms to 10000 ms
Description
Defines the time interval between two consecutive speed references when bi-directional offline inertia auto-tuning mode is used.

H09.09 Number of motor revolutions per inertia auto-tuning

Address:	0x0909	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	100.00	Data Type:	UInt16
Default:	1.00	Change:	Real-time

Value Range:
0.00 to 100.00
Description
Displays the number of motor revolutions needed when bi-directional offline inertia auto-tuning mode is used.

H09.11 Vibration threshold

Address:	0x090B	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0% to 100.0%
Description
Defines the threshold of vibration detected by the notch. When the current feedback exceeds the threshold, the notch starts working.

H09.12 Frequency of the 1st notch

Address:	0x090C	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Real-time

Value Range:

50Hz to 8000Hz

Description

Defines the center frequency of the notch, which is the mechanical resonance frequency.

In the torque control mode, setting the notch frequency to 8000Hz deactivates the notch function.

H09.13 Width level of the 1st notch

Address:	0x090D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Real-time

Value Range:

0 to 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

Address:	0x090E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 to 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.

For use of notches, see section "Vibration Suppression" in SV660P Series Servo Drive Function Guide.

H09.15 Frequency of the 2nd notch

Address:	0x090F	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Immediately

Value Range:

50 Hz to 8000 Hz

Description

-

H09.16 Width level of the 2nd notch

Address:	0x0910	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Immediately

Value Range:

0 to 20

Description

-

H09.17 Depth level of the 2nd notch

Address:	0x0911	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 99

Description

Descriptions for parameters of the 2nd notch are the same as that of the 1st notch.

H09.18 Frequency of the 3rd notch

Address:	0x0912	Effective mode:	Real time
Min.:	50	Unit:	Hz
Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Immediately

Value Range:

50 Hz to 8000 Hz

Description

-

H09.19 Width level of the 3rd notch

Address:	0x0913	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Immediately

Value Range:

0 to 20

Description

-

H09.20 Depth level of the 3rd notch

Address:	0x0914	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 99

Description

Descriptions for parameters of the 3rd notch are the same as that of the 1st notch.

H09.21 Frequency of the 4th notch

Address:	0x0915	Effective mode:	Real time
Min.:	50	Unit:	Hz

Max.:	8000	Data Type:	UInt16
Default:	8000	Change:	Immediately

Value Range:
50 Hz to 8000 Hz
Description
-

H09.22 Width level of the 4th notch

Address:	0x0916	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	20	Data Type:	UInt16
Default:	2	Change:	Immediately

Value Range:
0 to 20
Description
-

H09.23 Depth level of the 4th notch

Address:	0x0917	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	99	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 99
Description
Descriptions for parameters of the 4th notch are the same as that of the 1st notch.

H09.24 Auto-tuned resonance frequency

Address:	0x0918	Effective mode:	-
Min.:	0	Unit:	Hz
Max.:	5000	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 Hz to 5000 Hz
Description
When adaptive notch mode is set to 3, the current mechanical resonance frequency is displayed.

H09.26 ITune response

Address:	0x091A	Effective mode:	Real time
Min.:	50.0	Unit:	%
Max.:	500.0	Data Type:	UInt16
Default:	100.0	Change:	Immediately

Value Range:
50.0% to 500.0%
Description
-

H09.27 ITune mode

Address:	0x091B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Disabled
1: ITune mode 1
2: ITune mode 2
Description
-

H09.28 Minimum inertia ratio of ITune

Address:	0x091C	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	80.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0% to 80.0%
Description
-

H09.29 Maximum inertia ratio of ITune

Address:	0x091D	Effective mode:	Real time
Min.:	1.0	Unit:	%
Max.:	120.0	Data Type:	UInt16
Default:	30.0	Change:	Immediately

Value Range:

1.0% to 120.0%
Description
-

H09.32 Gravity compensation value

Address:	0x0920	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0% to 100.0%
Description
-

H09.33 Positive friction compensation value

Address:	0x0921	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0% to 100.0%
Description
-

H09.34 Negative friction compensation value

Address:	0x0922	Effective mode:	Real time
Min.:	-100	Unit:	%
Max.:	0.0	Data Type:	Int16
Default:	0.0	Change:	Immediately

Value Range:
-100.0% to 0.0%
Description
-

H09.35 Friction compensation speed

Address:	0x0923	Effective mode:	Real time
Min.:	0.0	Unit:	-

Max.:	20.0	Data Type:	UInt16
Default:	2.0	Change:	Immediately

Value Range:

0.0 to 20.0

Description

-

H09.36 Friction compensation speed

Address:	0x0924	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	19	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: 0x00 Slow mode+Speed reference
0: 0x01 Slow mode+Model speed
0: 0x02 Slow mode+Speed feedback
0: 0x03 Slow mode+Observe speed
0: 0x10 Quick mode +Speed reference
0: 0x11 Quick mode +Model speed
0: 0x12 Quick mode +Speed feedback
0: 0x13 Quick mode+Observe speed

Description

Selects the setpoint.

H09.37 Vibration monitoring time

Address:	0x0925	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	600	Change:	Immediately

Value Range:

0 to 65535

Description

-

H09.38 Frequency of low-frequency resonance suppression 1 at the mechanical end

Address:	0x0926	Effective mode:	Real time
Min.:	1.0	Unit:	Hz
Max.:	100.0	Data type:	UInt16

Default:	100.0	Change:	Immediately

Value Range:

1.0 Hz to 100.0 Hz

Description

-

H09.39 Low-frequency resonance suppression 1 at the mechanical end

Address:	0x0927	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	At stop

Value Range:

0 to 3

Description

-

H09.44 Frequency of low-frequency resonance suppression 2 at mechanical load end

Address:	0x092C	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0 to 100.0

Description

-

H09.45 Responsiveness of low-frequency resonance suppression 2 at mechanical load end

Address:	0x092D	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	5.00	Data Type:	UInt16
Default:	1.00	Change:	Immediately

Value Range:

0.01 to 5.00

Description

-

H09.47 Width of low-frequency resonance suppression 2 at mechanical load end

Address:	0x092F	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	2.00	Data Type:	UInt16
Default:	1.00	Change:	Immediately

Value Range:
0.00 to 2.00
Description
-

H09.49 Frequency of low-frequency resonance suppression 3 at mechanical load end

Address:	0x0931	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	100.0	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:
0.0 to 100.0
Description
-

H09.50 Responsiveness of low-frequency resonance suppression 3 at mechanical load end

Address:	0x0932	Effective mode:	Real time
Min.:	0.01	Unit:	-
Max.:	5.00	Data Type:	UInt16
Default:	1.00	Change:	Immediately

Value Range:
0.01 to 5.00
Description
-

H09.52 Width of low-frequency resonance suppression 3 at mechanical load end

Address:	0x0934	Effective mode:	Real time
Min.:	0.00	Unit:	-
Max.:	2.00	Data Type:	UInt16
Default:	1.00	Change:	Immediately

Value Range:
0.00 to 2.00

Description

-

H09.54 Vibration threshold

Address:	0x0936	Effective mode:	Real time
Min.:	0.0	Unit:	%
Max.:	300.0	Data Type:	UInt16
Default:	50.0	Change:	Real-time

Value Range:

0.0%–300.0%

Description

Defines the threshold of vibration detected by the notch. When the current feedback exceeds the threshold, the notch starts working.

H09.56 Max. overshoot allowed by ETune

Address:	0x0938	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	2936	Change:	Immediately

Value Range:

0 to 65535

Description

-

H09.57 STune resonance suppression switchover frequency

Address:	0x0939	Effective mode:	Real time
Min.:	0	Unit:	Hz
Max.:	4000	Data type:	UInt16
Default:	900	Change:	Immediately

Value Range:

0 Hz to 4000 Hz

Description

-

H09.58 STune resonance suppression reset selection

Address:	0x093A	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disabled

1: Enabled

Description

-

5.11 H0A Fault and Protection Parameters

H0A.00 Power input phase loss protection

Address:	0x0A00	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	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 Objects available. When voltage fluctuation or phase loss occurs on the power supply, the drive triggers power input phase loss protection according to the setting.

H0A.01 Absolute position limit

Address:	0x0A01	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

Defines whether the absolute position limit is active and the condition for activation.

- After the absolute position limit is enabled, when the target position reference exceeds the position limit in the position control mode, the servo drive takes the position limit as the target and stops after reaching the limit.
- When the absolute position feedback reaches the position limit in other control modes, the servo drive reports an overtravel warning and stops in the mode defined by the set stop mode at overtravel.

H0A.04 Motor overload protection gain

Address:	0x0A04	Effective mode:	Real time
Min.:	50	Unit:	-
Max.:	300	Data Type:	UInt16
Default:	100	Change:	Real-time

Value Range:

50 to 300

Description

Defines the motor overload duration before E620.0 (Motor overload fault) 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

Address:	0x0A08	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	20000	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0rpm–20000rpm

Description

Defines the overspeed threshold of the motor.

Setpoint	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 to 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

Address:	0x0A09	Effective mode:	Real time
Min.:	100	Unit:	kHz
Max.:	8000	Data type:	UInt16
Default:	8000	Change:	At stop

Value Range:

100 kHz to 8000 kHz

Description

-

H0A.10 Threshold of excessive local position deviation

Address:	0x0A0A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	25185824	Change:	Real-time

Value Range:

0 to 4294967295

Description

Defines the threshold for reporting EB00.0 (Position deviation too large). The function of 200A-0Bh is the same as 6065h (Following error window), both of which are active.

H0A.12 Runaway protection enable

Address:	0x0A0C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16

Default: 1 Change: Immediately

Value Range:

0: Disable

1: Enable

Description

Used to enable runaway protection.

H0A.17 Reference unit

Address:	0x0A11	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

-

H0A.18 IGBT over-temperature threshold

Address:	0x0A12	Effective mode:	Real time
Min.:	120	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	140	Change:	Immediately

Value Range:

120°C to 175°C

Description

Defines the over-temperature protection threshold of the power module.

H0A.19 Filter time constant of touch probe 1

Address:	0x0A13	Effective mode:	Real time
Min.:	0.00	Unit:	us
Max.:	6.30	Data type:	UInt16
Default:	2.00	Change:	Immediately

Value Range:

0.00us–6.30us

Description

-

H0A.20 Filter time constant of touch probe 2

Address:	0x0A14	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

Probe 1 and Probe 2 are high speed DI terminals. When there is peak interference in the external input signal, note that the oscilloscope in the software tool displays the unfiltered signals of touch probe 1 and touch probe 2. Signals with width lower than 0.25 ms will not be displayed.

H0A.23 TZ signal filter time

Address:	0x0A17	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	31	Data Type:	UInt16
Default:	15	Change:	At stop

Value Range:

0ns to 31ns

Description

-

H0A.24 Filter time constant of low-speed pulse input terminal

Address:	0x0A18	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	255	Data type:	UInt16
Default:	30	Change:	At stop

Value Range:

025ns to 25525ns

Description

-

H0A.26 Motor overload detection

Address:	0x0A1A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0: Show motor overload warning (E909.0) and fault (E620.0)

1: Hide motor overload warning (E909.0) and fault (E620.0)

Description

Defines whether to enable motor overload detection.

H0A.27 Motor rotation DO speed filter time

Address:	0x0A1B	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	50	Change:	At stop

Value Range:

0 ms to 100 ms

Description

Defines the low-pass filter time constant of speed feedback signals.

This parameter is effective only when the speed feedback signals are used to judge the speed-related DO signals.

H0A.29 Fully closed-loop encoder (ABZ) filter time

Address:	0x0A1D	Effective mode:	Upon the next power-on
Min.:	0	Unit:	25ns
Max.:	255	Data type:	UInt16
Default:	15	Change:	At stop

Value Range:

025ns to 25525ns

Description

-

H0A.30 Filter time constant of high-speed pulse input terminal

Address:	0x0A1E	Effective mode:	Upon the next power-on
Min.:	0	Unit:	ns
Max.:	255	Data type:	UInt16
Default:	3	Change:	At stop

Value Range:

0ns to 255ns

Description

-

H0A.32 Time threshold for locked motor overheat protection

Address:	0x0A20	Effective mode:	Real time
Min.:	10	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	200	Change:	Real-time

Value Range:

10 ms to 65535 ms

Description

Defines the overtemperature duration before E630.0 (Motor stall) is detected by the servo drive.

H0A.33 Locked motor overheat protection

Address:	0x0A21	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	1	Change:	Immediately

Value Range:

0: Disabled

1: Enabled

Description

Defines whether to enable the detection for E630.0 (Motor stall overtemperature protection).

H0A.36 Encoder multi-turn overflow fault selection

Address:	0x0A24	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 E735.0 (Encoder multi-turn counting overflow) in the absolute position linear mode.

H0A.39 Current sampling clock signal tolerance count

Address:	0x0A27	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-

Max.: 3 Data Type: UInt16
Default: 0 Change: At stop

Value Range:

0 to 3

Description

-

H0A.40 Compensation function selection

Address: 0x0A28 Effective mode: Real time
Min.: 0 Unit: -
Max.: 15 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 solution
		1: Old solution (same as SV660N)

Description

-

H0A.41 Forward position of software position limit

Address: 0x0A29 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
-

H0A.43 Reverse position of software position limit

Address:	0x0A2B	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
-

H0A.49 Regenerative resistor overtemperature threshold

Address:	0x0A31	Effective mode:	Real time
Min.:	100	Unit:	℃
Max.:	175	Data Type:	UInt16
Default:	115	Change:	Immediately

Value Range:
100℃ to 175℃
Description
-

H0A.50 Encoder communication fault tolerance threshold

Address:	0x0A32	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	3	Change:	Immediately

Value Range:
0 to 31
Description
-

H0A.51 Phase loss detection filter times

Address:	0x0A33	Effective mode:	Real time

Min.:	3	Unit:	55ms
Max.:	36	Data Type:	UInt16
Default:	20	Change:	Immediately

Value Range:
3ms to 36ms
Description
-

H0A.52 Encoder temperature protection threshold

Address:	0x0A34	Effective mode:	Real time
Min.:	0	Unit:	°C
Max.:	175	Data Type:	UInt16
Default:	105	Change:	Immediately

Value Range:
0°C to 175°C
Description
0: Disable

H0A.53 Probe DI ON compensation time

Address:	0x0A35	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	128	Change:	Immediately

Value Range:
-3000ns to 3000ns
Description
-

H0A.54 Probe DI OFF compensation time

Address:	0x0A36	Effective mode:	Real time
Min.:	-3000	Unit:	25ns
Max.:	3000	Data Type:	Int16
Default:	1512	Change:	Immediately

Value Range:
-3000ns to 3000ns
Description
-

H0A.55 Runaway current threshold

Address:	0x0A37	Effective mode:	Real time
Min.:	100.0	Unit:	%
Max.:	400.0	Data type:	UInt16
Default:	200.0	Change:	Immediately

Value Range:
100.0% to 400.0%
Description
-

H0A.56 Fault reset delay

Address:	0x0A38	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	60000	Data Type:	UInt16
Default:	10000	Change:	Real-time

Value Range:
0 ms to 60000 ms
Description
Faults E620.0, E630.0, E640.0, E640.1, and E650.0 can be reset only after the set delay.

H0A.57 Runaway speed threshold

Address:	0x0A39	Effective mode:	Real time
Min.:	1	Unit:	RPM
Max.:	1000	Data Type:	UInt16
Default:	50	Change:	Immediately

Value Range:
1rpm–1000rpm
Description
-

H0A.58 Runaway speed filter time

Address:	0x0A3A	Effective mode:	Upon the next power-on
Min.:	0.1	Unit:	ms
Max.:	100.0	Data Type:	UInt16
Default:	2.0	Change:	Immediately

Value Range:
0.1ms to 100.0ms

Description

-

H0A.59 Runaway protection detection time

Address:	0x0A3B	Effective mode:	Real time
Min.:	10	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	30	Change:	Immediately

Value Range:

10ms to 1000ms

Description

-

H0A.60 Black box function mode

Address:	0x0A3C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data type:	UInt16
Default:	1	Change:	Immediately

Value Range:

0: Disable

1: Any fault

2: Designated fault

3: Triggered based on designated condition

Description

-

H0A.61 Designated fault code

Address:	0x0A3D	Effective mode:	Real time
Min.:	0.0	Unit:	-
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Immediately

Value Range:

0.0 to 6553.5

Description

-

H0A.62 Trigger source

Address:	0x0A3E	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	25	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 25
Description
-

H0A.63 Trigger level

Address:	0x0A3F	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H0A.65 Trigger level

Address:	0x0A41	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Rising edge
1: Equal
2: Falling edge
3: Edge-triggered
Description
-

H0A.66 Trigger position

Address:	0x0A42	Effective mode:	Real time
Min.:	0	Unit:	%
Max.:	100	Data Type:	UInt16
Default:	75	Change:	Immediately

Value Range:
0% to 100%

Description

-

H0A.67 Sampling frequency

Address:	0x0A43	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Current loop

1: Position loop

2: Main cycle

Description

-

H0A.70 Overspeed threshold 2

Address:	0x0A46	Effective mode:	Real time
Min.:	0	Unit:	RPM
Max.:	20000	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0rpm–20000rpm

Description

-

H0A.71 MS1 motor overload curve switchover

Address:	0x0A47	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	2	Change:	Immediately

Value Range:

0 to 3

Description

-

H0A.72 Maximum stop time in ramp-to-stop

Address:	0x0A48	Effective mode:	Real time

Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10000	Change:	At stop

Value Range:

0 ms to 65535 ms

Description

Defines the maximum time taken by the motor in decelerating from 6000 RPM to 0 RPM under ramp stop.

H0A.73 STO 24 V disconnection filter time

Address:	0x0A49	Effective mode:	Real time
Min.:	1	Unit:	ms
Max.:	5	Data Type:	UInt16
Default:	5	Change:	Immediately

Value Range:

1ms to 5ms

Description

-

H0A.74 Filter time for two inconsistent STO channels

Address:	0x0A4A	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	1000	Data Type:	UInt16
Default:	100	Change:	Immediately

Value Range:

0ms to 1000ms

Description

-

H0A.75 Servo OFF delay after STO triggered

Address:	0x0A4B	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	25	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:

0ms to 25ms

Description

-

H0A.90 Average filter time constant for speed display

Address:	0x0A5A	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0ms to 100ms
Description
-

H0A.91 Average filter time constant for torque display

Address:	0x0A5B	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0ms to 100ms
Description
-

H0A.92 Average filter time constant for position display

Address:	0x0A5C	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	100	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0ms to 100ms
Description
-

H0A.93 Low-pass filter time constant for voltage display

Address:	0x0A5D	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	250	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0ms to 250ms

Description

-

H0A.94 Low-pass filter time constant for thermal display

Address:	0x0A5E	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	250	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0ms to 250ms

Description

-

5.12 H0b Monitoring Parameters

H0b.00 Motor speed actual value

Address:	0x0B00	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. You can set the filter time constant for H0B-00 in filter time constant of speed feedback display.

H0b.01 Speed reference

Address:	0x0B01	Effective mode:	-
Min.:	-32767	Unit:	RPM
Max.:	32767	Data type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32767 RPM to 32767 RPM

Description

Local speed mode, speed reference

H0b.02 Internal torque reference

Address:	0x0B02	Effective mode:	-
Min.:	-500	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

Address:	0x0B03	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

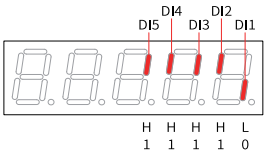
Description

Indicates the level status of DI1 to DI5 without filtering.

Upper LED segments ON: high level (indicated by "1") Lower LED segments ON: low level (indicated by "0")

For example, if DI1 is low level and DI2 to DI5 are high level, and the binary value is 11110, then the decimal value read from Inovance servo commissioning software is 30.

The panel display is as follows:



H0b.05 Output (DO) signal monitoring

Address:	0x0B05	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

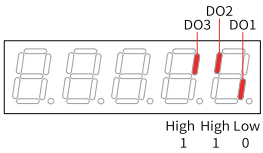
Description

It displays the level states of the 3 DO terminals without filtering.

Upper LED segments ON: high level (indicated by "1") Lower LED segments ON: low level (indicated by "0")

For example, if DO1 is low level and DO2 to DO3 are high level, and the binary value is 110, then the decimal value of H0B-05 read from Inovance servo commissioning software is 6, and the keypad displays the following figure:

The panel display is as follows:



H0b.07 Absolute position counter

Address:	0x0B07	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

It displays the current motor absolute position (reference unit) 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

Address:	0x0B09	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°.

H0b.10 Electrical angle

Address:	0x0B0A	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 varies from -360° to +360.0° when the motor is rotating.
Similarly, if the motor has 4 pairs of poles, each revolution generates 4 rounds of angle changes from 0° to 359.9°.
Also, if the motor has 5 pairs of poles, each revolution generates 5 rounds of angle changes from 0° to 359.9°.

H0b.12 Average load ratio

Address:	0x0B0C	Effective mode:	-
Min.:	0.0	Unit:	%
Max.:	800.0	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0%–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

Address:	0x0B0D	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

-

H0b.15 Position following error (encoder unit)

Address:	0x0B0F	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.17 Feedback pulse counter

Address:	0x0B11	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

-

H0b.19 Total power-on time

Address:	0x0B13	Effective mode:	-
Min.:	0.0	Unit:	-
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.

H0b.24 Phase current RMS value

Address:	0x0B18	Effective mode:	-
Min.:	0.0	Unit:	A
Max.:	6553.5	Data type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0 A to 6553.5 A
Description
Displays the RMS value of the phase current of the motor, accurate to 0.1 A.

H0b.25 Angle obtained upon voltage injection auto-tuning

Address:	0x0B19	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

Address:	0x0B1A	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:
0.0V to 6553.5V
Description
Displays the DC bus voltage of the main circuit input voltage after rectification, which is accurate to 0.1V.

H0b.27 Module temperature

Address:	0x0B1B	Effective mode:	-
Min.:	-20	Unit:	°C
Max.:	200	Data type:	Int16
Default:	0	Change:	Unchangeable

Value Range:
-20°C to 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

Address:	0x0B1C	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.29 Axis status information given by FPGA

Address:	0x0B1D	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.30 Axis fault information given by FPGA

Address:	0x0B1E	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.31 Encoder fault information

Address:	0x0B1F	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535

Description

-

H0b.33 Fault log

Address:	0x0B21	Effective mode:	-
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 any one of the latest 10 faults that occurred on the servo drive.

H0b.34 Fault code set by H0B-33

Address:	0x0B22	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H0b.35 Timestamp of the selected fault

Address:	0x0B23	Effective mode:	-
Min.:	0.0	Unit:	-
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

Address:	0x0B25	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

Address:	0x0B26	Effective mode:	-
Min.:	-3276.7	Unit:	A
Max.:	3276.7	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:
-3276.7A to 3276.7A
Description
-

H0b.39 Motor phase V current upon occurrence of the selected fault

Address:	0x0B27	Effective mode:	-
Min.:	-3276.7	Unit:	A
Max.:	3276.7	Data Type:	Int16
Default:	0.0	Change:	Unchangeable

Value Range:
-3276.7A to 3276.7A

Description

-

H0b.40 Bus voltage upon occurrence of the selected fault

Address:	0x0B28	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data Type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0V to 6553.5V

Description

-

H0b.41 Input terminal status upon occurrence of the selected fault

Address:	0x0B29	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H0b.43 Output terminal status upon occurrence of the selected fault

Address:	0x0B2B	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

Displays the related data when a fault occurred.

H0b.45 Internal fault code

Address:	0x0B2D	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: Unchangeable

Value Range:

0 to 65535

Description

-

H0b.46 Absolute encoder fault information given by FPGA upon occurrence of the selected fault

Address: 0x0B2E Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0 to 65535

Description

-

H0b.47 System status information given by FPGA upon occurrence of the selected fault

Address: 0x0B2F Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0 to 65535

Description

-

H0b.48 System fault information given by FPGA upon occurrence of the selected fault

Address: 0x0B30 Effective mode: -

Min.: 0 Unit: -

Max.: 65535 Data type: UInt16

Default: 0 Change: Unchangeable

Value Range:

0 to 65535

Description

-

H0b.49 Encoder fault information upon occurrence of the selected fault

Address:	0x0B31	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.51 Internal fault code upon occurrence of the selected fault

Address:	0x0B33	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.52 FPGA timeout fault standard bit upon occurrence of the selected fault

Address:	0x0B34	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.53 Position following error (reference unit)

Address:	0x0B35	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p

Description

-

H0b.55 Motor speed actual value

Address:	0x0B37	Effective mode:	-
Min.:	-2147483648	Unit:	RPM
Max.:	2147483647.0	Data Type:	Int32
Default:	0.0	Change:	Unchangeable

Value Range:

-2147483648.0rpm to 2147483647.0rpm

Description

It displays the actual speed of the servo motor after round-off, in unit of 1 RPM. You can set the filter time constant for H0B-00 in filter time constant of speed feedback display.

H0b.57 Bus voltage of the control circuit

Address:	0x0B39	Effective mode:	-
Min.:	0.0	Unit:	V
Max.:	6553.5	Data type:	UInt16
Default:	0.0	Change:	Unchangeable

Value Range:

0.0V to 6553.5V

Description

It displays the DC bus voltage of the input control power after rectification.

H0b.58 Mechanical absolute position (low 32 bits)

Address:	0x0B3A	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

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)

Address:	0x0B3C	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

-

H0b.63 NotRdy state

Address:	0x0B3F	Effective mode:	-
Min.:	0	Unit:	-
Max.:	5	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

1: Control power error
2: Main circuit power input error
3: Undervoltage
4: Soft start failed
5: Encoder initialization not completed
6: Short circuit to ground failed
7: Others

Description

-

H0b.64 Real-time input position reference counter

Address:	0x0B40	Effective mode:	-
Min.:	-2147483648	Unit:	Reference unit
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

-

H0b.66 Encoder temperature

Address:	0x0B42	Effective mode:	-

Min.:	-32768	Unit:	°C
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32768°C to 32767°C

Description

Indicates the encoder temperature value.

H0b.67 Load rate of regenerative resistor

Address:	0x0B43	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

Indicates the brake load rate. When the load rate exceeds 100%, the servo drive stops braking.

H0b.70 Number of absolute encoder revolutions

Address:	0x0B46	Effective mode:	-
Min.:	0	Unit:	Rev
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0Rev–65535Rev

Description

Indicates the number of revolutions of the absolute encoder.

H0b.71 Single-turn position fed back by the absolute encoder

Address:	0x0B47	Effective mode:	-
Min.:	2147483648	Unit:	p
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 p to +2147483647 p

Description

It displays the single-turn position feedback of the absolute encoder.

H0b.74 System fault information given by FPGA

Address:	0x0B4A	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.77 Encoder position (low 32 bits)

Address:	0x0B4D	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p
Description
-

H0b.79 Encoder position (high 32 bits)

Address:	0x0B4F	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p
Description
-

H0b.81 Single-turn position of the rotary load (low 32 bits)

Address:	0x0B51	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648p to 2147483647p

Description

Indicates the low 32-bit value (encoder unit) of the position feedback of the load when the absolute encoder system works in the rotation mode.

H0b.83 Single-turn position of the rotary load (high 32 bits)

Address:	0x0B53	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

-

H0b.85 Single-turn position of the rotary load (reference unit)

Address:	0x0B55	Effective mode:	-
Min.:	-2147483648	Unit:	p
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648p to 2147483647p

Description

-

H0b.87 IGBT junction temperature

Address:	0x0B57	Effective mode:	-
Min.:	0	Unit:	-
Max.:	200	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 200

Description

-

H0b.90 Group No. of the abnormal parameter

Address:	0x0B5A	Effective mode:	-
Min.:	0	Unit:	-

Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.91 Offset within the group of the abnormal parameter

Address:	0x0B5B	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0b.94 Individual power-on time

Address:	0x0B5E	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	429496729.5	Data Type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:
0.0s–429496729.5s
Description
-

H0b.96 Individual power-on time upon occurrence of the selected fault

Address:	0x0B60	Effective mode:	-
Min.:	0.0	Unit:	-
Max.:	429496729.5	Data type:	UInt32
Default:	0.0	Change:	Unchangeable

Value Range:
0.0s–429496729.5s
Description
-

5.13 H0d Auxiliary Parameters

H0d.00 Software reset

Address:	0x0D00	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

Defines whether to enable software reset.

Software reset is available in the following cases:

The servo is in the S-OFF state.

No. 1 non-resettable faults do not occur.

No EEPROM operation is performed. The software reset function is ineffective.

H0d.01 Fault reset

Address:	0x0D01	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

Defines whether to enable fault reset.

For fault classification, see the Troubleshooting Guide.

The fault reset function, once enabled, stops the keypad from displaying the fault only. It does not activate modifications made on parameters.

This function is not applicable to non-resettable faults. Use this function with caution in cases where the fault causes are not rectified.

H0d.02 Inertia auto-tuning enable

Address:	0x0D02	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 65

Description

-

H0d.04 Read/write in encoder ROM

Address:	0x0D04	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

Address:	0x0D05	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

Defines whether to enable emergency stop. When this function is enabled, the servo drive immediately stops according to the Stop mode at S-ON OFF regardless of its state.

H0d.12 Phase U/V current balance correction

Address:	0x0D0C	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

Address:	0x0D11	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

-

H0d.18 Forced DI value

Address:	0x0D12	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	255	Data Type:	UInt16
Default:	255	Change:	Real-time

Value Range:

0 to 255

Description

Defines the level logic of the DI functions set by the parameter when forced DI is activated.

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

Address:	0x0D13	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:

0 to 31

Description

Defines whether the DO functions assigned by the parameter are active when forced DO is active.

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

Address:	0x0D14	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 Torque fluctuation auto-tuning

Address:	0x0D17	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 to 1

Description

-

H0d.26 Brake and dynamic brake started forcibly

Address:	0x0D1A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No forcible operations
1: Dynamic brake deactivated forcibly
2: Brake released forcibly
3: Dynamic brake deactivated and brake released forcibly

Description

-

5.14 H0E Communication Function Parameters

H0E.00 Node address

Address:	0x0E00	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	127	Data Type:	UInt16
Default:	1	Change:	At stop

Value Range:

1 to 127

Description

Defines the servo drive axis address during RS232 communication.

- 0: Broadcast address. The host controller performs the write operation on all the servo drives through the broadcast address. The servo drives acts accordingly after receiving the broadcast address frames without responding.
- 1 to 127: Each of the servo drive networked must have a unique address. Otherwise, communication error or failure will occur.

H0E.01 Save objects written through communication to EEPROM

Address:	0x0E01	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	1	Change:	Real-time

Value Range:

0: Not save
1: Save parameters written through communication to EEPROM
2: Save object dictionaries written through communication to EEPROM
3: Save parameters and object dictionaries written through communication to EEPROM
4: Save object dictionaries written before communication (OP) to EEPROM

Description

Sets whether parameters written by 232 communication and PN communication are saved in e2prom.

H0E.07 Object dictionary unit selection

Address:	0x0E07	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

-

H0E.10 CAN selection

Address:	0x0E0A	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

-

H0E.11 CAN baud rate

Address:	0x0E0B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	5	Change:	At stop

Value Range:

0: 20kbps

1: 50kbps

2: 100kbps

3: 125kbps

4: 250kbps

5: 500kbps

7: 1Mbps

Description

-

H0E.12 Excessive IP position command increment count

Address:	0x0E0C	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	30	Data Type:	UInt16
Default:	20	Change:	Immediately

Value Range:

1 to 30

Description

-

H0E.13 CANopen sync period error limit

Address:	0x0E0D	Effective mode:	-
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

-

H0E.14 CANopen communication state

Address:	0x0E0E	Effective mode:	-
Min.:	0	Unit:	-
Max.:	9	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 9

Description

-

H0E.17 Get the count of received NMT frames with incorrect length

Address:	0x0E11	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	65535	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0E.18 Get the count of received NMT frames with incorrect command

Address:	0x0E12	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0E.19 Get received heartbeat frames of wrong length

Address:	0x0E13	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H0E.80 Modbus baud rate

Address:	0x0E50	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	10	Data Type:	UInt16
Default:	9	Change:	Real-time

Value Range:
4: 4800 bps
5: 9600 bps
6: 19200 bps
7: 38400 bps
8: 57600 bps
9: 115200 bps

Description

-

H0E.81 Modbus data format

Address:	0x0E51	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	3	Change:	Immediately

Value Range:

3: No parity, 1 stop bit (N-1)

Description

-

H0E.82 Modbus response delay

Address:	0x0E52	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	20	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0ms to 20ms

Description

-

H0E.83 Modbus communication timeout

Address:	0x0E53	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	600	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0ms to 600ms

Description

-

H0E.84 Sequence of Modbus communication data bits

Address:	0x0E54	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16

Default: 1 Change: Immediately

Value Range:

0: High bits before low bits

1: Low bits before high bits

Description

-

H0E.90 Modbus version

Address: 0x0E5A Effective mode: -

Min.: 0.00 Unit: -

Max.: 655.35 Data Type: UInt16

Default: 0.00 Change: Unchangeable

Value Range:

0.00 to 655.35

Description

-

H0E.91 CANopen version number

Address: 0x0E5B Effective mode: -

Min.: 0.00 Unit: -

Max.: 655.35 Data Type: UInt16

Default: 0.00 Change: Unchangeable

Value Range:

0.00 to 655.35

Description

-

H0E.92 CANlink version

Address: 0x0E5C Effective mode: -

Min.: 0.00 Unit: -

Max.: 655.35 Data Type: UInt16

Default: 0.00 Change: Unchangeable

Value Range:

0.00 to 655.35

Description

-

H0E.97 Communication monitoring parameter 1

Address:	0x0E61	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H0E.98 Communication monitoring parameter 2

Address:	0x0E62	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

5.15 H12 Multi-Speed

H12.00 Multi-speed operation mode

Address:	0x1200	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
-

H12.01 Number of speed references in multi-speed mode

Address:	0x1201	Effective mode:	Real time

Min.:	1	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	16	Change:	At stop

Value Range:
1 to 16
Description
-

H12.02 Operating time unit

Address:	0x1202	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: s
1: min
Description
-

H12.03 Acceleration time 1

Address:	0x1203	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:
0ms to 65535ms
Description
-

H12.04 Deceleration time 1

Address:	0x1204	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	10	Change:	Immediately

Value Range:
0ms to 65535ms
Description
-

H12.05 **Acceleration time 2**

Address: 0x1205
Effective mode: Real time
Min.: 0
Unit: ms
Max.: 65535
Data Type: UInt16
Default: 50
Change: Immediately

Value Range:
0ms to 65535ms
Description
-

H12.06 **Deceleration time 2**

Address: 0x1206
Effective mode: Real time
Min.: 0
Unit: ms
Max.: 65535
Data Type: UInt16
Default: 50
Change: Immediately

Value Range:
0ms to 65535ms
Description
-

H12.07 **Acceleration time 3**

Address: 0x1207
Effective mode: Real time
Min.: 0
Unit: ms
Max.: 65535
Data Type: UInt16
Default: 100
Change: Immediately

Value Range:
0ms to 65535ms
Description
-

H12.08 **Deceleration time 3**

Address: 0x1208
Effective mode: Real time
Min.: 0
Unit: ms
Max.: 65535
Data Type: UInt16
Default: 100
Change: Immediately

Value Range:
0ms to 65535ms

Description

-

H12.09 Acceleration time 4

Address:	0x1209	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	150	Change:	Immediately

Value Range:

0ms to 65535ms

Description

-

H12.10 Deceleration time 4

Address:	0x120A	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	65535	Data Type:	UInt16
Default:	150	Change:	Immediately

Value Range:

0ms to 65535ms

Description

-

H12.20 Speed reference 1

Address:	0x1214	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	0	Change:	Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.21 Operating time of speed 1

Address:	0x1215	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data type:	UInt16

Default: 5.0 Change: Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.22 Acc./dec. time of speed 1

Address: 0x1216 Effective mode: Real time

Min.: 0 Unit: -

Max.: 4 Data type: UInt16

Default: 0 Change: Immediately

Value Range:

0: Zero acceleration/deceleration time

1: Acceleration/Deceleration time 1

2: Acceleration/Deceleration time 2

3: Acceleration/Deceleration time 3

4: Acceleration/Deceleration time 4

Description

-

H12.23 Reference 2

Address: 0x1217 Effective mode: Real time

Min.: -10000 Unit: RPM

Max.: 10000 Data type: Int16

Default: 100 Change: Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.24 Operating time of speed 2

Address: 0x1218 Effective mode: Real time

Min.: 0.0 Unit: s (m)

Max.: 6553.5 Data type: UInt16

Default: 5.0 Change: Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.25 Acc./dec. time of speed 2

Address:	0x1219	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H12.22.

Description

-

H12.26 Reference 3

Address:	0x121A	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	300	Change:	Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.27 Operating time of speed 3

Address:	0x121B	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.28 Acc./dec. time of speed 3

Address:	0x121C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16

Default: 0 Change: Immediately

Value Range:

Same as H12.22.

Description

-

H12.29 Reference 4

Address: 0x121D Effective mode: Real time

Min.: -6000 Unit: rpm

Max.: 6000 Data Type: Int16

Default: 500 Change: Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.30 Operating time of speed 4

Address: 0x121E Effective mode: Real time

Min.: 0.0 Unit: s (m)

Max.: 6553.5 Data type: UInt16

Default: 5.0 Change: Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.31 Acc./dec. time of speed 4

Address: 0x121F Effective mode: Real time

Min.: 0 Unit: -

Max.: 4 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H12.22.

Description

-

H12.32 Reference 5

Address: 0x1220 Effective mode: Real time

Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	700	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.33 Operating time of speed 5

Address:	0x1221	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.34 Acc./dec. time of speed 5

Address:	0x1222	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H12.22.
Description
-

H12.35 Reference 6

Address:	0x1223	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	900	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.36 Operating time of speed 6

Address:	0x1224	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.37 Acc./dec. time of speed 6

Address:	0x1225	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H12.22.
Description
-

H12.38 Reference 7

Address:	0x1226	Effective mode:	Real time
Min.:	-10000	Unit:	rpm
Max.:	10000	Data Type:	Int16
Default:	600	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.39 Operating time of speed 7

Address:	0x1227	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)

Description

-

H12.40 Acc./dec. time of speed 7

Address:	0x1228	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H12.22.

Description

-

H12.41 Reference 8

Address:	0x1229	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	300	Change:	Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.42 Operating time of speed 8

Address:	0x122A	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.43 Acc./dec. time of speed 8

Address:	0x122B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16

Default: 0 Change: Immediately

Value Range:

Same as H12.22.

Description

-

H12.44 Reference 9

Address: 0x122C Effective mode: Real time

Min.: -10000 Unit: RPM

Max.: 10000 Data type: Int16

Default: 100 Change: Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.45 Operating time of speed 9

Address: 0x122D Effective mode: Real time

Min.: 0.0 Unit: s (m)

Max.: 6553.5 Data Type: UInt16

Default: 5.0 Change: Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.46 Acc./dec. time of speed 9

Address: 0x122E Effective mode: Real time

Min.: 0 Unit: -

Max.: 4 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H12.22.

Description

-

H12.47 Reference 10

Address: 0x122F Effective mode: Real time

Min.:	-10000	Unit:	rpm
Max.:	10000	Data Type:	Int16
Default:	-100	Change:	Immediately

Value Range:
–10000 rpm to +10000 rpm
Description
-

H12.48 Operating time of speed 10

Address:	0x1230	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.49 Acc./dec. time of speed 10

Address:	0x1231	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H12.22.
Description
-

H12.50 Reference 11

Address:	0x1232	Effective mode:	Real time
Min.:	-10000	Unit:	rpm
Max.:	10000	Data Type:	Int16
Default:	-300	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.51 Operating time of speed 11

Address:	0x1233	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.52 Acc./dec. time of speed 11

Address:	0x1234	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H12.22.
Description
-

H12.53 Reference 12

Address:	0x1235	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	-500	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.54 Operating time of speed 12

Address:	0x1236	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)

Description

-

H12.55 Acc./dec. time of speed 12

Address:	0x1237	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H12.22.

Description

-

H12.56 Reference 13

Address:	0x1238	Effective mode:	Real time
Min.:	-10000	Unit:	rpm
Max.:	10000	Data Type:	Int16
Default:	-700	Change:	Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.57 Operating time of speed 13

Address:	0x1239	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.58 Acc./dec. time of speed 13

Address:	0x123A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16

Default: 0 Change: Immediately

Value Range:

Same as H12.22.

Description

-

H12.59 Reference 14

Address: 0x123B Effective mode: Real time

Min.: -10000 Unit: rpm

Max.: 10000 Data Type: Int16

Default: -900 Change: Immediately

Value Range:

–10000 RPM to +10000 RPM

Description

-

H12.60 Operating time of speed 14

Address: 0x123C Effective mode: Real time

Min.: 0.0 Unit: s (m)

Max.: 6553.5 Data type: UInt16

Default: 5.0 Change: Immediately

Value Range:

0.0s(m) to 6553.5s(m)

Description

-

H12.61 Acc./dec. time of speed 14

Address: 0x123D Effective mode: Real time

Min.: 0 Unit: -

Max.: 4 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H12.22.

Description

-

H12.62 Reference 15

Address: 0x123E Effective mode: Real time

Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	-600	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.63 Operating time of speed 15

Address:	0x123F	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data Type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.64 Acc./dec. time of speed 15

Address:	0x1240	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H12.22.
Description
-

H12.65 Reference 16

Address:	0x1241	Effective mode:	Real time
Min.:	-10000	Unit:	RPM
Max.:	10000	Data type:	Int16
Default:	-300	Change:	Immediately

Value Range:
–10000 RPM to +10000 RPM
Description
-

H12.66 Operating time of speed 16

Address:	0x1242	Effective mode:	Real time
Min.:	0.0	Unit:	s (m)
Max.:	6553.5	Data type:	UInt16
Default:	5.0	Change:	Immediately

Value Range:
0.0s(m) to 6553.5s(m)
Description
-

H12.67 Acc./dec. time of speed 16

Address:	0x1243	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H12.22.
Description
-

5.16 H17 Virtual DI/DO

H17.90 Communication VDI enable

Address:	0x175A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0: Disabled
1: Enabled
Description
-

H17.91 VDI default value upon power-on

Address:	0x175B	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default: 0 Change: Immediately

Value Range:

0: No default
1: VDI1 default value
2: VDI2 default value
4: VDI3 default value
8: VDI4 default value
16: VDI5 default value
32: VDI6 default value
64: VDI7 default value
128: VDI8 default value
256: VDI9 default value
512: VDI10 default value
1024: VDI11 default value
2048: VDI12 default value
4096: VDI13 default value
8092: VDI14 default value
16384: VDI15 default value
32768: VDI16 default value

Description

-

H17.00 VDI1 function

Address:	0x1700	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: No assignment
1: Servo ON
3: Gain switchover
14: Positive limit switch
15: Negative limit switch
16: Positive external torque limit
17: Negative external torque limit
18: Forward jog
19: Reverse jog
31: Home switch
34: Emergency stop
36: Internal speed limit source
41: Current position as home
56: External switchover switch of EPOS program segment

Description

-

H17.01 VDI1 logic level selection

Address:	0x1701	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1702	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.03 VDI2 logic level selection

Address:	0x1703	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1704	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.05 VDI3 logic level selection

Address:	0x1705	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1706	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.07 VDI4 logic level selection

Address:	0x1707	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1708	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.09 VDI5 logic level selection

Address:	0x1709	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x170A	Effective mode:	At stop

Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.11 VDI6 logic level selection

Address:	0x170B	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x170C	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.13 VDI7 logic level selection

Address:	0x170D	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x170E	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.15 VDI8 logic level selection

Address:	0x170F	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1710	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.17 VDI9 logic level selection

Address:	0x1711	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1712	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H17.00.
Description
-

H17.19 VDI10 logic level selection

Address:	0x1713	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1714	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H17.00.
Description
-

H17.21 VDI11 logic level selection

Address:	0x1715	Effective mode:	At stop

Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1716	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.23 VDI12 logic level selection

Address:	0x1717	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x1718	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.25 VDI13 logic level selection

Address:	0x1719	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x171A	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.27 VDI14 logic level selection

Address:	0x171B	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x171C	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.29 VDI15 logic level selection

Address:	0x171D	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x171E	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	56	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.00.

Description

-

H17.31 VDI16 logic level selection

Address:	0x171F	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

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

Address:	0x175C	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Disabled

1: Enabled

Description

-

H17.93 VDO default value after power-on

Address:	0x175D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: No default

1: VDI1 default value

2: VDI2 default value

4: VDI3 default value

8: VDI4 default value

16: VDI5 default value

32: VDI6 default value

64: VDI7 default value

128: VDI8 default value

256: VDI9 default value

512: VDI10 default value

1024: VDI11 default value

2048: VDI12 default value

4096: VDI13 default value

8192: VDI14 default value

16384: VDI15 default value

32768: VDI16 default value

Description

-

H17.32 VDO virtual level

Address:	0x1720	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H17.33 VDO1 function selection

Address:	0x1721	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Real-time

Value Range:
0: No assignment
1: Servo ready
2: Motor rotating
3: Zero speed
4: Speed matching
5: Positioning completed
6: Proximity
7: Torque limited
8: Speed limited
9: Brake
10: Warning
11: Fault
16: Homing completed
18: Torque reach
19: Speed reach
25: Comparison output
30: Warning or fault output
32: EDM output
Description
-

H17.34 VDO1 logic level selection

Address:	0x1722	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic

Description

-

H17.35 VDO2 function

Address:	0x1723	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.36 VDO2 logic level selection

Address:	0x1724	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.37 VDO3 function

Address:	0x1725	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.38 VDO3 logic level selection

Address:	0x1726	Effective mode:	Real time
Min.:	0	Unit:	-

Max.: 1 Data type: UInt16
Default: 0 Change: Immediately
Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.39 VDO4 function
Address: 0x1727 Effective mode: Real time
Min.: 0 Unit: -
Max.: 33 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
Same as H17.33.
Description
-

H17.40 VDO4 logic level selection
Address: 0x1728 Effective mode: Real time
Min.: 0 Unit: -
Max.: 1 Data type: UInt16
Default: 0 Change: Immediately
Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.41 VDO5 function
Address: 0x1729 Effective mode: Real time
Min.: 0 Unit: -
Max.: 33 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
Same as H17.33.
Description
-

H17.42 VDO5 logic level selection

Address:	0x172A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.43 VDO6 function

Address:	0x172B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H17.33.
Description
-

H17.44 VDO6 logic level selection

Address:	0x172C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.45 VDO7 function

Address:	0x172D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.46 VDO7 logic level selection

Address:	0x172E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.47 VDO8 function

Address:	0x172F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.48 VDO8 logic level selection

Address:	0x1730	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.49 VDO9 function

Address:	0x1731	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.50 VDO9 logic level selection

Address:	0x1732	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.51 VDO10 function

Address:	0x1733	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.52 VDO10 logic level selection

Address:	0x1734	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.53 VDO11 function

Address:	0x1735	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.54 VDO11 logic level selection

Address:	0x1736	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.55 VDO12 function

Address:	0x1737	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H17.33.

Description

-

H17.56 VDO12 logic level selection

Address:	0x1738	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.57 VDO13 function

Address:	0x1739	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H17.33.
Description
-

H17.58 VDO13 logic level selection

Address:	0x173A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0: Output 1 upon active logic
1: Output 0 upon active logic
Description
-

H17.59 VDO14 function

Address:	0x173B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	33	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H17.33.
Description
-

H17.60 VDO14 logic level selection

Address:	0x173C	Effective mode:	Real time

Min.: 0 Unit: -
Max.: 1 Data type: UInt16
Default: 0 Change: Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.61 VDO15 function

Address: 0x173D Effective mode: Real time

Min.: 0 Unit: -
Max.: 33 Data Type: UInt16
Default: 0 Change: Immediately

Value Range:

Same as H17.33.

Description

-

H17.62 VDO15 logic level selection

Address: 0x173E Effective mode: Real time

Min.: 0 Unit: -
Max.: 1 Data type: UInt16
Default: 0 Change: Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

H17.63 VDO16 function

Address: 0x173F Effective mode: Real time

Min.: 0 Unit: -
Max.: 33 Data Type: UInt16
Default: 0 Change: Immediately

Value Range:

Same as H17.33.

Description

-

H17.64 VDO16 logic level selection

Address:	0x1740	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Output 1 upon active logic

1: Output 0 upon active logic

Description

-

5.17 H18 Position Comparison Output

H18.00 Position comparison output selection

Address:	0x1800	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disable

1: Enable (rising edge-triggered)

Description

-

H18.01 Position comparison output feedback source

Address:	0x1801	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Motor encoder feedback

1: Fully closed-loop position feedback

Description

-

H18.02 Position comparison resolution

Address:	0x1802	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	7	Data Type:	UInt16
Default:	0	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

Address:	0x1803	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Individual comparison mode
1: Cyclic comparison mode
2: Fixed cyclic comparison mode

Description

-

H18.04 Current position as zero

Address:	0x1804	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: Disable
1: Enable (rising edge-triggered)

Description

-

H18.05 Position comparison output width

Address:	0x1805	Effective mode:	Real time
Min.:	0.1	Unit:	ms
Max.:	204.7	Data Type:	UInt16
Default:	0.1	Change:	Immediately

Value Range:

0.1ms to 204.7ms

Description

-

H18.06 Position comparison output ABZ port polarity

Address:	0x1806	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

-

H18.07 Position comparison start point

Address:	0x1807	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 40

Description

-

H18.08 Position comparison end point

Address:	0x1808	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	40	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 40
Description
-

H18.09 Current state of position comparison

Address:	0x1809	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1024	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 1024
Description
-

H18.10 Real-time position of position comparison

Address:	0x180A	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648 to 2147483647
Description
-

H18.12 Zero offset of position comparison

Address:	0x180C	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647

Description

-

H18.14 Position comparison output delay compensation

Address:	0x180E	Effective mode:	Upon the next power-on
Min.:	-30	Unit:	us
Max.:	30.00	Data type:	Int16
Default:	0.00	Change:	Immediately

Value Range:

-30.00us to 30.00us

Description

-

H18.15 Fixed cyclic comparison

Address:	0x180F	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:

1 to 65535

Description

-

H18.16 ABZ output function setting

Address:	0x1810	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

-

H18.17 Number of fixed mode cycles

Address:	0x1811	Effective mode:	-
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1	Change:	Unchangeable

Value Range:

1 to 65535

Description

-

5.18 H19 Target Position Parameters

H19.00 Target value of position comparison 1

Address:	0x1900	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.02 Attribute value of position comparison 1

Address:	0x1902	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 to 5	Reserved
6	Output maintaining
7	DO1 output
8	DO2 output
9	DO3 output
10	DO4 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

Address:	0x1903	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.05 Attribute value of position comparison 2

Address:	0x1905	Effective mode:	Real time
Min.:	0	Unit:	-

Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.06 Target value of position comparison 3

Address:	0x1906	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.08 Attribute value of position comparison 3

Address:	0x1908	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.09 Target value of position comparison 4

Address:	0x1909	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.11 Attribute value of position comparison 4

Address:	0x190B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.12 Target value of position comparison 5

Address:	0x190C	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.14 Attribute value of position comparison 5

Address:	0x190E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.15 Target value of position comparison 6

Address:	0x190F	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.17 Attribute value of position comparison 6

Address:	0x1911	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.18 Target value of position comparison 7

Address:	0x1912	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.20 Attribute value of position comparison 7

Address:	0x1914	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.21 Target value of position comparison 8

Address:	0x1915	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32

Default: 0 Change: Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.23 Attribute value of position comparison 8

Address: 0x1917 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H19.02.

Description

-

H19.24 Target value of position comparison 9

Address: 0x1918 Effective mode: Real time

Min.: -2147483648 Unit: -

Max.: 2147483647 Data type: Int32

Default: 0 Change: Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.26 Attribute value of position comparison 9

Address: 0x191A Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H19.02.

Description

-

H19.27 Target value of position comparison 10

Address: 0x191B Effective mode: Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.29 Attribute value of position comparison 10

Address:	0x191D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.30 Target value of position comparison 11

Address:	0x191E	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.32 Attribute value of position comparison 11

Address:	0x1920	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.33 Target value of position comparison 12

Address:	0x1921	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.35 Attribute value of position comparison 12

Address:	0x1923	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.36 Target value of position comparison 13

Address:	0x1924	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.38 Attribute value of position comparison 13

Address:	0x1926	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.

Description

-

H19.39 Target value of position comparison 14

Address:	0x1927	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.41 Attribute value of position comparison 14

Address:	0x1929	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.42 Target value of position comparison 15

Address:	0x192A	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.44 Attribute value of position comparison 15

Address:	0x192C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.45 Target value of position comparison 16

Address:	0x192D	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.47 Attribute value of position comparison 16

Address:	0x192F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.48 Target value of position comparison 17

Address:	0x1930	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.50 Attribute value of position comparison 17

Address:	0x1932	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.51 Target value of position comparison 18

Address:	0x1933	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.53 Attribute value of position comparison 18

Address:	0x1935	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.54 Target value of position comparison 19

Address:	0x1936	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.56 Attribute value of position comparison 19

Address:	0x1938	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.57 Target value of position comparison 20

Address:	0x1939	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.59 Attribute value of position comparison 20

Address:	0x193B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.60 Target value of position comparison 21

Address:	0x193C	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647

Description

-

H19.62 Attribute value of position comparison 21

Address:	0x193E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.63 Target value of position comparison 22

Address:	0x193F	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.65 Attribute value of position comparison 22

Address:	0x1941	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.66 Target value of position comparison 23

Address:	0x1942	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32

Default: 0 Change: Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.68 Attribute value of position comparison 23

Address: 0x1944 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H19.02.

Description

-

H19.69 Target value of position comparison 24

Address: 0x1945 Effective mode: Real time

Min.: -2147483648 Unit: -

Max.: 2147483647 Data type: Int32

Default: 0 Change: Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.71 Attribute value of position comparison 24

Address: 0x1947 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H19.02.

Description

-

H19.72 Target value of position comparison 25

Address: 0x1948 Effective mode: Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.74 Attribute value of position comparison 25

Address:	0x194A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.75 Target value of position comparison 26

Address:	0x194B	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.77 Attribute value of position comparison 26

Address:	0x194D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.78 Target value of position comparison 27

Address:	0x194E	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.80 Attribute value of position comparison 27

Address:	0x1950	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.81 Target value of position comparison 28

Address:	0x1951	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.83 Attribute value of position comparison 28

Address:	0x1953	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.

Description

-

H19.84 Target value of position comparison 29

Address:	0x1954	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.86 Attribute value of position comparison 29

Address:	0x1956	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.87 Target value of position comparison 30

Address:	0x1957	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.89 Attribute value of position comparison 30

Address:	0x1959	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16

Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.90 Target value of position comparison 31

Address:	0x195A	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.92 Attribute value of position comparison 31

Address:	0x195C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.93 Target value of position comparison 32

Address:	0x195D	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.95 Attribute value of position comparison 32

Address:	0x195F	Effective mode:	Real time

Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.96 Target value of position comparison 33

Address:	0x1960	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.98 Attribute value of position comparison 33

Address:	0x1962	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

H19.99 Target value of position comparison 34

Address:	0x1963	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.101 Attribute value of position comparison 34

Address:	0x1965	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.102 Target value of position comparison 35

Address:	0x1966	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.104 Attribute value of position comparison 35

Address:	0x1968	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.105 Target value of position comparison 36

Address:	0x1969	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.107 Attribute value of position comparison 36

Address:	0x196B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.108 Target value of position comparison 37

Address:	0x196C	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.110 Attribute value of position comparison 37

Address:	0x196E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

Same as H19.02.

Description

-

H19.111 Target value of position comparison 38

Address:	0x196F	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32

Default: 0 Change: Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.113 Attribute value of position comparison 38

Address: 0x1971 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H19.02.

Description

-

H19.114 Target value of position comparison 39

Address: 0x1972 Effective mode: Real time

Min.: -2147483648 Unit: -

Max.: 2147483647 Data type: Int32

Default: 0 Change: Immediately

Value Range:

-2147483648 to 2147483647

Description

-

H19.116 Attribute value of position comparison 39

Address: 0x1974 Effective mode: Real time

Min.: 0 Unit: -

Max.: 65535 Data Type: UInt16

Default: 0 Change: Immediately

Value Range:

Same as H19.02.

Description

-

H19.117 Target value of position comparison 40

Address: 0x1975 Effective mode: Real time

Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648 to 2147483647
Description
-

H19.119 Attribute value of position comparison 40

Address:	0x1977	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
Same as H19.02.
Description
-

5.19 H24 PN Bus Communication Parameters

H24.00 Message number selection [PN922]

Address:	0x2400	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	3	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H24.01 Heartbeat warning threshold [PN925]

Address:	0x2401	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	5	Change:	At stop

Value Range:
0 to 65535

Description

-

H24.02 Fault message counter [PN944]

Address:	0x2402	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H24.03 Fault code [PN947]

Address:	0x2403	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H24.04 Fault No.

Address:	0x2404	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	63	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 to 63

Description

-

H24.05 Fault condition counter [PN952]

Address:	0x2405	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0 to 65535
Description
-

H24.06 Sensor header [PN979[0]]

Address:	0x2406	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data type:	UInt32
Default:	20754	Change:	At stop

Value Range:
0 to 4294967295
Description
-

H24.08 Sensor type [PN979[1]]

Address:	0x2408	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data type:	UInt32
Default:	2147483650	Change:	At stop

Value Range:
0 to 4294967295
Description
-

H24.10 Sensor resolution [PN979[2]]

Address:	0x240A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	256	Change:	At stop

Value Range:
0 to 4294967295
Description
-

H24.12 Sensor G1_X1ST1 displacement factor [PN979[3]]

Address:	0x240C	Effective mode:	Upon the next power-on

Min.:	0	Unit:	-
Max.:	24	Data type:	UInt32
Default:	15	Change:	At stop

Value Range:
0 to 24
Description
-

H24.14 Sensor G1_X1ST2 displacement factor [PN979[4]]

Address:	0x240E	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	24	Data type:	UInt32
Default:	15	Change:	At stop

Value Range:
0 to 24
Description
-

H24.16 Sensor multi-turn number [PN979[5]]

Address:	0x2410	Effective mode:	Upon the next power-on
Min.:	0	Unit:	-
Max.:	4294967295	Data type:	UInt32
Default:	512	Change:	At stop

Value Range:
0 to 4294967295
Description
-

H24.19 Synchronization cycle

Address:	0x2413	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	999	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H24.20 Network parameter write flag

Address:	0x2414	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:
0 to 3
Description
-

H24.22 IP Address

Address:	0x2416	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	0	Data Type:	UInt32
Default:	0	Change:	Immediately

Value Range:
0 to 0
Description
-

H24.24 Subnet mask

Address:	0x2418	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	0	Data Type:	UInt32
Default:	0	Change:	Immediately

Value Range:
0 to 0
Description
-

H24.26 Default gateway

Address:	0x241A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	0	Data Type:	UInt32
Default:	0	Change:	Immediately

Value Range:
0 to 0

Description

-

H24.28 AC1 speed feedback selection

Address:	0x241C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Normal

1: High precision

Description

-

H24.32 DSC position loop gain selection

Address:	0x2420	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Local position loop gain

1: PLC position loop gain

3: DSC manual tuning

Description

-

H24.35 Customized telegram 850 transmission

Address:	0x2423	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: No assignment

1: VDO

2: External DI state

Description

-

H24.36 User-defined 850 reception

Address:	0x2424	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: No assignment

1: VDI

2: External DO state

Description

-

H24.37 Extra telegram

Address:	0x2425	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0 to 65535

Description

-

H24.38 Customized receive word

Address:	0x2426	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0: No function

1: Additive torque

2: Forced DO

Description

-

H24.39 Customized transmission word

Address:	0x2427	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	3	Data Type:	UInt16

Default:	0	Change:	Immediately

Value Range:

0: No function

1: Actual torque

2: Actual current

3: DI state

Description

-

H24.41 Device name loss warning selection

Address:	0x2429	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 1

Description

-

H24.42 Number of consecutive loss detections

Address:	0x242A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	8	Change:	Immediately

Value Range:

0 to 65535

Description

-

H24.43 Communication timeout time

Address:	0x242B	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	1000	Change:	Immediately

Value Range:

1 to 65535

Description

-

H24.44 FPGA synchronous detection deviation threshold

Address:	0x242C	Effective mode:	Real time
Min.:	0	Unit:	ns
Max.:	65535	Data type:	UInt16
Default:	3000	Change:	At stop

Value Range:
0ns to 65535ns
Description
-

H24.45 MAC address

Address:	0x242D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H24.46 MAC address

Address:	0x242E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H24.47 MAC address

Address:	0x242F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535

Description

-

H24.33 Number of Sync with advanced DSC position feedback

Address:	0x2421	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	16	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:

0 to 16

Description

-

H24.34 Loop gain selection switch

Address:	0x2422	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	1	Data type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Stiffness level adapted based on DSC gain

1: Stiffness level adapted based on H09.01

Description

-

H24.48 DSC position loop gain coefficient

Address:	0x2430	Effective mode:	Real time
Min.:	1	Unit:	-
Max.:	31	Data Type:	UInt16
Default:	4	Change:	At stop

Value Range:

1 to 31

Description

-

H24_48 DSC position loop gain coefficient

Address:	0x2430	Effective mode:	Real time
Min.:	1	Unit:	-

Max.:	31	Data Type:	UInt16
Default:	10	Change:	At stop

Value Range:
1 to 31
Description
-

5.20 H25 AC3 Control Parameters

H25.00 EPOS max. speed

Address:	0x2500	Effective mode:	Real time
Min.:	1	Unit:	1000 LU/min
Max.:	40000000	Data type:	UInt32
Default:	30000	Change:	Immediately

Value Range:
1 Lu/min–40000000 LU/min
Description
-

H25.02 EPOS max. acceleration

Address:	0x2502	Effective mode:	Real time
Min.:	1	Unit:	1000 LU/s/s
Max.:	2000000	Data type:	UInt32
Default:	100	Change:	Immediately

Value Range:
1 LU/s/s–2000000 LU/s/s
Description
-

H25.04 EPOS max. deceleration

Address:	0x2504	Effective mode:	Real time
Min.:	1	Unit:	1000 LU/s/s
Max.:	2000000	Data type:	UInt32
Default:	100	Change:	Immediately

Value Range:
1 LU/s/s–2000000 LU/s/s
Description
-

H25.06 EPOS ramp deceleration

Address:	0x2506	Effective mode:	Real time
Min.:	1	Unit:	1000 LU/s/s
Max.:	2000000	Data type:	UInt32
Default:	100	Change:	Immediately

Value Range:
1 LU/s/s–2000000 LU/s/s
Description
-

H25.10 EPOS positioning reach threshold

Address:	0x250A	Effective mode:	Real time
Min.:	0	Unit:	1LU
Max.:	2147483647	Data type:	UInt32
Default:	7	Change:	Immediately

Value Range:
0LU–2147483647LU
Description
-

H25.12 EPOS positioning reached window time

Address:	0x250C	Effective mode:	Real time
Min.:	0	Unit:	ms
Max.:	2147483647	Data type:	UInt32
Default:	0	Change:	Immediately

Value Range:
0ms to 2147483647ms
Description
-

H25.14 Jog1

Address:	0x250E	Effective mode:	Real time
Min.:	-40000000	Unit:	1000 LU/min
Max.:	40000000	Data Type:	Int32
Default:	-300	Change:	Real-time

Value Range:
-40000000 Lu/min to 40000000 LU/min

Description

-

H25.16 Jog2

Address:	0x2510	Effective mode:	Real time
Min.:	-40000000	Unit:	1000 LU/min
Max.:	40000000	Data Type:	Int32
Default:	300	Change:	Real-time

Value Range:

-40000000 Lu/min to 40000000 LU/min

Description

-

H25.18 EPOS-JOG1 position increment

Address:	0x2512	Effective mode:	Real time
Min.:	0	Unit:	LU
Max.:	2147483648	Data type:	UInt32
Default:	1000	Change:	Immediately

Value Range:

0LU–2147483648LU

Description

-

H25.20 EPOS-JOG2 position increment

Address:	0x2514	Effective mode:	Real time
Min.:	0	Unit:	LU
Max.:	2147483648	Data Type:	UInt32
Default:	1000	Change:	Immediately

Value Range:

0LU–2147483648LU

Description

-

H25.22 Homing type

Address:	0x2516	Effective mode:	Real time
Min.:	-2	Unit:	-
Max.:	35	Data Type:	Int16

Default: 0 Change: Immediately

Value Range:

-2 to 35

Description

-

H25.23 Homing high speed

Address:	0x2517	Effective mode:	Real time
Min.:	0	Unit:	1000 LU/min
Max.:	40000000	Data type:	UInt32
Default:	5000	Change:	Immediately

Value Range:

0 LU/min–40000000 LU/min

Description

-

H25.25 Homing low speed

Address:	0x2519	Effective mode:	Real time
Min.:	0	Unit:	1000 LU/min
Max.:	40000000	Data type:	UInt32
Default:	300	Change:	Immediately

Value Range:

0 LU/min–40000000 LU/min

Description

-

H25.27 Homing acc./dec. override

Address:	0x251B	Effective mode:	Real time
Min.:	0.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

0.00% to 100.00%

Description

-

5.21 H27 Program Block Parameters

H27.00 Current block

Address:	0x2700	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	15	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 15
Description
-

H27.01 Block 0 task

Address:	0x2701	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data type:	UInt16
Default:	1	Change:	Immediately

Value Range:
1: Positioning
2: Fixed stopper
3: Forward cycle
4: Reverse cycle
5: Waiting
6: Switching
7: Setting I/O
8: Resetting I/O
Description
-

H27.02 Block 1 task

Address:	0x2702	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.03 Block 2 task

Address:	0x2703	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.04 Block 3 task

Address:	0x2704	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.05 Block 4 task

Address:	0x2705	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.06 Block 5 task

Address:	0x2706	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.

Description

-

H27.07 Block 6 task

Address:	0x2707	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:

Same as H27.01.

Description

-

H27.08 Segment 7 task

Address:	0x2708	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:

Same as H27.01.

Description

-

H27.09 Block 8 task

Address:	0x2709	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:

Same as H27.01.

Description

-

H27.10 Block 9 task

Address:	0x270A	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.11 Block 10 task

Address:	0x270B	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.12 Block 11 task

Address:	0x270C	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.13 Block 12 task

Address:	0x270D	Effective mode:	At stop
Min.:	1	Unit:	-
Max.:	8	Data Type:	UInt16
Default:	1	Change:	Immediately

Value Range:
Same as H27.01.
Description
-

H27.14 Block 13 task

Address:	0x270E	Effective mode:	At stop
Min.:	1	Unit:	-

Max.: 8 Data Type: UInt16
Default: 1 Change: Immediately
Value Range:
Same as H27.01.
Description
-

H27.15 Block 14 task
Address: 0x270F Effective mode: At stop
Min.: 1 Unit: -
Max.: 8 Data Type: UInt16
Default: 1 Change: Immediately
Value Range:
Same as H27.01.
Description
-

H27.16 Block 15 task
Address: 0x2710 Effective mode: At stop
Min.: 1 Unit: -
Max.: 8 Data Type: UInt16
Default: 1 Change: Immediately
Value Range:
Same as H27.01.
Description
-

H27.17 Position of block 0
Address: 0x2711 Effective mode: At stop
Min.: -2147483648 Unit: 1LU
Max.: 2147483647 Data type: Int32
Default: 0 Change: Immediately
Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.19 Position of block 1

Address:	0x2713	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.21 Position of block 2

Address:	0x2715	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.23 Position of block 3

Address:	0x2717	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.25 Position of block 4

Address:	0x2719	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.27 Position of block 5

Address:	0x271B	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.29 Position of block 6

Address:	0x271D	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.31 Position of block 7

Address:	0x271F	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:

-2147483648LU to 2147483647LU

Description

-

H27.33 Position of block 8

Address:	0x2721	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.35 **Position of block 9**

Address:	0x2723	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.37 **Position of block 10**

Address:	0x2725	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.39 **Position of block 11**

Address:	0x2727	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Immediately

Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.41 **Position of block 12**

Address:	0x2729	Effective mode:	At stop
Min.:	-2147483648	Unit:	1LU

Max.: 2147483647 Data type: Int32
Default: 0 Change: Immediately
Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.43 Position of block 13
Address: 0x272B Effective mode: At stop
Min.: -2147483648 Unit: 1LU
Max.: 2147483647 Data type: Int32
Default: 0 Change: Immediately
Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.45 Position of block 14
Address: 0x272D Effective mode: At stop
Min.: -2147483648 Unit: 1LU
Max.: 2147483647 Data type: Int32
Default: 0 Change: Immediately
Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.47 Position of block 15
Address: 0x272F Effective mode: At stop
Min.: -2147483648 Unit: 1LU
Max.: 2147483647 Data type: Int32
Default: 0 Change: Immediately
Value Range:
-2147483648LU to 2147483647LU
Description
-

H27.49 Block 0 speed

Address:	0x2731	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.51 Block 1 speed

Address:	0x2733	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.53 Block 2 speed

Address:	0x2735	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.55 Block 3 speed

Address:	0x2737	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.57 Block 4 speed

Address:	0x2739	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.59 Block 5 speed

Address:	0x273B	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.61 Block 6 speed

Address:	0x273D	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.63 Block 7 speed

Address:	0x273F	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32

Default: 600 Change: Immediately

Value Range:

0 Lu/min–4294967295 LU/min

Description

-

H27.65 Block 8 speed

Address: 0x2741 Effective mode: At stop

Min.: 0 Unit: 1000 LU/min

Max.: 4294967295 Data type: UInt32

Default: 600 Change: Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.67 Block 9 speed

Address: 0x2743 Effective mode: At stop

Min.: 0 Unit: 1000 LU/min

Max.: 4294967295 Data type: UInt32

Default: 600 Change: Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.69 Block 10 speed

Address: 0x2745 Effective mode: At stop

Min.: 0 Unit: 1000 LU/min

Max.: 4294967295 Data type: UInt32

Default: 600 Change: Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.71 Block 11 speed

Address:	0x2747	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.73 Block 12 speed

Address:	0x2749	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.75 Block 13 speed

Address:	0x274B	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.77 Block 14 speed

Address:	0x274D	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.79 Block 15 speed

Address:	0x274F	Effective mode:	At stop
Min.:	0	Unit:	1000 LU/min
Max.:	4294967295	Data type:	UInt32
Default:	600	Change:	Immediately

Value Range:

0 LU/min–4294967295 LU/min

Description

-

H27.81 Block 0 acc. override

Address:	0x2751	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

1.00% to 100.00%

Description

-

H27.82 Block 1 acc. override

Address:	0x2752	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

1.00% to 100.00%

Description

-

H27.83 Block 2 acc. override

Address:	0x2753	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H27.84 **Block 3 acc. override**

Address:	0x2754	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H27.85 **Block 4 acc. override**

Address:	0x2755	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H27.86 **Block 5 acc. override**

Address:	0x2756	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H27.87 **Block 6 acc. override**

Address:	0x2757	Effective mode:	At stop
Min.:	1.00	Unit:	%

Max.: 100.00 Data type: UInt16
Default: 100.00 Change: Immediately
Value Range:
1.00% to 100.00%
Description
-

H27.88 Block 7 acc. override
Address: 0x2758 Effective mode: At stop
Min.: 1.00 Unit: %
Max.: 100.00 Data type: UInt16
Default: 100.00 Change: Immediately
Value Range:
1.00% to 100.00%
Description
-

H27.89 Block 8 acc. override
Address: 0x2759 Effective mode: At stop
Min.: 1.00 Unit: %
Max.: 100.00 Data type: UInt16
Default: 100.00 Change: Immediately
Value Range:
1.00% to 100.00%
Description
-

H27.90 Block 9 acc. override
Address: 0x275A Effective mode: At stop
Min.: 1.00 Unit: %
Max.: 100.00 Data type: UInt16
Default: 100.00 Change: Immediately
Value Range:
1.00% to 100.00%
Description
-

H27.91 **Block 10 acc. override**

Address:	0x275B	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

1.00% to 100.00%

Description

-

H27.92 **Block 11 acc. override**

Address:	0x275C	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

1.00% to 100.00%

Description

-

H27.93 **Block 12 acc. override**

Address:	0x275D	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

1.00% to 100.00%

Description

-

H27.94 **Block 13 acc. override**

Address:	0x275E	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:

1.00% to 100.00%

Description
-

H27.95 Block 14 acc. override

Address:	0x275F	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H27.96 Block 15 acc. override

Address:	0x2760	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

5.22 H28 Program Block Parameters

H28.00 Block 0 dec. override

Address:	0x2800	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.01 Block 1 dec. override

Address:	0x2801	Effective mode:	At stop

Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.02 Block 2 dec. override

Address:	0x2802	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.03 Block 3 dec. override

Address:	0x2803	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.04 Block 4 dec. override

Address:	0x2804	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.05 **Block 5 dec. override**

Address:	0x2805	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.06 **Block 6 dec. override**

Address:	0x2806	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.07 **Block 7 dec. override**

Address:	0x2807	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.08 **Block 8 dec. override**

Address:	0x2808	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%

Description
-

H28.09 Block 9 dec. override

Address:	0x2809	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.10 Block 10 dec. override

Address:	0x280A	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.11 Block 11 dec. override

Address:	0x280B	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.12 Block 12 dec. override

Address:	0x280C	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.13 Block 13 dec. override

Address:	0x280D	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.14 Block 14 dec. override

Address:	0x280E	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.15 Block 15 dec. override

Address:	0x280F	Effective mode:	At stop
Min.:	1.00	Unit:	%
Max.:	100.00	Data type:	UInt16
Default:	100.00	Change:	Immediately

Value Range:
1.00% to 100.00%
Description
-

H28.16 Task mode of block 0

Address:	0x2810	Effective mode:	At stop
Min.:	0	Unit:	-

Max.: 65535 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
0 to 65535
Description
-

H28.17 Task mode of block 1
Address: 0x2811 Effective mode: At stop
Min.: 0 Unit: -
Max.: 65535 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
0 to 65535
Description
-

H28.18 Task mode of block 2
Address: 0x2812 Effective mode: At stop
Min.: 0 Unit: -
Max.: 65535 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
0 to 65535
Description
-

H28.19 Task mode of block 3
Address: 0x2813 Effective mode: At stop
Min.: 0 Unit: -
Max.: 65535 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
0 to 65535
Description
-

H28.20 Task mode of block 4

Address:	0x2814	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.21 Task mode of block 5

Address:	0x2815	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.22 Task mode of block 6

Address:	0x2816	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.23 Task mode of block 7

Address:	0x2817	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535

Description

-

H28.24 Task mode of block 8

Address:	0x2818	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 65535

Description

-

H28.25 Task mode of block 9

Address:	0x2819	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 65535

Description

-

H28.26 Task mode of block 10

Address:	0x281A	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:

0 to 65535

Description

-

H28.27 Task mode of block 11

Address:	0x281B	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.28 Task mode of block 12

Address:	0x281C	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.29 Task mode of block 13

Address:	0x281D	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.30 Task mode of block 14

Address:	0x281E	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H28.31 Task mode of block 15

Address:	0x281F	Effective mode:	At stop
Min.:	0	Unit:	-

Max.: 65535 Data Type: UInt16
Default: 0 Change: Immediately
Value Range:
0 to 65535
Description
-

H28.32 Block 0 task parameter

Address: 0x2820 Effective mode: At stop
Min.: 0 Unit: -
Max.: 2147483647 Data Type: Int32
Default: 0 Change: Immediately
Value Range:
0 to 2147483647
Description
-

H28.34 Block 1 task parameter

Address: 0x2822 Effective mode: At stop
Min.: 0 Unit: -
Max.: 2147483647 Data Type: Int32
Default: 0 Change: Immediately
Value Range:
0 to 2147483647
Description
-

H28.36 Block 2 task parameter

Address: 0x2824 Effective mode: At stop
Min.: 0 Unit: -
Max.: 2147483647 Data Type: Int32
Default: 0 Change: Immediately
Value Range:
0 to 2147483647
Description
-

H28.38 Block 3 task parameter

Address:	0x2826	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:
0 to 2147483647
Description
-

H28.40 Block 4 task parameter

Address:	0x2828	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:
0 to 2147483647
Description
-

H28.42 Block 5 task parameter

Address:	0x282A	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:
0 to 2147483647
Description
-

H28.44 Block 6 task parameter

Address:	0x282C	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:
0 to 2147483647

Description

-

H28.46 Block 7 task parameter

Address:	0x282E	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:

0 to 2147483647

Description

-

H28.48 Block 8 task parameter

Address:	0x2830	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:

0 to 2147483647

Description

-

H28.50 Block 9 task parameter

Address:	0x2832	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:

0 to 2147483647

Description

-

H28.52 Block 10 task parameter

Address:	0x2834	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32

Default: 0 Change: Immediately

Value Range:

0 to 2147483647

Description

-

H28.54 Block 11 task parameter

Address: 0x2836 Effective mode: At stop

Min.: 0 Unit: -

Max.: 2147483647 Data Type: Int32

Default: 0 Change: Immediately

Value Range:

0 to 2147483647

Description

-

H28.56 Block 12 task parameter

Address: 0x2838 Effective mode: At stop

Min.: 0 Unit: -

Max.: 2147483647 Data Type: Int32

Default: 0 Change: Immediately

Value Range:

0 to 2147483647

Description

-

H28.58 Task parameter of block 13

Address: 0x283A Effective mode: At stop

Min.: 0 Unit: -

Max.: 2147483647 Data Type: Int32

Default: 0 Change: Immediately

Value Range:

0 to 2147483647

Description

-

H28.60 Block 14 task parameter

Address: 0x283C Effective mode: At stop

Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:
0 to 2147483647
Description
-

H28.62 Block 15 task parameter

Address:	0x283E	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Immediately

Value Range:
0 to 2147483647
Description
-

H28.64 Fixed stopper monitoring window

Address:	0x2840	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	4294967295	Data Type:	UInt32
Default:	0	Change:	Immediately

Value Range:
0 to 4294967295
Description
-

H28.66 Max. following error of fixed stopper

Address:	0x2842	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	4294967295	Data type:	UInt32
Default:	0	Change:	Immediately

Value Range:
0 to 4294967295
Description
-

H28.68 External trigger source

Address:	0x2844	Effective mode:	At stop
Min.:	0	Unit:	-
Max.:	1	Data Type:	UInt16
Default:	0	Change:	At stop

Value Range:

0: Triggered by STW1.bit13

1: Triggered by DI

Description

-

5.23 H29 PN Message Value

H29.00 Control word 1 (STW1)

Address:	0x2900	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

Bit0: 1 = Pulse enable allowed; 0 = OFF1, ramp to stop, pulse cleared, ready to switch on
bit1: 1 = No OFF2 (pulse enable allowed); 0 = OFF2, coast to stop, pulse cleared immediately, switch-on inhibited
bit2: 1 = No OFF3 (pulse enable allowed); 0 = OFF3 quick stop, P1135 brake, pulse cleared, switch-on inhibited
bit3: 1 = Enable allowed; 0 = Operation inhibited (pulse cleared)
bit4: 1 = Ramp function generator available; 0 = Ramp function generator inhibited
bit5:1 = Ramp function generator continued; 0 = Ramp function generator output frozen
bit6:1 = Setpoint enabled; 0 = Setpoint inhibited (ramp function generator input being zero)
bit7: Rising edge-triggered, response fault
bit8: JOG1
bit9: JOG2
bit10: 1 = PLC controlled
bit11: Reserved
bit12: Reserved
bit13: Reserved
bit14: Reserved
bit15: Reserved

Description

-

H29.01 Control word 2 (STW2)

Address:	0x2901	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H29.02 Speed setpoint A (VEL_NSOLL_A)

Address:	0x2902	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H29.04 Speed setpoint B (VEL_NSOLL_B)

Address:	0x2904	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648 to 2147483647
Description
-

H29.06 Encoder control word (G1_STW)

Address:	0x2906	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

Bit0: bit7 = 0, searching for reference point 1; bit7 = 1, measure pointer 1
bit1: bit7 = 0, searching for reference point 2; bit7 = 1, measure pointer 2
bit2: bit7 = 0, searching for reference point 3; bit7 = 1, measure pointer 3
bit3: bit7 = 0, searching for reference point 4; bit7 = 1, measure pointer 4
bit4: bit4–bit6 000b = Not activated; 001b = Selected functions activated; 010b = Read value; 011b = Cancel operation
bit5: bit4–bit6 000b = Not activated; 001b = Selected functions activated; 010b = Read value; 011b = Cancel operation
bit6: bit4–bit6 000b = Not activated; 001b = Selected functions activated; 010b = Read value; 011b = Cancel operation
bit7: Mode selection 1 = Real-time measurement 0 = Searching for the reference point
bit8: Reserved
bit9: Reserved
bit10: Reserved
bit11: Zero setting mode 0 = Absolute position 1 = Relative position
bit12: Rising edge-triggered Request for setting the zero bit
bit13: Rising edge-triggered Request for cyclic transmission of absolute position in G1_XIST2
bit14: Parking encoder
bit15: Rising-edge triggered Response encoder gripper fault

Description

-

H29.07 Position deviation (XERR)

Address:	0x2907	Effective mode:	-
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

-

H29.09 Position loop gain (KPC)

Address:	0x2909	Effective mode:	-
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

-

H29.11 Position control word 1 (POS_STW1)

Address:	0x290B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: bit0–bit5 block selection IS620F supports up to 16 blocks
bit1: bit0–bit5 block selection IS620F supports up to 16 blocks
bit2: bit0–bit5 block selection IS620F supports up to 16 blocks
bit3: bit0–bit5 block selection IS620F supports up to 16 blocks
bit4: bit0–bit5 block selection IS620F supports up to 16 blocks
bit5: bit0–bit5 block selection IS620F supports up to 16 blocks
bit6: Reserved
bit7: Reserved
bit8: 1 = Absolute positioning 0 = Relative positioning
bit9: 1 = Forward
bit10: 1 = Reverse
bit11: Reserved
bit12: 1 = Continuous transmission 0 = MDI block modification activated by running the rising edge of the program segment (STW1.6)
bit13: Reserved
bit14: 1 = Setting signal selected 0 = Positioning signal selected
bit15: 1= MDI sub-mode 0 = Program segment sub-mode

Description

-

H29.12 MDI position setting (EPOS)

Address:	0x290C	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

-

H29.14 MDI speed setting (EPOS)

Address:	0x290E	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	4294967295	Data type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:
0 to 4294967295
Description
-

H29.16 MDI acceleration override (EPOS)

Address:	0x2910	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H29.17 MDI deceleration override (EPOS)

Address:	0x2911	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H29.18 MDI mode (EPOS)

Address:	0x2912	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: 1 = Absolute positioning 0 = Relative positioning
bit1: 1 = Forward
bit2: 1 = Reverse
bit3: Reserved
bit4: Reserved
bit5: Reserved
bit6: Reserved
bit7: Reserved
bit8: Reserved
bit9: Reserved
bit10: Reserved
bit11: Reserved
bit12: Reserved
bit13: Reserved
bit14: Reserved
bit15: Reserved

Description

-

H29.19 Position control word 2 (POS_STW2)

Address:	0x2913	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: 1 = Tracking mode activated
bit1: 1 = Set reference point
bit2: 1 = Reference point stopper activated
bit3: Reserved
bit4: Reserved
bit5: 1 = JOG incremental positioning activated 0 = Speed activated
bit6: Reserved
bit7: Reserved
bit8: Reserved
bit9: 1 = Searching for the reference point in the reverse direction 0 = Start searching for the reference point in the forward direction
bit10: Reserved
bit11: Reserved
bit12: Reserved
bit13: Reserved
bit14: 1 = Software limit switch activated
bit15: 1 = Stopper activated

Description

-

H29.20 Position speed override (EPOS)

Address:	0x2914	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H29.21 Customized receive word for telegram 111

Address:	0x2915	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H29.22 Torque reduction (MOMRED)

Address:	0x2916	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	16363	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 16363
Description
-

H29.23 Torque reference (AdditiveTorque)

Address:	0x2917	Effective mode:	Real time
Min.:	-32768	Unit:	-
Max.:	32767	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:
-32768 to 32767
Description
-

H29.24 Torque upper limit

Address:	0x2918	Effective mode:	Real time
Min.:	-32768	Unit:	-
Max.:	32767	Data type:	Int16
Default:	0	Change:	Unchangeable

Value Range:
-32768 to 32767
Description
-

H29.25 Torque lower limit

Address:	0x2919	Effective mode:	Real time
Min.:	-32768	Unit:	-
Max.:	32767	Data type:	Int16
Default:	0	Change:	Unchangeable

Value Range:
-32768 to 32767

Description

-

H29.26 Customized receive word for 850 additive telegram

Address:	0x291A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	-1	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

0 to -1

Description

-

H29.27 Message word (EPOS_MELDW)

Address:	0x291B	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	-1	Data Type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

0 to -1

Description

-

H29.50 Status word 1 (ZSW1)

Address:	0x2932	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: 1 = Ready to switch on, control circuit switched on, initialization done
bit1: 1 = Ready to run, main circuit switched on
bit2: 1 = Run enable
bit3: 1 = Fault
bit4: 1 = Coast to stop deactivated (OFF2 deactivated) 0 = Cost to stop activated (OFF2 activated)
bit5: 1 = Quick stop deactivated (OFF2 deactivated) 0 = Quick stop activated (OFF2 activated)
bit6: 1 = Switch-on inhibited
bit7: 1 = Warning existed
bit8: Reserved
bit9: 1 = PLC control request
bit10: Reserved
bit11: Reserved
bit12: Reserved
bit13: Reserved
bit14: Reserved
bit15: Reserved

Description

-

H29.51 Status word 2 (ZSW2)

Address:	0x2933	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: Reserved
bit1: Reserved
bit2: Reserved
bit3: Reserved
bit4: Reserved
bit5: Reserved
bit6: Reserved
bit7: Reserved
bit8: Reserved
bit9: Reserved
bit10: Reserved
bit11: Reserved
bit12: bit12–bit15 drive heartbeat count value, uploaded to PLC
bit13: bit12–bit15 drive heartbeat count value, uploaded to PLC
bit14: bit12–bit15 drive heartbeat count value, uploaded to PLC
bit15: bit12–bit15 drive heartbeat count value, uploaded to PLC

Description

-

H29.52 Speed actual value A (VEL_NIST_A)

Address:	0x2934	Effective mode:	Real time
Min.:	-32768	Unit:	-
Max.:	32767	Data type:	Int16
Default:	0	Change:	Unchangeable

Value Range:

-32768 to 32767

Description

-

H29.53 Speed actual B (VEL_NSOLL_B)

Address:	0x2935	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data Type:	Int32
Default:	0	Change:	Unchangeable

Value Range:

-2147483648 to 2147483647

Description

-

H29.55 Encoder status word (G1_ZSW)

Address:	0x2937	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: 1 = Function 1 activated
bit1: 1 = Function 2 activated
bit2: 1 = Function 3 activated
bit3: 1 = Function 4 activated
bit4: 1 = Actual value 1 readable
bit5: 1 = Actual value 2 readable
bit6: 1 = Actual value 3 readable
bit7: 1 = Actual value 4 readable
bit8: Touch probe 1
bit9:Touch probe 2
bit10: Reserved
bit11: Response encoder fault
bit12: Set zero response
bit13: Cyclic transmission of the absolute position in G1_XIST2
bit14: Parking encoder activated
bit15: The encoder is faulty.

Description

-

H29.56 Encoder 1 position actual value 1 (G1_XIST1)

Address:	0x2938	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	0	Data type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0 to 0

Description

-

H29.58 Encoder 1 position actual value 2 (G1_XIST2)

Address:	0x293A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	0	Data type:	UInt32

Default:	0	Change:	Unchangeable

Value Range:

0 to 0

Description

-

H29.60 Position status word 1 (POS_ZSW1)

Address:	0x293C	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: bit0–bit5 effective traversing block IS620F supports up to 16 blocks
bit1: bit0–bit5 effective traversing block IS620F supports up to 16 blocks
bit2:bit0–bit5 effective traversing block IS620F supports up to 16 blocks
bit3:bit0–bit5 effective traversing block IS620F supports up to 16 blocks
bit4:bit0–bit5 effective traversing block IS620F supports up to 16 blocks
bit5:bit0–bit5 effective traversing block IS620F supports up to 16 blocks
bit6: Reserved
bit7: Reserved
bit8: 1 = Reverse stopper activated
bit9: 1 = Forward stopper activated
bit10: 1 = JOG activatedbit11: 1 = Proactive reference point approach activatedbit12: Reservedbit13: 1 = Running block activatedbit14: 1 = Setting activatedbit15: 1 = MDI activated 0 = MDI deactivated

Description

-

H29.61 Position status word 2 (POS_ZSW2)

Address:	0x293D	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

bit0: 1 = Tracking mode activated
bit1: 1 = Speed limit activated
bit2: 1 = Setpoint available
bit3: Reserved
bit4: 1 = Axis moving forwardly
bit5: 1 = Axis moving reversely
bit6: 1 = Negative limit switch reached
bit7: 1 = Positive limit switch reached
bit8: 1 = Position actual value < = Limit switch position 1
bit9: 1 = Position actual value < = limit switch position 2
bit10: 1 = Direct output 1 through running block setting
bit11: 1 = Direct output 2 through running block setting
bit12: 1 = Fixed stop point reached
bit13: 1 = Fixed stop point fastening torque reached
bit14: 1 = Running to the fixed stop point activated
bit15: 1 = Running command effective

Description

-

H29.63 Customized send word for telegram 111

Address:	0x293F	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H29.65 Fault code

Address:	0x2941	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H29.66 Warning code

Address:	0x2942	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H29.67 Actual torque

Address:	0x2943	Effective mode:	Real time
Min.:	32768	Unit:	-
Max.:	32767	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
32768 to 32767
Description
-

H29.68 User-defined send word for 850 additive telegram

Address:	0x2944	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

H29.69 XIST_A position feedback

Address:	0x2945	Effective mode:	Real time
Min.:	-2147483648	Unit:	-
Max.:	2147483647	Data type:	Int32
Default:	0	Change:	Unchangeable

Value Range:
-2147483648 to 2147483647

Description

-

H29.90 Modulo axis modulus

Address:	0x295A	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	2147483647	Data Type:	UInt32
Default:	0	Change:	Unchangeable

Value Range:

0 to 2147483647

Description

-

5.24 H30 Related Variables Read through Communication

H30.00 Servo state read by communication

Address:	0x3000	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H30.01 DO function state 1 read through communication

Address:	0x3001	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:

0 to 65535

Description

-

H30.02 DO function state 2 read through communication

Address:	0x3002	Effective mode:	-

Min.:	0	Unit:	-
Max.:	65535+H941	Data type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0–65535+H941
Description
-

H30.03 Input pulse reference sampling read via communication

Address:	0x3003	Effective mode:	-
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Unchangeable

Value Range:
0 to 65535
Description
-

5.25 H31 Communication Setting

H31.00 VDI virtual level set through communication

Address:	0x3100	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535
Description
-

H31.04 DO state set through communication

Address:	0x3104	Effective mode:	Real time
Min.:	0	Unit:	-
Max.:	65535	Data Type:	UInt16
Default:	0	Change:	Immediately

Value Range:
0 to 65535

Description

-

H31.05 AO set through communication

Address:	0x3105	Effective mode:	Real time
Min.:	-10000	Unit:	mV
Max.:	10000	Data type:	Int16
Default:	0	Change:	Immediately

Value Range:

-10000mV to 10000mV

Description

-

H31.09 Speed reference set via communication

Address:	0x3109	Effective mode:	Real time
Min.:	-6000	Unit:	RPM
Max.:	6000.000	Data type:	Int32
Default:	0.000	Change:	Immediately

Value Range:

-6000.000 RPM to 6000.000 RPM

Description

-

H31.11 Torque reference set via communication

Address:	0x310B	Effective mode:	Real time
Min.:	-100	Unit:	%
Max.:	100.000	Data Type:	Int32
Default:	0.000	Change:	Immediately

Value Range:

-100.000% to 100.000%

Description

-

6 Parameter List

6.1 Parameter Group H00

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H00.00	2000-01h	Motor SN	0 to 65535	14101	-	At stop	*" H00_en.00" on page 52*
H00.02	2000-03h	Customized No.	0.00 to 4294967295.00	0.00	-	Unchangeable	*" H00_en.02" on page 52*
H00.04	2000-05h	Encoder version	0.0 to 6553.5	0.0	-	Unchangeable	*" H00_en.04" on page 52*
H00.05	2000-06h	Serial-type motor code	0 to 65535	0	-	Unchangeable	*" H00_en.05" on page 53*
H00.06	2000-07h	FPGA customized No.	0.00 to 655.35	0.00	-	Unchangeable	*" H00_en.06" on page 53*
H00.07	2000-08h	STO version	0.0 to 6553.5	0.0	-	Unchangeable	*" H00_en.07" on page 53*
H00.08	2000-09h	Serial encoder type	0 to 65535	0	-	At stop	*" H00_en.08" on page 53*

6.2 Parameter Group H01

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H01.00	2001-01h	MCU software version	0.0 to 6553.5	0.0	-	Unchangeable	*" H01_en.00" on page 54*
H01.01	2001-02h	FPGA software version	0.0 to 6553.5	0.0	-	Unchangeable	*" H01_en.01" on page 54*
H01.02	2001-03h	Servo drive series No.	0 to 65535	0	-	Unchangeable	*" H01_en.02" on page 54*
H01.08	2001-09h	Model parameter version 1	0.0 to 6553.5	0.0	-	Unchangeable	*" H01_en.08" on page 55*
H01.09	2001-0Ah	Model parameter version 2	0 to 65535	0	-	Unchangeable	*" H01_en.09" on page 55*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H01.10	2001-0Bh	Drive series No.	2: S1R6 3: S2R8 5: S5R5 60005: S6R6 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 55*
H01.11	2001-0Ch	DC-AC voltage class	0V to 65535V	220	V	Unchangeable	*" H01_en.11" on page 56*
H01.12	2001-0Dh	Drive rated power	0.00 kW–10737418.24 kW	0.40	kW	Unchangeable	*" H01_en.12" on page 56*
H01.14	2001-0Fh	Max. output power of the drive	0.00 kW–10737418.24 kW	0.40	kW	Unchangeable	*" H01_en.14" on page 57*
H01.16	2001-11h	Rated output current of the drive	0.00A to 10737418.24A	2.80	A	Unchangeable	*" H01_en.16" on page 57*
H01.18	2001-13h	Max. output current of the drive	0.00A to 10737418.24A	10.10	A	Unchangeable	*" H01_en.18" on page 57*
H01.40	2001-29h	DC bus overvoltage protection threshold	0V to 2000V	420	V	Real-time	*" H01_en.40" on page 57*
H01.75	2001-4Ch	Current loop amplification factor	0.00 to 655.35	1.00	-	Real-time	*" H01_en.75" on page 58*
H01.88	2001-59h	Junction temperature parameter version 1	0.0 to 6553.5	0.0	-	Unchangeable	*" H01_en.88" on page 58*
H01.89	2001-5Ah	Junction temperature parameter version 2	0 to 65535	0	-	Unchangeable	*" H01_en.89" on page 58*

6.3 Parameter Group H02

Parameter	Hex	Name	Setpoint	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 11: PN communication mode	11	-	At stop	" H02_en.00" on page 59
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 warning) 4: Absolute position single-turn mode 5: Absolute position rotational mode, modal axis single modal revolution absolute command	0	-	At stop	" H02_en.01" on page 59
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 59

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H02.05	2002-06h	Stop mode at S-ON OFF	-5: Stop in PN communication state (ramp-to-stop/quick stop/coast-to-stop), keeping dynamic braking state -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 3: Stop in PN communication state (ramp-to-stop/quick stop/coast-to-stop), keeping de-energized state	3	-	Immediately	" H02_en.05" on page 61
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	-	Immediately	" H02_en.06" on page 62

Parameter	Hex	Name	Setpoint	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 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	8	-	Immediately	" H02_en.07" on page 62
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	-	Immediately	" H02_en.08" on page 63
H02.09	2002-0Ah	Delay from brake output ON to command received	0 ms to 500 ms	250	ms	Real-time	" H02_en.09" on page 63
H02.10	2002-0Bh	Delay from brake output OFF to motor de-energized	50 ms to 1000 ms	150	ms	Real-time	" H02_en.10" on page 63
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 64
H02.12	2002-0Dh	Delay from S-ON OFF to brake output OFF in rotation state	1 ms to 65535 ms	500	ms	Real-time	" H02_en.12" on page 64
H02.15	2002-10h	LED warning display	0: Output warning information immediately 1: Not output warning information	0	-	Real-time	" H02_en.15" on page 64

Parameter	Hex	Name	Setpoint	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 H0206 2: Stop at S-ON OFF as defined by H0205 3: Stop quickly as defined by H0218	2	-	Real-time	" H02_en.17" on page 65
H02.18	2002-13h	DI emergency stop mode selection	0: Coast to stop, keeping de-energized state 1: Ramp 1 stop, keeping de-energized state 2: Ramp 2 stop, keeping de-energized stat 3: Stop at emergency stop torque, keeping de-energized state	2	-	Real-time	" H02_en.18" on page 65
H02.21	2002-16h	Permissible minimum resistance of regenerative resistor	1Ω to 1000 Ω	40	Ω	Unchangeable	" H02_en.21" on page 65
H02.22	2002-17h	Power of built-in regenerative resistor	0W to 65535W	50	W	Unchangeable	" H02_en.22" on page 66
H02.23	2002-18h	Resistance of built-in regenerative resistor	0Ω to 65535Ω	50	Ω	Unchangeable	" H02_en.23" on page 66
H02.24	2002-19h	Resistor heat dissipation coefficient	10%–100%	30	%	Real-time	" H02_en.24" on page 67
H02.25	2002-1Ah	Regenerative 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 68
H02.26	2002-1Bh	Power of external regenerative resistor	1W to 65535W	40	W	Real-time	" H02_en.26" on page 68
H02.27	2002-1Ch	Resistance of external regenerative resistor	15 Ω to 1000 Ω	50	Ω	Real-time	" H02_en.27" on page 68
H02.30	2002-1Fh	User password	0 to 65535	0	-	Real-time	" H02_en.30" on page 69
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 69

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H02.32	2002-21h	Selection of parameters in group H0b	0 to 99	50	-	Real-time	*" H02_en.32" on page 69*
H02.33	2002-22h	200P software version	0.0 to 65535.0	0.0	-	Unchangeable	*" H02_en.33" on page 69*
H02.35	2002-24h	Keypad data update frequency	0Hz–20Hz	0	Hz	Real-time	*" H02_en.35" on page 70*
H02.41	2002-2Ah	Manufacturer password	0 to 65535	0	-	Real-time	*" H02_en.41" on page 70*

6.4 Parameter Group H03

Parameter	Hex	Name	Setpoint	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 70*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
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 71
H03.02	2003-03h	DI1 function selection	0: Undefined 1: S-ON 3: Gain switchover 14: Forward overtravel switch 15: Reverse overtravel switch 16: Positive external torque limit 17: Negative external torque limit 18: Forward jog 19: Reverse jog 31: Home switch 32: Homing enabled 34: Emergency stop 36: Internal speed limit source 38: Probe 1 39: Probe 2 41: Current position as home 56: EPOS program block external toggle switch	14	-	Real-time	" H03_en.02" on page 72
H03.03	2003-04h	DI1 logic selection	0: Active low 1: Active high	0	-	Real-time	" H03_en.03" on page 73
H03.04	2003-05h	DI2 function selection	Same as H03.02.	15	-	Real-time	" H03_en.04" on page 73

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H03.05	2003-06h	DI2 logic selection	0: Active low 1: Active high	0	-	Real-time	" H03_en.05" on page 74
H03.06	2003-07h	DI3 function selection	Same as H03.02.	31	-	Real-time	" H03_en.06" on page 74
H03.07	2003-08h	DI3 logic selection	0: Active low 1: Active high	0	-	Real-time	" H03_en.07" on page 74
H03.08	2003-09h	DI4 function selection	Same as H03.02.	34	-	Real-time	" H03_en.08" on page 75
H03.09	2003-0Ah	DI4 logic selection	0: Active low 1: Active high	0	-	Real-time	" H03_en.09" on page 75
H03.10	2003-0Bh	DI5 function selection	Same as H03.02.	38	-	Real-time	" H03_en.10" on page 75
H03.11	2003-0Ch	DI5 logic selection	0: Active low 1: Active high	0	-	Real-time	" H03_en.11" on page 75
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 77

Parameter	Hex	Name	Setpoint	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 78
H03.60	2003-3Dh	DI1 filter time	0.00 ms to 500.00 ms	3.00	ms	Real-time	" H03_en.60" on page 80
H03.61	2003-3Eh	DI2 filter time	0.00 ms to 500.00 ms	3.00	ms	Real-time	" H03_en.61" on page 81
H03.62	2003-3Fh	DI3 filter time	0.00 ms to 500.00 ms	3.00	ms	Real-time	" H03_en.62" on page 81
H03.63	2003-40h	DI4 filter time	0.00 ms to 500.00 ms	3.00	ms	Real-time	" H03_en.63" on page 81
H03.64	2003-41h	DI5 filter time	0.00 ms to 500.00 ms	3.00	ms	Real-time	" H03_en.64" on page 81

6.5 Parameter Group H04

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H04.00	2004-01h	DO1 function selection	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 16: Homing completed 18: Torque reached signal 19: Speed reached signal 21: Enable completed 25: Comparison output 30: Warning or fault output 32: EDM output	1	-	Real-time	" H04_en.00" on page 83
H04.01	2004-02h	DO1 logic selection	0: Normally open 1: Closed	0	-	Real-time	" H04_en.01" on page 84
H04.02	2004-03h	DO2 function selection	See H04.00.	11	-	Real-time	" H04_en.02" on page 85
H04.03	2004-04h	DO2 logic selection	0: Normally open 1: Closed	0	-	Real-time	" H04_en.03" on page 85
H04.04	2004-05h	DO3 function selection	See H04.00.	9	-	Real-time	" H04_en.04" on page 85
H04.05	2004-06h	DO3 logic selection	0: Normally open 1: Closed	0	-	Real-time	" H04_en.05" on page 85
H04.22	2004-17h	DO source selection	bit0: DO1 0: DO1 function output 1: H04.bit0 bit1: DO2 0: DO2 function output 1: H04.bit1 bit2: DO3 0: DO3 function output 1: H04.bit2	0	-	Real-time	" H04_en.22" on page 87

6.6 Parameter Group H05

Param	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H05.02	2005-03h	Pulses per revolution	0 PPR to 4294967295 PPR	0	PPR	At stop	"H05_en.02" on page 90
H05.04	2005-05h	First-order low-pass filter time constant	0.0 ms to 6553.5 ms	0.0	ms	At stop	"H05_en.04" on page 90
H05.06	2005-07h	Moving average filter time constant 1	0.0 ms to 128.0 ms	0.0	ms	At stop	"H05_en.06" on page 91
H05.07	2005-08h	Electronic gear ratio 1 (numerator)	1 to 1073741824	8388608	-	Real-time	"H05_en.07" on page 91
H05.09	2005-0Ah	Electronic gear ratio 1 (denominator)	1 to 1073741824	10000	-	Real-time	"H05_en.09" on page 91
H05.11	2005-0Ch	Electronic gear ratio 2 (numerator)	1 to 1073741824	8388608	-	Real-time	"H05_en.11" on page 92
H05.13	2005-0Eh	Electronic gear ratio 2 (denominator)	1 to 1073741824	10000	-	Real-time	"H05_en.13" on page 92
H05.16	2005-11h	Clear action	0: Position deviation cleared upon S-OFF or non-operational state 1: Position deviation cleared upon S-OFF or fault 2: Position deviation cleared upon S-OFF or active DI function 35	0	-	At stop	"H05_en.16" on page 92
H05.19	2005-14h	Speed feedforward control	0: No speed feedforward 1: Internal speed feedforward 2: PLC speed feedforward	1	-	At stop	"H05_en.19" on page 93

Param	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H05.20	2005-15h	Condition for positioning completed signal output	0: Abs. position deviation below H05.21 1: Abs. position deviation below H05.21; filtered position ref. is 0 2: Abs. position deviation below H05.21; unfiltered position ref. is 0 3: Abs. position deviation kept below H05.21 within the time set by H05.60; unfiltered position ref. is 0 4: Abs. position deviation below threshold, window time being active and filtered position ref. being 0 5: Abs. position deviation below threshold, with zero speed signal being active and filtered position ref. being 0 6: Abs. position deviation below threshold, with zero speed signal being active and filtered position ref. being 0 7: COIN signal judged after the change (avail.→unavail.) of position ref. kept active for the defined window time, with filtered position ref. being 0 and position deviation below threshold 8: COIN signal judged after the change (avail.→unavail.) of filtered position ref. kept active for the defined window time, with filtered position ref. being 0 and position deviation below threshold 9: COIN signal judged after the change (avail.→unavail.) of position ref. kept active for the defined window time, with filtered position ref. being 0 and position deviation below threshold 10: COIN signal judged after the change (avail.→unavail.) of filtered position ref. kept active for the defined window time, with filtered position ref. being 0 and position deviation below threshold	0	-	Real-time	*" H05_ en.20" on page 93*
H05.21	2005-16h	Threshold of positioning completed	1 to 65535	7	Encoder unit	Real-time	*" H05_ en.21" on page 94*

Param	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H05.22	2005-17h	Proximity threshold	1 to 65535	65535	Encoder unit	Real-time	" H05_en.22" on page 95
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 96
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 96
H05.34	2005-23h	Acceleration/ Deceleration time during homing	0 ms to 1000 ms	1000	ms	Real-time	" H05_en.34" on page 96
H05.35	2005-24h	Home search time limit	0 ms to 65535 ms	10000	ms	Real-time	" H05_en.35" on page 97
H05.36	2005-25h	Mechanical home offset	-2147483648 to 2147483647	0	Reference unit	Real-time	" H05_en.36" on page 97
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 98
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	-	At stop	" H05_en.40" on page 98
H05.50	2005-33h	Mechanical gear ratio in absolute position rotation mode (numerator)	1 to 65535	1	-	At stop	" H05_en.50" on page 100

Param	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H05.51	2005-34h	Mechanical gear ratio in absolute position rotation mode (denominator)	1 to 65535	1	-	At stop	" H05_ en.51" on page 101
H05.52	2005-35h	Pulses per revolution of the load in absolute position rotation mode (low 32 bits)	0 to 2147483647	0	Encoder unit	At stop	" H05_ en.52" on page 101
H05.54	2005-37h	Pulses per revolution of the load in absolute position rotation mode (high 32 bits)	0 to 2147483647	0	Encoder unit	At stop	" H05_ en.54" on page 101
H05.56	2005-39h	Speed threshold in homing upon hit-and-stop	0 rpm to 1000 rpm	2	RPM	Real-time	" H05_ en.56" on page 101
H05.58	2005-3Bh	Torque threshold in homing upon hit-and-stop	0.0%–300.0%	100.0	%	Real-time	" H05_ en.58" on page 102
H05.59	2005-3Ch	Positioning window time	0 ms to 30000 ms	0	ms	Real-time	" H05_ en.59" on page 102
H05.60	2005-3Dh	Hold time of positioning completed	0 ms to 30000 ms	0	ms	Real-time	" H05_ en.60" on page 102
H05.66	2005-43h	Homing time unit	0: 1 ms 1: 10 ms 2: 100 ms	2	-	At stop	" H05_ en.66" on page 103
H05.67	2005-44h	Offset between zero point and single-turn absolute position	-2147483648 to 2147483647	0	1 encoder unit	At stop	" H05_ en.67" on page 103
H05.69	2005-46h	Auxiliary homing function	0: Inhibited 1: Record offset position 2: Clear offset position	0	-	At stop	" H05_ en.69" on page 103

Param	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H05.70	2005-47h	Moving average filter time constant 2	0.0 ms to 1000.0 ms	0.0	ms	At stop	" H05_en.70" on page 103
H05.71	2005-48h	Motor Z signal width	0 ms to 100 ms	4	ms	Real-time	" H05_en.71" on page 104
H05.80	2005-51h	Reference operation mode in rotation mode	0 to 4	0	-	At stop	" H05_en.80" on page 104

6.7 Parameter Group H06

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H06.00	2006-01h	Source of main speed reference A	0: Digital setting (H06.03)	0	-	At stop	" H06_en.00" on page 105
H06.01	2006-02h	Source of auxiliary speed reference B	0: Digital setting (H06.03) 5: Multi-speed reference	0	-	At stop	" H06_en.01" on page 105
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 105
H06.03	2006-04h	Speed reference set through keypad	-10000 RPM to +10000 RPM	200	RPM	Real-time	" H06_en.03" on page 106
H06.04	2006-05h	DI speed reference	0 rpm to 10000 rpm	150	RPM	Real-time	" H06_en.04" on page 106
H06.05	2006-06h	Acceleration ramp time of speed reference	0 ms to 65535 ms	0	ms	Real-time	" H06_en.05" on page 106
H06.06	2006-07h	Deceleration ramp time of speed reference	0 ms to 65535 ms	0	ms	Real-time	" H06_en.06" on page 106
H06.07	2006-08h	Max. speed limit	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.07" on page 107

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H06.08	2006-09h	Forward speed limit	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.08" on page 107
H06.09	2006-0Ah	Reverse speed limit	0 rpm to 10000 rpm	7000	RPM	Real-time	" H06_en.09" on page 107
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 107
H06.11	2006-0Ch	Torque feedforward control	0: No torque feedforward 1: Internal torque feedforward	1	-	Real-time	" H06_en.11" on page 108
H06.12	2006-0Dh	Acceleration ramp time of jog speed	0 ms to 65535 ms	10	ms	Real-time	" H06_en.12" on page 108
H06.13	2006-0Eh	Speed feedforward smoothing filter	0 us to 65535 us	0	us	Real-time	" H06_en.13" on page 109
H06.15	2006-10h	Zero clamp speed threshold	0 rpm to 10000 rpm	10	RPM	Real-time	" H06_en.15" on page 109
H06.16	2006-11h	Threshold of TGON (motor rotation) signal	0 rpm to 1000 rpm	20	RPM	Real-time	" H06_en.16" on page 109
H06.17	2006-12h	Threshold of V-Cmp (speed matching) signal	0 rpm to 100 rpm	10	RPM	Real-time	" H06_en.17" on page 109
H06.18	2006-13h	Threshold of speed reach signal	20 rpm to 10000 rpm	1000	RPM	Real-time	" H06_en.18" on page 110
H06.19	2006-14h	Threshold of zero speed output signal	1 rpm to 10000 rpm	10	RPM	Real-time	" H06_en.19" on page 110
H06.36	2006-25h	Moving average filter time constant of speed references	0 ms to 32 ms	0	ms	At stop	" H06_en.36" on page 110
H06.40	2006-29h	Deceleration time of ramp 1/ PN ramp stop	0 ms to 65535 ms	0	ms	At stop	" H06_en.40" on page 110
H06.41	2006-2Ah	Dec. time of ramp 2/PN quick stop	0 ms to 65535 ms	0	ms	At stop	" H06_en.41" on page 111
H06.50	2006-33h	Speed S-curve enable switch	0 to 1	0	-	At stop	" H06_en.50" on page 111

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H06.51	2006-34h	Increasing acceleration of speed S-curve acceleration segment	0.0%–100.0%	50.0	%	At stop	" H06_en.51" on page 111
H06.52	2006-35h	Decreasing acceleration of speed S-curve acceleration segment	0.0%–100.0%	50.0	%	At stop	" H06_en.52" on page 111
H06.53	2006-36h	Increasing acceleration of speed S-curve deceleration segment	0.0%–100.0%	50.0	%	At stop	" H06_en.53" on page 112
H06.54	2006-37h	Decreasing acceleration of speed S-curve deceleration segment	0.0%–100.0%	50.0	%	At stop	" H06_en.54" on page 112

6.8 Parameter Group H07

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H07.00	2007-01h	Source of main torque reference A	0: Keypad (H7.03)	0	-	At stop	" H07_en.00" on page 112
H07.01	2007-02h	Source of auxiliary torque reference B	0: Keypad (H7.03)	0	-	At stop	" H07_en.01" on page 113
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 113
H07.03	2007-04h	Torque reference set through keypad	-400.0%–400.0%	0.0	%	Real-time	" H07_en.03" on page 113
H07.05	2007-06h	Torque reference filter time constant 1	0.00 ms to 30.00 ms	0.50	ms	Real-time	" H07_en.05" on page 114

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H07.06	2007-07h	Torque reference filter time constant 2	0.00 ms to 30.00 ms	0.27	ms	Real-time	" H07_en.06" on page 114
H07.07	2007-08h	Torque Limit source	0: Positive/Negative internal torque limit 5: PN torque limit	0	-	Real-time	" H07_en.07" on page 114
H07.09	2007-0Ah	Positive internal torque limit	0.0%–400.0%	350.0	%	Real-time	" H07_en.09" on page 114
H07.10	2007-0Bh	Negative internal torque limit	0.0%–400.0%	350.0	%	Real-time	" H07_en.10" on page 115
H07.11	2007-0Ch	Positive external torque limit	0.0%–400.0%	350.0	%	Real-time	" H07_en.11" on page 115
H07.12	2007-0Dh	Negative external torque limit	0.0%–400.0%	350.0	%	Real-time	" H07_en.12" on page 115
H07.15	2007-10h	Emergency-stop torque	0.0%–400.0%	100.0	%	Real-time	" H07_en.15" on page 116
H07.17	2007-12h	Speed limit source	0: Internal speed limit 2: H07.19 or H07.20 as defined by DI	0	-	Real-time	" H07_en.17" on page 116
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 116
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 116
H07.21	2007-16h	Torque reach base value	0.0%–300.0%	0.0	%	Real-time	" H07_en.21" on page 117
H07.22	2007-17h	Torque reach valid value	0.0%–400.0%	20.0	%	Real-time	" H07_en.22" on page 117
H07.23	2007-18h	Torque reach invalid value	0.0%–400.0%	10.0	%	Real-time	" H07_en.23" on page 117
H07.24	2007-19h	Field weakening depth	60%–115%	115	%	Real-time	" H07_en.24" on page 117
H07.25	2007-1Ah	Max. permissible demagnetizing current	0%–200%	100	%	Real-time	" H07_en.25" on page 118

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H07.26	2007-1Bh	Field weakening selection	0: Disabled 1: Enabled	0	-	At stop	" H07_en.26" on page 118
H07.27	2007-1Ch	Flux weakening gain	0.001Hz–1.000Hz	0.030	Hz	Real-time	" H07_en.27" on page 118
H07.28	2007-1Dh	Speed of flux weakening point	0 to 65535	0	-	Unchangeable	" H07_en.28" on page 119
H07.36	2007-25h	Time constant of low-pass filter 2	0.00 ms to 10.00 ms	0.00	ms	Real-time	" H07_en.36" on page 119
H07.37	2007-26h	Torque reference filter selection	0: First-order filter 1: Biquad filter	0	-	Real-time	" H07_en.37" on page 119
H07.38	2007-27h	Biquad filter attenuation ratio	0 to 50	16	-	At stop	" H07_en.38" on page 119
H07.40	2007-29h	Speed limit threshold in torque control mode	0.0 ms to 30.0 ms	1.0	ms	Real-time	" H07_en.40" on page 120

6.9 Parameter Group H08

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H08.00	2008-01h	Speed loop gain	0.1Hz to 2000.0Hz	40.0	Hz	Real-time	" H08_en.00" on page 120
H08.01	2008-02h	Speed loop integral time constant	0.15 ms to 512.00 ms	19.89	ms	Real-time	" H08_en.01" on page 120
H08.02	2008-03h	Position loop gain	0.1Hz to 2000.0Hz	64.0	Hz	Real-time	" H08_en.02" on page 121
H08.03	2008-04h	2nd speed loop gain	0.1Hz to 2000.0Hz	75.0	Hz	Real-time	" H08_en.03" on page 121
H08.04	2008-05h	2nd speed loop integral time constant	0.15 ms to 512.00 ms	10.61	ms	Real-time	" H08_en.04" on page 121
H08.05	2008-06h	2nd position loop gain	0.1Hz to 2000.0Hz	120.0	Hz	Real-time	" H08_en.05" on page 122

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H08.08	2008-09h	2nd gain mode setting	0: Fixed to the 1st group of gains, P/PI switched through external DI1:Switched between the 1st and 2nd group of gains as defined by H08.09	1	-	Real-time	" H08_en.08" on page 122
H08.09	2008-0Ah	Gain switchover condition	0: Fixed to the 1st gain set (PS) 1: Switched as defined by Func3 of DI 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 122
H08.10	2008-0Bh	Gain switchover delay	0.0 ms to 1000.0 ms	5.0	ms	Real-time	" H08_en.10" on page 124
H08.11	2008-0Ch	Gain switchover level	0 to 20000	50	-	Real-time	" H08_en.11" on page 125
H08.12	2008-0Dh	Gain switchover hysteresis	0 to 20000	30	-	Real-time	" H08_en.12" on page 125
H08.13	2008-0Eh	Position gain switchover time	0.0 ms to 1000.0 ms	3.0	ms	Real-time	" H08_en.13" on page 125
H08.15	2008-10h	Load moment of inertia ratio	0.00 to 120.00	1.00	-	Real-time	" H08_en.15" on page 126
H08.17	2008-12h	Zero phase delay	0.0 ms to 4.0 ms	0.0	ms	Real-time	" H08_en.17" on page 126
H08.18	2008-13h	Time constant of speed feedforward filter	0.00 ms to 64.00 ms	0.50	ms	Real-time	" H08_en.18" on page 126
H08.19	2008-14h	Speed feedforward gain	0.0%–100.0%	0.0	%	Real-time	" H08_en.19" on page 127

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H08.20	2008-15h	Torque feedforward filter time constant	0.00 ms to 64.00 ms	0.50	ms	Real-time	" H08_en.20" on page 127
H08.21	2008-16h	Torque feedforward gain	0.0%–300.0%	0.0	%	Real-time	" H08_en.21" on page 127
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 127
H08.23	2008-18h	Cutoff frequency of speed feedback low-pass filter	100Hz to 8000Hz	8000	Hz	Real-time	" H08_en.23" on page 128
H08.24	2008-19h	PDFF control coefficient	0.0%–200.0%	100.0	%	Real-time	" H08_en.24" on page 128
H08.27	2008-1Ch	Speed observer cutoff frequency	50Hz to 600Hz	170	Hz	Real-time	" H08_en.27" on page 128
H08.28	2008-1Dh	Speed observer inertia correction coefficient	1%–1600%	100	%	Real-time	" H08_en.28" on page 129
H08.29	2008-1Eh	Speed observer filter time	0.00 ms to 10.00 ms	0.80	ms	Real-time	" H08_en.29" on page 129
H08.31	2008-20h	Disturbance cutoff frequency	10Hz to 4000Hz	600	Hz	Real-time	" H08_en.31" on page 129
H08.32	2008-21h	Disturbance compensation gain	0%–100%	0	%	Real-time	" H08_en.32" on page 130
H08.33	2008-22h	Disturbance observer inertia correction coefficient	0%–1600%	100	%	Real-time	" H08_en.33" on page 130
H08.37	2008-26h	Phase modulation for medium-frequency jitter suppression 2	-90° to 90°	0	°	Real-time	" H08_en.37" on page 130
H08.38	2008-27h	Medium-frequency suppression 2 frequency	0Hz to 1000Hz	0	Hz	Real-time	" H08_en.38" on page 130

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H08.39	2008-28h	Compensation gain of medium-frequency jitter suppression 2	0%–300%	0	%	Real-time	" H08_en.39" on page 131
H08.40	2008-29h	Speed observer selection	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.40" on page 131
H08.42	2008-2Bh	Model control selection	0: Disable 1: Enable 2: Dual-inertia model	0	-	Real-time	" H08_en.42" on page 131
H08.43	2008-2Ch	Model gain	0.1 to 2000.0	40.0	-	Real-time	" H08_en.43" on page 131
H08.46	2008-2Fh	Feedforward value	0.0 to 102.4	95.0	-	Real-time	" H08_en.46" on page 132
H08.53	2008-36h	Medium- and low-frequency jitter suppression frequency 3	0.0Hz to 300.0Hz	0.0	Hz	Real-time	" H08_en.53" on page 132
H08.54	2008-37h	Medium- and low-frequency jitter suppression compensation 3	0%–200%	0	%	Real-time	" H08_en.54" on page 132
H08.56	2008-39h	Medium- and low-frequency jitter suppression phase modulation 3	0%–600%	100	%	Real-time	" H08_en.56" on page 133
H08.59	2008-3Ch	Medium- and low-frequency jitter suppression frequency 4	0.0Hz to 300.0Hz	0.0	Hz	Real-time	" H08_en.59" on page 133
H08.60	2008-3Dh	Medium- and low-frequency jitter suppression compensation 4	0%–200%	0	%	Real-time	" H08_en.60" on page 133

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H08.61	2008-3Eh	Medium- and low-frequency jitter suppression phase modulation 4	0%–600%	100	%	Real-time	" H08_en.61" on page 133
H08.62	2008-3Fh	Position loop integral time constant	0.15 to 512.00	512.00	-	Real-time	" H08_en.62" on page 134
H08.63	2008-40h	2nd position loop integral time constant	0.15 to 512.00	512.00	-	Real-time	" H08_en.63" on page 134
H08.64	2008-41h	Speed observer feedback source	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.64" on page 134
H08.65	2008-42h	Zero deviation control selection	0: Disabled 1: Enabled	0	-	Real-time	" H08_en.65" on page 134
H08.66	2008-43h	Zero deviation control position average filter	0.0 ms to 320.0 ms	5.0	ms	Real-time	" H08_en.66" on page 135
H08.68	2008-45h	Speed feedforward of zero deviation control	0.0%–100.0%	0.0	%	Real-time	" H08_en.68" on page 135
H08.69	2008-46h	Torque feedforward of zero deviation control	0.0%–100.0%	0.0	%	Real-time	" H08_en.69" on page 135
H08.81	2008-52h	Anti-resonance frequency of dual-inertia model	0.0Hz to 300.0Hz	0.0	Hz	Real-time	" H08_en.81" on page 136
H08.82	2008-53h	Resonance frequency of dual-inertia model	0.0Hz to 300.0Hz	0.0	Hz	Real-time	" H08_en.82" on page 136
H08.83	2008-54h	Dual-inertia model gain	0.1Hz to 2000.0Hz	40.0	Hz	Real-time	" H08_en.83" on page 136
H08.84	2008-55h	Inertia ratio of dual-inertia model	0.00 to 120.00	1.00	-	Real-time	" H08_en.84" on page 136

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H08.88	2008-59h	Speed feedforward value of dual-inertia model	0.0 to 100.0	100.0	-	Real-time	" H08_en.88" on page 137
H08.89	2008-5Ah	Torque feedforward value of dual-inertia model	0.0 to 100.0	100.0	-	Real-time	" H08_en.89" on page 137

6.10 Parameter Group H09

Parameter	Hex	Name	Setpoint	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 4: Normal mode+Inertia auto-tuning 6: Quick positioning mode+Inertia auto-tuning	0	-	Real-time	" H09_en.00" on page 137
H09.01	2009-02h	Stiffness level selection	0 to 41	15	-	Real-time	" H09_en.01" on page 138
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 138
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 138

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H09.05	2009-06h	Offline inertia auto-tuning mode	0: Bi-directional 1: Unidirectional	1	-	At stop	" H09_en.05" on page 139
H09.06	2009-07h	Max. speed of inertia auto-tuning	100 rpm to 1000 rpm	500	RPM	At stop	" H09_en.06" on page 139
H09.07	2009-08h	Time constant for accelerating to max. speed during inertia auto-tuning	20 ms to 800 ms	125	ms	At stop	" H09_en.07" on page 139
H09.08	2009-09h	Interval time after an individual inertia auto-tuning	50 ms to 10000 ms	800	ms	At stop	" H09_en.08" on page 140
H09.09	2009-0Ah	Number of motor revolutions per inertia auto-tuning	0.00 to 100.00	1.00	-	Real-time	" H09_en.09" on page 140
H09.11	2009-0Ch	Vibration threshold	0.0%–100.0%	5.0	%	Real-time	" H09_en.11" on page 140
H09.12	2009-0Dh	Frequency of the 1st notch	50Hz to 8000Hz	8000	Hz	Real-time	" H09_en.12" on page 141
H09.13	2009-0Eh	Width level of the 1st notch	0 to 20	2	-	Real-time	" H09_en.13" on page 141
H09.14	2009-0Fh	Depth level of the 1st notch	0 to 99	0	-	Real-time	" H09_en.14" on page 141
H09.15	2009-10h	Frequency of the 2nd notch	50Hz to 8000Hz	8000	Hz	Real-time	" H09_en.15" on page 142
H09.16	2009-11h	Width level of the 2nd notch	0 to 20	2	-	Real-time	" H09_en.16" on page 142
H09.17	2009-12h	Depth level of the 2nd notch	0 to 99	0	-	Real-time	" H09_en.17" on page 142
H09.18	2009-13h	Frequency of the 3rd notch	50Hz to 8000Hz	8000	Hz	Real-time	" H09_en.18" on page 143
H09.19	2009-14h	Width level of the 3rd notch	0 to 20	2	-	Real-time	" H09_en.19" on page 143
H09.20	2009-15h	Depth level of the 3rd notch	0 to 99	0	-	Real-time	" H09_en.20" on page 143
H09.21	2009-16h	Frequency of the 4th notch	50Hz to 8000Hz	8000	Hz	Real-time	" H09_en.21" on page 143
H09.22	2009-17h	Width level of the 4th notch	0 to 20	2	-	Real-time	" H09_en.22" on page 144

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H09.23	2009-18h	Depth level of the 4th notch	0 to 99	0	-	Real-time	" H09_en.23" on page 144
H09.24	2009-19h	Auto-tuned resonance frequency	0Hz to 5000Hz	0	Hz	Unchangeable	" H09_en.24" on page 144
H09.26	2009-1Bh	ITune response	50.0%–500.0%	100.0	%	Real-time	" H09_en.26" on page 145
H09.27	2009-1Ch	ITune mode	0: Disabled 1: ITune mode 1 2: ITune mode 2	0	-	Real-time	" H09_en.27" on page 145
H09.28	2009-1Dh	Minimum inertia ratio of ITune	0.0%–80.0%	0.0	%	Real-time	" H09_en.28" on page 145
H09.29	2009-1Eh	Maximum inertia ratio of ITune	1.0%–120.0%	30.0	%	Real-time	" H09_en.29" on page 145
H09.32	2009-21h	Gravity compensation value	0.0%–100.0%	0.0	%	Real-time	" H09_en.32" on page 146
H09.33	2009-22h	Positive friction compensation value	0.0%–100.0%	0.0	%	Real-time	" H09_en.33" on page 146
H09.34	2009-23h	Negative friction compensation value	-100.0%–0.0%	0.0	%	Real-time	" H09_en.34" on page 146
H09.35	2009-24h	Friction compensation speed	0.0 to 20.0	2.0	-	Real-time	" H09_en.35" on page 146
H09.36	2009-25h	Friction compensation speed	0: 0x00 Slow mode+Speed reference 0: 0x01 Slow mode+Model speed 0: 0x02 Slow mode+Speed feedback 0: 0x03 Slow mode+Observe speed 0: 0x10 Quick mode +Speed reference 0: 0x11 Quick mode +Model speed 0: 0x12 Quick mode +Speed feedback 0: 0x13 Quick mode+Observe speed	0	-	Real-time	" H09_en.36" on page 147

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H09.37	2009-26h	Vibration monitoring time	0 to 65535	600	-	Real-time	" H09_en.37" on page 147
H09.38	2009-27h	Frequency of low-frequency resonance suppression 1 at the mechanical end	1.0Hz to 100.0Hz	100.0	Hz	Real-time	" H09_en.38" on page 147
H09.39	2009-28h	Low-frequency resonance suppression 1 at the mechanical end	0 to 3	2	-	At stop	" H09_en.39" on page 148
H09.44	2009-2Dh	Frequency of low-frequency resonance suppression 2 at mechanical load end	0.0 to 100.0	0.0	-	Real-time	" H09_en.44" on page 148
H09.45	2009-2Eh	Responsiveness of low-frequency resonance suppression 2 at mechanical load end	0.01 to 5.00	1.00	-	Real-time	" H09_en.45" on page 148
H09.47	2009-30h	Width of low-frequency resonance suppression 2 at mechanical load end	0.00 to 2.00	1.00	-	Real-time	" H09_en.47" on page 149
H09.49	2009-32h	Frequency of low-frequency resonance suppression 3 at mechanical load end	0.0 to 100.0	0.0	-	Real-time	" H09_en.49" on page 149
H09.50	2009-33h	Responsiveness of low-frequency resonance suppression 3 at mechanical load end	0.01 to 5.00	1.00	-	Real-time	" H09_en.50" on page 149

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H09.52	2009-35h	Width of low-frequency resonance suppression 3 at mechanical load end	0.00 to 2.00	1.00	-	Real-time	" H09_en.52" on page 149
H09.54	2009-37h	Vibration threshold	0.0%–300.0%	50.0	%	Real-time	" H09_en.54" on page 150
H09.56	2009-39h	Max. overshoot allowed by ETune	0 to 65535	2936	-	Real-time	" H09_en.56" on page 150
H09.57	2009-3Ah	STune resonance suppression switchover frequency	0Hz to 4000Hz	900	Hz	Real-time	" H09_en.57" on page 150
H09.58	2009-3Bh	STune resonance suppression reset selection	0: Disabled 1: Enabled	0	-	Real-time	" H09_en.58" on page 150

6.11 Parameter Group H0A

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0A.00	200A-01h	Power input phase loss protection	0: Enable 1: Disable	0	-	Real-time	" H0A_en.00" on page 151
H0A.01	200A-02h	Absolute position limit	0: Disabled 1: Enabled 2: Enabled after homing	0	-	Real-time	" H0A_en.01" on page 151
H0A.04	200A-05h	Motor overload protection gain	50 to 300	100	-	Real-time	" H0A_en.04" on page 152
H0A.08	200A-09h	Overspeed threshold	0 rpm to 20000 rpm	0	RPM	Real-time	" H0A_en.08" on page 152
H0A.10	200A-0Bh	Threshold of excessive local position deviation	0 to 4294967295	25185824	-	Real-time	" H0A_en.10" on page 153
H0A.12	200A-0Dh	Runaway protection	0: Disabled 1: Enabled	1	-	Real-time	" H0A_en.12" on page 153
H0A.17	200A-12h	Reference unit	0: Pulse unit 1: Reference unit	0	-	At stop	" H0A_en.17" on page 154

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0A.18	200A-13h	IGBT over-temperature threshold	120°C to 175°C	140	°C	Real-time	" H0A_en.18" on page 154
H0A.19	200A-14h	Filter time constant of touch probe 1	0.00 us–6.30 us	2.00	us	Real-time	" H0A_en.19" on page 154
H0A.20	200A-15h	Filter time constant of touch probe 2	0.00 us–6.30 us	2.00	us	Real-time	" H0A_en.20" on page 155
H0A.23	200A-18h	TZ signal filter time	0 ns to 31 ns	15	25ns	At stop	" H0A_en.23" on page 155
H0A.26	200A-1Bh	Motor overload detection	0: Show motor overload warning (E909.0) and fault (E620.0) 1: Hide motor overload warning (E909.0) and fault (E620.0)	0	-	Real-time	" H0A_en.26" on page 155
H0A.27	200A-1Ch	Motor rotation DO speed filter time	0 ms to 100 ms	50	ms	At stop	" H0A_en.27" on page 156
H0A.32	200A-21h	Time threshold for locked motor overheat protection	10 ms to 65535 ms	200	ms	Real-time	" H0A_en.32" on page 157
H0A.33	200A-22h	Locked rotor over-temperature protection	0: Disabled 1: Enabled	1	-	Real-time	" H0A_en.33" on page 157
H0A.36	200A-25h	Encoder multi-turn overflow fault selection	0: Not hide 1: Hide	0	-	Real-time	" H0A_en.36" on page 157
H0A.39	200A-28h	Current sampling clock signal tolerance count	0 to 3	0	-	At stop	" H0A_en.39" on page 157

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
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 edge solution 0: New solution 1: Old solution (same as SV660N)	6	-	At stop	*" H0A_en.40" on page 158*
H0A.41	200A-2Ah	Forward position of software position limit	-2147483648 to 2147483647	2147483647	Encoder unit	At stop	*" H0A_en.41" on page 158*
H0A.43	200A-2Ch	Reverse position of software position limit	-2147483648 to 2147483647	-2147483648	Encoder unit	At stop	*" H0A_en.43" on page 159*
H0A.49	200A-32h	Regenerative resistor overtemperature threshold	100°C to 175°C	115	°C	Real-time	*" H0A_en.49" on page 159*
H0A.50	200A-33h	Encoder communication fault tolerance threshold	0 to 31	3	-	Real-time	*" H0A_en.50" on page 159*
H0A.51	200A-34h	Phase loss detection filter times	3 ms to 36 ms	20	55ms	Real-time	*" H0A_en.51" on page 159*
H0A.52	200A-35h	Encoder temperature protection threshold	0°C to 175°C	105	°C	Real-time	*" H0A_en.52" on page 160*
H0A.53	200A-36h	Probe DI ON compensation time	-3000 ns to 3000 ns	128	25ns	Real-time	*" H0A_en.53" on page 160*
H0A.54	200A-37h	Probe DI OFF compensation time	-3000 ns to 3000 ns	1512	25ns	Real-time	*" H0A_en.54" on page 160*
H0A.55	200A-38h	Runaway current threshold	100.0%–400.0%	200.0	%	Real-time	*" H0A_en.55" on page 161*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0A.56	200A-39h	Fault reset delay	0 ms to 60000 ms	10000	ms	Real-time	" H0A_en.56" on page 161
H0A.57	200A-3Ah	Runaway speed threshold	1 rpm to 1000 rpm	50	RPM	Real-time	" H0A_en.57" on page 161
H0A.58	200A-3Bh	Runaway speed filter time	0.1 ms to 100.0 ms	2.0	ms	Real-time	" H0A_en.58" on page 161
H0A.59	200A-3Ch	Runaway protection detection time	10 ms to 1000 ms	30	ms	Real-time	" H0A_en.59" on page 162
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 162
H0A.61	200A-3Eh	Designated fault code	0.0 to 6553.5	0.0	-	Real-time	" H0A_en.61" on page 162
H0A.62	200A-3Fh	Trigger source	0 to 25	0	-	Real-time	" H0A_en.62" on page 162
H0A.63	200A-40h	Trigger level	-2147483648 to 2147483647	0	-	Real-time	" H0A_en.63" on page 163
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 163
H0A.66	200A-43h	Trigger position	0%–100%	75	%	Real-time	" H0A_en.66" on page 163
H0A.67	200A-44h	Sampling frequency	0: Current loop 1: Position loop 2: Main cycle	0	-	Real-time	" H0A_en.67" on page 164
H0A.70	200A-47h	Overspeed threshold 2	0 rpm to 20000 rpm	0	RPM	Real-time	" H0A_en.70" on page 164
H0A.71	200A-48h	MS1 motor overload curve switchover	0 to 3	2	-	Real-time	" H0A_en.71" on page 164
H0A.72	200A-49h	Maximum stop time in ramp-to-stop	0 ms to 65535 ms	10000	ms	At stop	" H0A_en.72" on page 164
H0A.73	200A-4Ah	STO 24 V disconnection filter time	1 ms to 5 ms	5	ms	Real-time	" H0A_en.73" on page 165
H0A.74	200A-4Bh	Filter time for two inconsistent STO channels	0 ms to 1000 ms	100	ms	Real-time	" H0A_en.74" on page 165

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0A.75	200A-4Ch	Servo OFF delay after STO triggered	0 ms to 25 ms	10	ms	Real-time	*" H0A_en.75" on page 165*
H0A.90	200A-5Bh	Average filter time constant for speed display	0 ms to 100 ms	0	ms	At stop	*" H0A_en.90" on page 166*
H0A.91	200A-5Ch	Average filter time constant for torque display	0 ms to 100 ms	0	ms	At stop	*" H0A_en.91" on page 166*
H0A.92	200A-5Dh	Average filter time constant for position display	0 ms to 100 ms	0	ms	At stop	*" H0A_en.92" on page 166*
H0A.93	200A-5Eh	Low-pass filter time constant for voltage display	0 ms to 250 ms	0	ms	Real-time	*" H0A_en.93" on page 166*
H0A.94	200A-5Fh	Low-pass filter time constant for thermal display	0 ms to 250 ms	0	ms	Real-time	*" H0A_en.94" on page 167*

6.12 Parameter Group H0b

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0b.00	200b-01h	Motor speed actual value	-32767 RPM to +32767 RPM	0	RPM	Unchangeable	*" H0b_en.00" on page 167*
H0b.01	200b-02h	Speed reference	-32767 RPM to +32767 RPM	0	RPM	Unchangeable	*" H0b_en.01" on page 167*
H0b.02	200b-03h	Internal torque reference	-500.0%–500.0%	0.0	%	Unchangeable	*" H0b_en.02" on page 168*
H0b.03	200b-04h	Input (DI) signal monitoring	0 to 65535	0	-	Unchangeable	*" H0b_en.03" on page 168*
H0b.05	200b-06h	Output (DO) signal monitoring	0 to 65535	0	-	Unchangeable	*" H0b_en.05" on page 168*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0b.07	200b-08h	Absolute position counter	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.07" on page 169
H0b.09	200b-0Ah	Mechanical angle	0.0° to 360.0°	0.0	°	Unchangeable	" H0b_en.09" on page 169
H0b.10	200b-0Bh	Electrical angle	0.0° to 360.0°	0.0	°	Unchangeable	" H0b_en.10" on page 170
H0b.12	200b-0Dh	Average load ratio	0.0%–800.0%	0.0	%	Unchangeable	" H0b_en.12" on page 170
H0b.13	200b-0Eh	Input reference counter	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.13" on page 170
H0b.15	200b-10h	Position following error (encoder unit)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.15" on page 171
H0b.17	200b-12h	Feedback pulse counter	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.17" on page 171
H0b.19	200b-14h	Total power-on time	0.0s–429496729.5s	0.0	s	Unchangeable	" H0b_en.19" on page 171
H0b.24	200b-19h	Phase current RMS value	0.0 A to 6553.5 A	0.0	A	Unchangeable	" H0b_en.24" on page 171
H0b.25	200b-1Ah	Angle obtained upon voltage injection auto-tuning	0.0° to 360.0°	0.0	°	Unchangeable	" H0b_en.25" on page 172
H0b.26	200b-1Bh	Bus voltage	0.0V to 6553.5V	0.0	V	Unchangeable	" H0b_en.26" on page 172
H0b.27	200b-1Ch	Module temperature	-20°C to 200°C	0	°C	Unchangeable	" H0b_en.27" on page 172
H0b.28	200b-1Dh	Absolute encoder fault information given by FPGA	0 to 65535	0	-	Unchangeable	" H0b_en.28" on page 173
H0b.29	200b-1Eh	Axis status information given by FPGA	0 to 65535	0	-	Unchangeable	" H0b_en.29" on page 173
H0b.30	200b-1Fh	Axis fault information given by FPGA	0 to 65535	0	-	Unchangeable	" H0b_en.30" on page 173

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0b.31	200b-20h	Encoder fault information	0 to 65535	0	-	Real-time	" H0b_en.31" on page 173
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 174
H0b.34	200b-23h	Code of selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.34" on page 174
H0b.35	200b-24h	Timestamp of selected fault	0.0s–429496729.5s	0.0	s	Unchangeable	" H0b_en.35" on page 175
H0b.37	200b-26h	Motor speed on selected fault	-32767 RPM to +32767 RPM	0	RPM	Unchangeable	" H0b_en.37" on page 175
H0b.38	200b-27h	Motor phase U current upon occurrence of the selected fault	-3276.7A to 3276.7A	0.0	A	Unchangeable	" H0b_en.38" on page 175
H0b.39	200b-28h	Motor phase V current upon occurrence of the selected fault	-3276.7A to 3276.7A	0.0	A	Unchangeable	" H0b_en.39" on page 175
H0b.40	200b-29h	Bus voltage on selected fault	0.0 to 6553.5 V	0.0	V	Unchangeable	" H0b_en.40" on page 176
H0b.41	200b-2Ah	Input terminal state on selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.41" on page 176

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0b.43	200b-2Ch	Output terminal state on selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.43" on page 176
H0b.45	200b-2Eh	Internal fault code	0 to 65535	0	-	Unchangeable	" H0b_en.45" on page 176
H0b.46	200b-2Fh	Absolute encoder fault information given by FPGA upon occurrence of the selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.46" on page 177
H0b.47	200b-30h	System status information given by FPGA upon occurrence of the selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.47" on page 177
H0b.48	200b-31h	System fault information given by FPGA upon occurrence of the selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.48" on page 177
H0b.49	200b-32h	Encoder fault information upon occurrence of the selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.49" on page 178
H0b.51	200b-34h	Internal fault code upon occurrence of the selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.51" on page 178
H0b.52	200b-35h	FPGA timeout fault standard bit upon occurrence of the selected fault	0 to 65535	0	-	Unchangeable	" H0b_en.52" on page 178

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0b.53	200b-36h	Position following error (reference unit)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.53" on page 178
H0b.55	200b-38h	Motor speed actual value	-2147483648.0rpm to 2147483647.0rpm	0.0	RPM	Unchangeable	" H0b_en.55" on page 179
H0b.57	200b-3Ah	Control circuit bus voltage	0.0 to 6553.5 V	0.0	V	Unchangeable	" H0b_en.57" on page 179
H0b.58	200b-3Bh	Mechanical absolute position (low 32 bits)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.58" on page 179
H0b.60	200b-3Dh	Mechanical absolute position (high 32 bits)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.60" on page 180
H0b.63	200b-40h	NotRdy state	1: Control power error 2: Main circuit power input error 3: Undervoltage 4: Soft start failed 5: Encoder initialization not completed 6: Short circuit to ground failed 7: Others	0	-	Unchangeable	" H0b_en.63" on page 180
H0b.64	200b-41h	Real-time input position reference counter	-2147483648 to 2147483647	0	Reference unit	Unchangeable	" H0b_en.64" on page 180
H0b.66	200b-43h	Encoder temperature	-32768°C to 32767°C	0	°C	Unchangeable	" H0b_en.66" on page 180
H0b.67	200b-44h	Load rate of regenerative resistor	0.0%–200.0%	0.0	%	Unchangeable	" H0b_en.67" on page 181
H0b.70	200b-47h	Number of absolute encoder revolutions	0 Rev to 65535 Rev	0	Rev	Unchangeable	" H0b_en.70" on page 181
H0b.71	200b-48h	Single-turn position fed back by the absolute encoder	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.71" on page 181

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0b.74	200b-4Bh	System fault information given by FPGA	0 to 65535	0	-	Unchangeable	" H0b_en.74" on page 182
H0b.77	200b-4Eh	Encoder position (low 32 bits)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.77" on page 182
H0b.79	200b-50h	Encoder position (high 32 bits)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.79" on page 182
H0b.81	200b-52h	Single-turn position of the rotary load (low 32 bits)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.81" on page 182
H0b.83	200b-54h	Single-turn position of the rotary load (high 32 bits)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.83" on page 183
H0b.85	200b-56h	Single-turn position of the rotary load (reference unit)	-2147483648 p to +2147483647 p	0	p	Unchangeable	" H0b_en.85" on page 183
H0b.87	200b-58h	IGBT junction temperature	0 to 200	0	-	Unchangeable	" H0b_en.87" on page 183
H0b.90	200b-5Bh	Group No. of the abnormal parameter	0 to 65535	0	-	Unchangeable	" H0b_en.90" on page 183
H0b.91	200b-5Ch	Offset within the group of the abnormal parameter	0 to 65535	0	-	Unchangeable	" H0b_en.91" on page 184
H0b.94	200b-5Fh	Individual power-on time	0.0s–429496729.5s	0.0	s	Unchangeable	" H0b_en.94" on page 184
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 184

6.13 Parameter Group H0d

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0d.00	200d-01h	Software reset	0: No operation 1: Enable	0	-	At stop	" H0d_en.00" on page 185
H0d.01	200d-02h	Fault reset	0: No operation 1: Enable	0	-	At stop	" H0d_en.01" on page 185
H0d.02	200d-03h	Inertia auto-tuning selection	0 to 65	0	-	Real-time	" H0d_en.02" on page 185
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 186
H0d.05	200d-06h	Emergency stop	0: No operation 1: Emergency stop	0	-	Real-time	" H0d_en.05" on page 186
H0d.12	200d-0Dh	Phase U/V current balance correction	0: Disabled 1: Enabled	0	-	At stop	" H0d_en.12" on page 186
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 187
H0d.18	200d-13h	Forced DI value	0 to 255	255	-	Real-time	" H0d_en.18" on page 187
H0d.19	200d-14h	Forced DO value	0 to 31	0	-	Real-time	" H0d_en.19" on page 187
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 188
H0d.23	200d-18h	Torque fluctuation auto-tuning	0 to 1	0	-	At stop	" H0d_en.23" on page 188
H0d.26	200d-1Bh	Brake and dynamic brake started forcibly	0: No forcible operations 1: Dynamic brake deactivated forcibly 2: Brake released forcibly 3: Dynamic brake deactivated and brake released forcibly	0	-	At stop	" H0d_en.26" on page 188

6.14 Parameter Group H0E

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H0E.00	200E-01h	Node address	1 to 127	1	-	At stop	" H0E_en.00" on page 189
H0E.01	200E-02h	Save objects written through communication to EEPROM	0: Not save 1: Save parameters written through communication to EEPROM 2: Save object dictionaries written through communication to EEPROM 3: Save parameters and object dictionaries written through communication to EEPROM 4: Save object dictionaries written before communication (OP) to EEPROM	1	-	Real-time	" H0E_en.01" on page 189
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 190
H0E.80	200E-51h	Modbus baud rate	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 192
H0E.81	200E-52h	Modbus data format	3: No parity, 1 stop bit (N-1)	3	-	Real-time	" H0E_en.81" on page 193
H0E.82	200E-53h	Modbus response delay	0 ms to 20 ms	0	ms	Real-time	" H0E_en.82" on page 193
H0E.83	200E-54h	Modbus communication timeout	0 ms to 600 ms	0	ms	Real-time	" H0E_en.83" on page 193
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 193
H0E.90	200E-5Bh	Modbus version	0.00 to 655.35	0.00	-	Unchangeable	" H0E_en.90" on page 194

6.15 Parameter Group H12

Parameter	Hex	Name	Setpoint	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 195*
H12.01	2012-02h	Number of speed references in multi-speed mode	1 to 16	16	-	At stop	*" H12_en.01" on page 195*
H12.02	2012-03h	Operating time unit	0: s 1: min	0	-	At stop	*" H12_en.02" on page 196*
H12.03	2012-04h	Acceleration time 1	0 ms to 65535 ms	10	ms	Real-time	*" H12_en.03" on page 196*
H12.04	2012-05h	Deceleration time 1	0 ms to 65535 ms	10	ms	Real-time	*" H12_en.04" on page 196*
H12.05	2012-06h	Acceleration time 2	0 ms to 65535 ms	50	ms	Real-time	*" H12_en.05" on page 197*
H12.06	2012-07h	Deceleration time 2	0 ms to 65535 ms	50	ms	Real-time	*" H12_en.06" on page 197*
H12.07	2012-08h	Acceleration time 3	0 ms to 65535 ms	100	ms	Real-time	*" H12_en.07" on page 197*
H12.08	2012-09h	Deceleration time 3	0 ms to 65535 ms	100	ms	Real-time	*" H12_en.08" on page 197*
H12.09	2012-0Ah	Acceleration time 4	0 ms to 65535 ms	150	ms	Real-time	*" H12_en.09" on page 198*
H12.10	2012-0Bh	Deceleration time 4	0 ms to 65535 ms	150	ms	Real-time	*" H12_en.10" on page 198*
H12.20	2012-15h	Speed reference 1	-10000 RPM to +10000 RPM	0	RPM	Real-time	*" H12_en.20" on page 198*
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 198*
H12.22	2012-17h	Acc./dec. time of speed 1	0: Zero acceleration/ deceleration time 1: Acceleration/Deceleration time 1 2: Acceleration/Deceleration time 2 3: Acceleration/Deceleration time 3 4: Acceleration/Deceleration time 4	0	-	Real-time	*" H12_en.22" on page 199*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H12.23	2012-18h	Reference 2	-10000 RPM to +10000 RPM	100	RPM	Real-time	" H12_en.23" on page 199
H12.24	2012-19h	Operating time of speed reference 2	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.24" on page 199
H12.25	2012-1Ah	Acc./dec. time of speed 2	Same as H12.22.	0	-	Real-time	" H12_en.25" on page 200
H12.26	2012-1Bh	Reference 3	-10000 RPM to +10000 RPM	300	RPM	Real-time	" H12_en.26" on page 200
H12.27	2012-1Ch	Operating time of speed reference 3	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.27" on page 200
H12.28	2012-1Dh	Acc./dec. time of speed 3	Same as H12.22.	0	-	Real-time	" H12_en.28" on page 200
H12.29	2012-1Eh	Reference 4	-10000 RPM to +10000 RPM	500	RPM	Real-time	" H12_en.29" on page 201
H12.30	2012-1Fh	Operating time of speed reference 4	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.30" on page 201
H12.31	2012-20h	Acc./dec. time of speed 4	Same as H12.22.	0	-	Real-time	" H12_en.31" on page 201
H12.32	2012-21h	Reference 5	-10000 RPM to +10000 RPM	700	RPM	Real-time	" H12_en.32" on page 201
H12.33	2012-22h	Operating time of speed reference 5	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.33" on page 202
H12.34	2012-23h	Acc./dec. time of speed 5	Same as H12.22.	0	-	Real-time	" H12_en.34" on page 202
H12.35	2012-24h	Reference 6	-10000 RPM to +10000 RPM	900	RPM	Real-time	" H12_en.35" on page 202
H12.36	2012-25h	Operating time of speed reference 6	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.36" on page 203
H12.37	2012-26h	Acc./dec. time of speed 6	Same as H12.22.	0	-	Real-time	" H12_en.37" on page 203
H12.38	2012-27h	Reference 7	-10000 RPM to +10000 RPM	600	RPM	Real-time	" H12_en.38" on page 203
H12.39	2012-28h	Operating time of speed reference 7	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.39" on page 203
H12.40	2012-29h	Acc./dec. time of speed 7	Same as H12.22.	0	-	Real-time	" H12_en.40" on page 204
H12.41	2012-2Ah	Reference 8	-10000 RPM to +10000 RPM	300	RPM	Real-time	" H12_en.41" on page 204

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H12.42	2012-2Bh	Operating time of speed reference 8	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.42" on page 204
H12.43	2012-2Ch	Acc./dec. time of speed 8	Same as H12.22.	0	-	Real-time	" H12_en.43" on page 204
H12.44	2012-2Dh	Reference 9	-10000 RPM to +10000 RPM	100	RPM	Real-time	" H12_en.44" on page 205
H12.45	2012-2Eh	Operating time of speed reference 9	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.45" on page 205
H12.46	2012-2Fh	Acc./dec. time of speed 9	Same as H12.22.	0	-	Real-time	" H12_en.46" on page 205
H12.47	2012-30h	Reference 10	-10000 RPM to +10000 RPM	-100	RPM	Real-time	" H12_en.47" on page 205
H12.48	2012-31h	Operating time of speed reference 10	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.48" on page 206
H12.49	2012-32h	Acc./dec. time of speed 10	Same as H12.22.	0	-	Real-time	" H12_en.49" on page 206
H12.50	2012-33h	Reference 11	-10000 RPM to +10000 RPM	-300	RPM	Real-time	" H12_en.50" on page 206
H12.51	2012-34h	Operating time of speed reference 11	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.51" on page 207
H12.52	2012-35h	Acc./dec. time of speed 11	Same as H12.22.	0	-	Real-time	" H12_en.52" on page 207
H12.53	2012-36h	Reference 12	-10000 RPM to +10000 RPM	-500	RPM	Real-time	" H12_en.53" on page 207
H12.54	2012-37h	Operating time of speed reference 12	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.54" on page 207
H12.55	2012-38h	Acc./dec. time of speed 12	Same as H12.22.	0	-	Real-time	" H12_en.55" on page 208
H12.56	2012-39h	Reference 13	-10000 RPM to +10000 RPM	-700	RPM	Real-time	" H12_en.56" on page 208
H12.57	2012-3Ah	Operating time of speed reference 13	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.57" on page 208
H12.58	2012-3Bh	Acc./dec. time of speed 13	Same as H12.22.	0	-	Real-time	" H12_en.58" on page 208
H12.59	2012-3Ch	Reference 14	-10000 RPM to +10000 RPM	-900	RPM	Real-time	" H12_en.59" on page 209
H12.60	2012-3Dh	Operating time of speed reference 14	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.60" on page 209

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H12.61	2012-3Eh	Acc./dec. time of speed 14	Same as H12.22.	0	-	Real-time	" H12_en.61" on page 209
H12.62	2012-3Fh	Reference 15	-10000 RPM to +10000 RPM	-600	RPM	Real-time	" H12_en.62" on page 209
H12.63	2012-40h	Operating time of speed reference 15	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.63" on page 210
H12.64	2012-41h	Acc./dec. time of speed 15	Same as H12.22.	0	-	Real-time	" H12_en.64" on page 210
H12.65	2012-42h	Reference 16	-10000 RPM to +10000 RPM	-300	RPM	Real-time	" H12_en.65" on page 210
H12.66	2012-43h	Operating time of speed reference 16	0.0s(m) to 6553.5s(m)	5.0	s (m)	Real-time	" H12_en.66" on page 211
H12.67	2012-44h	Acc./dec. time of speed 16	Same as H12.22.	0	-	Real-time	" H12_en.67" on page 211

6.16 Parameter Group H17

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H17.90	2017-5Bh	Communication VDI enable	0: Disabled 1: Enabled	0	-	At stop	" H17_en.90" on page 211
H17.91	2017-5Ch	VDI default value upon power-on	0: No default 1: VDI1 default value 2: VDI2 default value 4: VDI3 default value 8: VDI4 default value 16: VDI5 default value 32: VDI6 default value 64: VDI7 default value 128: VDI8 default value 256: VDI9 default value 512: VDI10 default value 1024: VDI11 default value 2048: VDI12 default value 4096: VDI13 default value 8092: VDI14 default value 16384: VDI15 default value 32768: VDI16 default value	0	-	Real-time	" H17_en.91" on page 211

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H17.00	2017-01h	VDI1 function selection	0: No assignment 1: Servo ON 3: Gain switchover 14: Positive limit switch 15: Negative limit switch 16: Positive external torque limit 17: Negative external torque limit 18: Forward jog 19: Reverse jog 31: Home switch 34: Emergency stop 41: Current position as home 56: External switchover switch of EPOS program segment	0	-	Real-time	*" H17_en.00" on page 212*
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	-	At stop	*" H17_en.01" on page 213*
H17.02	2017-03h	VDI2 function selection	Same as H17.00.	0	-	Real-time	*" H17_en.02" on page 213*
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	-	At stop	*" H17_en.03" on page 214*
H17.04	2017-05h	VDI3 function selection	Same as H17.00.	0	-	Real-time	*" H17_en.04" on page 214*
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	-	At stop	*" H17_en.05" on page 214*
H17.06	2017-07h	VDI4 function selection	Same as H17.00.	0	-	Real-time	*" H17_en.06" on page 214*
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	-	At stop	*" H17_en.07" on page 215*
H17.08	2017-09h	VDI5 function selection	Same as H17.00.	0	-	Real-time	*" H17_en.08" on page 215*
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	-	At stop	*" H17_en.09" on page 215*
H17.10	2017-0Bh	VDI6 function selection	Same as H17.00.	0	-	Real-time	*" H17_en.10" on page 215*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
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	-	At stop	" H17_en.11" on page 216
H17.12	2017-0Dh	VDI7 function selection	Same as H17.00.	0	-	Real-time	" H17_en.12" on page 216
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	-	At stop	" H17_en.13" on page 216
H17.14	2017-0Fh	VDI8 function selection	Same as H17.00.	0	-	Real-time	" H17_en.14" on page 217
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	-	At stop	" H17_en.15" on page 217
H17.16	2017-11h	VDI9 function selection	Same as H17.00.	0	-	Real-time	" H17_en.16" on page 217
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	-	At stop	" H17_en.17" on page 217
H17.18	2017-13h	VDI10 function selection	Same as H17.00.	0	-	Real-time	" H17_en.18" on page 218
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	-	At stop	" H17_en.19" on page 218
H17.20	2017-15h	VDI11 function selection	Same as H17.00.	0	-	Real-time	" H17_en.20" on page 218
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	-	At stop	" H17_en.21" on page 218
H17.22	2017-17h	VDI12 function selection	Same as H17.00.	0	-	Real-time	" H17_en.22" on page 219
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	-	At stop	" H17_en.23" on page 219
H17.24	2017-19h	VDI13 function selection	Same as H17.00.	0	-	Real-time	" H17_en.24" on page 219

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
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	-	At stop	" H17_en.25" on page 220
H17.26	2017-1Bh	VDI14 function selection	Same as H17.00.	0	-	Real-time	" H17_en.26" on page 220
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	-	At stop	" H17_en.27" on page 220
H17.28	2017-1Dh	VDI15 function selection	Same as H17.00.	0	-	Real-time	" H17_en.28" on page 220
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	-	At stop	" H17_en.29" on page 221
H17.30	2017-1Fh	VDI16 function selection	Same as H17.00.	0	-	Real-time	" H17_en.30" on page 221
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	-	At stop	" H17_en.31" on page 221
H17.92	2017-5Dh	Communication VDO enable	0: Disabled 1: Enabled	0	-	At stop	" H17_en.92" on page 221
H17.93	2017-5Eh	VDO default value after power-on	0: No default 1: VDI1 default value 2: VDI2 default value 4: VDI3 default value 8: VDI4 default value 16: VDI5 default value 32: VDI6 default value 64: VDI7 default value 128: VDI8 default value 256: VDI9 default value 512: VDI10 default value 1024: VDI11 default value 2048: VDI12 default value 4096: VDI13 default value 8192: VDI14 default value 16384: VDI15 default value 32768: VDI16 default value	0	-	At stop	" H17_en.93" on page 222
H17.32	2017-21h	VDO virtual level	0 to 65535	0	-	Unchangeable	" H17_en.32" on page 222

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H17.33	2017-22h	VDO1 function selection	0: No assignment 1: Servo ready 2: Motor rotating 3: Zero speed 4: Speed matching 5: Positioning completed 6: Proximity 7: Torque limited 8: Speed limited 9: Brake 10: Warning 11: Fault 16: Homing completed 18: Torque reach 19: Speed reach 25: Comparison output 30: Warning or fault output 32: EDM output	0	-	Real-time	*" H17_en.33" on page 223*
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 223*
H17.35	2017-24h	VDO2 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.35" on page 224*
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 224*
H17.37	2017-26h	VDO3 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.37" on page 224*
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 224*
H17.39	2017-28h	VDO4 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.39" on page 225*
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 225*
H17.41	2017-2Ah	VDO5 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.41" on page 225*
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 226*
H17.43	2017-2Ch	VDO6 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.43" on page 226*
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 226*
H17.45	2017-2Eh	VDO7 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.45" on page 226*
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 227*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H17.47	2017-30h	VDO8 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.47" on page 227*
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 227*
H17.49	2017-32h	VDO9 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.49" on page 227*
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 228*
H17.51	2017-34h	VDO10 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.51" on page 228*
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 228*
H17.53	2017-36h	VDO11 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.53" on page 229*
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 229*
H17.55	2017-38h	VDO12 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.55" on page 229*
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 229*
H17.57	2017-3Ah	VDO13 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.57" on page 230*
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 230*
H17.59	2017-3Ch	VDO14 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.59" on page 230*
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 230*
H17.61	2017-3Eh	VDO15 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.61" on page 231*
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 231*
H17.63	2017-40h	VDO16 function selection	Same as H17.33.	0	-	Real-time	*" H17_en.63" on page 231*
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 232*

6.17 Parameter Group H18

Parameter	Hex	Name	Setpoint	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 232
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 232
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	0	-	Real-time	" H18_en.02" on page 232
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 233
H18.04	2018-05h	Current position as zero	0: Disable 1: Enable (rising edge-triggered)	0	-	Real-time	" H18_en.04" on page 233
H18.05	2018-06h	Position comparison output width	0.1 ms to 204.7 ms	0.1	ms	Real-time	" H18_en.05" on page 234
H18.06	2018-07h	Position comparison output ABZ port polarity	bit0: OCZ output logic 0: Positive, output high level upon active logic 1: Negative, output low level upon active logic bit1: 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 234

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H18.07	2018-08h	Position comparison start point	0 to 40	0	-	Real-time	" H18_en.07" on page 234
H18.08	2018-09h	Position comparison end point	0 to 40	0	-	Real-time	" H18_en.08" on page 235
H18.09	2018-0Ah	Current state of position comparison	0 to 1024	0	-	Unchangeable	" H18_en.09" on page 235
H18.10	2018-0Bh	Real-time position of position comparison	-2147483648 to 2147483647	0	-	Unchangeable	" H18_en.10" on page 235
H18.12	2018-0Dh	Zero offset of position comparison	-2147483648 to 2147483647	0	-	Real-time	" H18_en.12" on page 235
H18.14	2018-0Fh	Position comparison output delay compensation	-30.00us to 30.00us	0.00	us	Real-time	" H18_en.14" on page 236
H18.15	2018-10h	Fixed cyclic comparison	1 to 65535	1	-	Real-time	" H18_en.15" on page 236
H18.16	2018-11h	ABZ output function setting	bit0: OCZ port function 0: Frequency-division output 1: Position comparison bit1: Z port function 0: Frequency-division output 1: Position comparison bit2: A/B port function 0: Frequency-division output 1: Position comparison	0	-	Real-time	" H18_en.16" on page 236
H18.17	2018-12h	Number of fixed mode cycles	1 to 65535	1	-	Unchangeable	" H18_en.17" on page 237

6.18 Parameter Group H19

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H19.00	2019-01h	Target value of position comparison 1	-2147483648 to 2147483647	0	-	Real-time	" H19_en.00" on page 237
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: Status unchanged bit7: DO1 output bit8: DO2 output bit9: DO3 output bit10: DO4 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 238
H19.03	2019-04h	Target value of position comparison 2	-2147483648 to 2147483647	0	-	Real-time	" H19_en.03" on page 238
H19.05	2019-06h	Attribute value of position comparison 2	Same as H19.02.	0	-	Real-time	" H19_en.05" on page 238
H19.06	2019-07h	Target value of position comparison 3	-2147483648 to 2147483647	0	-	Real-time	" H19_en.06" on page 239
H19.08	2019-09h	Attribute value of position comparison 3	Same as H19.02.	0	-	Real-time	" H19_en.08" on page 239
H19.09	2019-0Ah	Target value of position comparison 4	-2147483648 to 2147483647	0	-	Real-time	" H19_en.09" on page 239
H19.11	2019-0Ch	Attribute value of position comparison 4	Same as H19.02.	0	-	Real-time	" H19_en.11" on page 240

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H19.12	2019-0Dh	Target value of position comparison 5	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.12" on page 240*
H19.14	2019-0Fh	Attribute value of position comparison 5	Same as H19.02.	0	-	Real-time	*" H19_en.14" on page 240*
H19.15	2019-10h	Target value of position comparison 6	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.15" on page 240*
H19.17	2019-12h	Attribute value of position comparison 6	Same as H19.02.	0	-	Real-time	*" H19_en.17" on page 241*
H19.18	2019-13h	Target value of position comparison 7	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.18" on page 241*
H19.20	2019-15h	Attribute value of position comparison 7	Same as H19.02.	0	-	Real-time	*" H19_en.20" on page 241*
H19.21	2019-16h	Target value of position comparison 8	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.21" on page 241*
H19.23	2019-18h	Attribute value of position comparison 8	Same as H19.02.	0	-	Real-time	*" H19_en.23" on page 242*
H19.24	2019-19h	Target value of position comparison 9	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.24" on page 242*
H19.26	2019-1Bh	Attribute value of position comparison 9	Same as H19.02.	0	-	Real-time	*" H19_en.26" on page 242*
H19.27	2019-1Ch	Target value of position comparison 10	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.27" on page 242*
H19.29	2019-1Eh	Attribute value of position comparison 10	Same as H19.02.	0	-	Real-time	*" H19_en.29" on page 243*
H19.30	2019-1Fh	Target value of position comparison 11	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.30" on page 243*
H19.32	2019-21h	Attribute value of position comparison 11	Same as H19.02.	0	-	Real-time	*" H19_en.32" on page 243*
H19.33	2019-22h	Target value of position comparison 12	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.33" on page 244*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H19.35	2019-24h	Attribute value of position comparison 12	Same as H19.02.	0	-	Real-time	*" H19_en.35" on page 244*
H19.36	2019-25h	Target value of position comparison 13	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.36" on page 244*
H19.38	2019-27h	Attribute value of position comparison 13	Same as H19.02.	0	-	Real-time	*" H19_en.38" on page 244*
H19.39	2019-28h	Target value of position comparison 14	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.39" on page 245*
H19.41	2019-2Ah	Attribute value of position comparison 14	Same as H19.02.	0	-	Real-time	*" H19_en.41" on page 245*
H19.42	2019-2Bh	Target value of position comparison 15	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.42" on page 245*
H19.44	2019-2Dh	Attribute value of position comparison 15	Same as H19.02.	0	-	Real-time	*" H19_en.44" on page 245*
H19.45	2019-2Eh	Target value of position comparison 16	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.45" on page 246*
H19.47	2019-30h	Attribute value of position comparison 16	Same as H19.02.	0	-	Real-time	*" H19_en.47" on page 246*
H19.48	2019-31h	Target value of position comparison 17	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.48" on page 246*
H19.50	2019-33h	Attribute value of position comparison 17	Same as H19.02.	0	-	Real-time	*" H19_en.50" on page 246*
H19.51	2019-34h	Target value of position comparison 18	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.51" on page 247*
H19.53	2019-36h	Attribute value of position comparison 18	Same as H19.02.	0	-	Real-time	*" H19_en.53" on page 247*
H19.54	2019-37h	Target value of position comparison 19	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.54" on page 247*
H19.56	2019-39h	Attribute value of position comparison 19	Same as H19.02.	0	-	Real-time	*" H19_en.56" on page 248*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H19.57	2019-3Ah	Target value of position comparison 20	-2147483648 to 2147483647	0	-	Real-time	" H19_en.57" on page 248
H19.59	2019-3Ch	Attribute value of position comparison 20	Same as H19.02.	0	-	Real-time	" H19_en.59" on page 248
H19.60	2019-3Dh	Target value of position comparison 21	-2147483648 to 2147483647	0	-	Real-time	" H19_en.60" on page 248
H19.62	2019-3Fh	Attribute value of position comparison 21	Same as H19.02.	0	-	Real-time	" H19_en.62" on page 249
H19.63	2019-40h	Target value of position comparison 22	-2147483648 to 2147483647	0	-	Real-time	" H19_en.63" on page 249
H19.65	2019-42h	Attribute value of position comparison 22	Same as H19.02.	0	-	Real-time	" H19_en.65" on page 249
H19.66	2019-43h	Target value of position comparison 23	-2147483648 to 2147483647	0	-	Real-time	" H19_en.66" on page 249
H19.68	2019-45h	Attribute value of position comparison 23	Same as H19.02.	0	-	Real-time	" H19_en.68" on page 250
H19.69	2019-46h	Target value of position comparison 24	-2147483648 to 2147483647	0	-	Real-time	" H19_en.69" on page 250
H19.71	2019-48h	Attribute value of position comparison 24	Same as H19.02.	0	-	Real-time	" H19_en.71" on page 250
H19.72	2019-49h	Target value of position comparison 25	-2147483648 to 2147483647	0	-	Real-time	" H19_en.72" on page 250
H19.74	2019-4Bh	Attribute value of position comparison 25	Same as H19.02.	0	-	Real-time	" H19_en.74" on page 251
H19.75	2019-4Ch	Target value of position comparison 26	-2147483648 to 2147483647	0	-	Real-time	" H19_en.75" on page 251
H19.77	2019-4Eh	Attribute value of position comparison 26	Same as H19.02.	0	-	Real-time	" H19_en.77" on page 251
H19.78	2019-4Fh	Target value of position comparison 27	-2147483648 to 2147483647	0	-	Real-time	" H19_en.78" on page 252

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H19.80	2019-51h	Attribute value of position comparison 27	Same as H19.02.	0	-	Real-time	*" H19_en.80" on page 252*
H19.81	2019-52h	Target value of position comparison 28	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.81" on page 252*
H19.83	2019-54h	Attribute value of position comparison 28	Same as H19.02.	0	-	Real-time	*" H19_en.83" on page 252*
H19.84	2019-55h	Target value of position comparison 29	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.84" on page 253*
H19.86	2019-57h	Attribute value of position comparison 29	Same as H19.02.	0	-	Real-time	*" H19_en.86" on page 253*
H19.87	2019-58h	Target value of position comparison 30	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.87" on page 253*
H19.89	2019-5Ah	Attribute value of position comparison 30	Same as H19.02.	0	-	Real-time	*" H19_en.89" on page 253*
H19.90	2019-5Bh	Target value of position comparison 31	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.90" on page 254*
H19.92	2019-5Dh	Attribute value of position comparison 31	Same as H19.02.	0	-	Real-time	*" H19_en.92" on page 254*
H19.93	2019-5Eh	Target value of position comparison 32	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.93" on page 254*
H19.95	2019-60h	Attribute value of position comparison 32	Same as H19.02.	0	-	Real-time	*" H19_en.95" on page 254*
H19.96	2019-61h	Target value of position comparison 33	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.96" on page 255*
H19.98	2019-63h	Attribute value of position comparison 33	Same as H19.02.	0	-	Real-time	*" H19_en.98" on page 255*
H19.99	2019-64h	Target value of position comparison 34	-2147483648 to 2147483647	0	-	Real-time	*" H19_en.99" on page 255*
H19.101	2019-66h	Attribute value of position comparison 34	Same as H19.02.	0	-	Real-time	*" H19_en.101" on page 256*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H19.102	2019-67h	Target value of position comparison 35	-2147483648 to 2147483647	0	-	Real-time	" H19_en.102" on page 256
H19.104	2019-69h	Attribute value of position comparison 35	Same as H19.02.	0	-	Real-time	" H19_en.104" on page 256
H19.105	2019-6Ah	Target value of position comparison 36	-2147483648 to 2147483647	0	-	Real-time	" H19_en.105" on page 256
H19.107	2019-6Ch	Attribute value of position comparison 36	Same as H19.02.	0	-	Real-time	" H19_en.107" on page 257
H19.108	2019-6Dh	Target value of position comparison 37	-2147483648 to 2147483647	0	-	Real-time	" H19_en.108" on page 257
H19.110	2019-6Fh	Attribute value of position comparison 37	Same as H19.02.	0	-	Real-time	" H19_en.110" on page 257
H19.111	2019-70h	Target value of position comparison 38	-2147483648 to 2147483647	0	-	Real-time	" H19_en.111" on page 257
H19.113	2019-72h	Attribute value of position comparison 38	Same as H19.02.	0	-	Real-time	" H19_en.113" on page 258
H19.114	2019-73h	Target value of position comparison 39	-2147483648 to 2147483647	0	-	Real-time	" H19_en.114" on page 258
H19.116	2019-75h	Attribute value of position comparison 39	Same as H19.02.	0	-	Real-time	" H19_en.116" on page 258
H19.117	2019-76h	Target value of position comparison 40	-2147483648 to 2147483647	0	-	Real-time	" H19_en.117" on page 258
H19.119	2019-78h	Attribute value of position comparison 40	Same as H19.02.	0	-	Real-time	" H19_en.119" on page 259

6.19 Parameter Group H24

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H24.00	2024-01h	Message number selection [PN922]	0 to 65535	3	-	Unchangeable	" H24_en.00" on page 259
H24.01	2024-02h	Heartbeat warning threshold [PN925]	0 to 65535	5	-	At stop	" H24_en.01" on page 259
H24.02	2024-03h	Fault message counter [PN944]	0 to 65535	0	-	Unchangeable	" H24_en.02" on page 260
H24.03	2024-04h	Fault code [PN947]	0 to 65535	0	-	Unchangeable	" H24_en.03" on page 260
H24.04	2024-05h	Fault No.	0 to 63	0	-	At stop	" H24_en.04" on page 260
H24.05	2024-06h	Fault condition counter [PN952]	0 to 65535	0	-	At stop	" H24_en.05" on page 260
H24.06	2024-07h	Sensor header [PN979[0]]	0 to 4294967295	20754	-	At stop	" H24_en.06" on page 261
H24.08	2024-09h	Sensor type [PN979[1]]	0 to 4294967295	2147483650	-	At stop	" H24_en.08" on page 261
H24.10	2024-0Bh	Sensor resolution [PN979[2]]	0 to 4294967295	256	-	At stop	" H24_en.10" on page 261
H24.12	2024-0Dh	Sensor G1_X1ST1 displacement factor [PN979[3]]	0 to 24	15	-	At stop	" H24_en.12" on page 261
H24.14	2024-0Fh	Sensor G1_X1ST2 displacement factor [PN979[4]]	0 to 24	15	-	At stop	" H24_en.14" on page 262
H24.16	2024-11h	Sensor multi-turn number [PN979[5]]	0 to 4294967295	512	-	At stop	" H24_en.16" on page 262
H24.19	2024-14h	Synchronization cycle	0 to 65535	999	-	Unchangeable	" H24_en.19" on page 262

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H24.20	2024-15h	Network parameter write flag	0 to 3	0	-	At stop	" H24_en.20" on page 263
H24.22	2024-17h	IP Address	0 to 0	0	-	Real-time	" H24_en.22" on page 263
H24.24	2024-19h	Subnet mask	0 to 0	0	-	Real-time	" H24_en.24" on page 263
H24.26	2024-1Bh	Default gateway	0 to 0	0	-	Real-time	" H24_en.26" on page 263
H24.28	2024-1Dh	AC1 speed feedback selection	0: Normal 1: High precision	0	-	At stop	" H24_en.28" on page 264
H24.32	2024-21h	DSC position loop gain selection	0: Local position loop gain 1: PLC position loop gain 3: DSC manual tuning	0	-	At stop	" H24_en.32" on page 264
H24.33	2024-22h	Number of Sync with advanced DSC position feedback	0 to 16	1	-	Real-time	" H24_en.33" on page 268
H24.34	2024-23h	Loop gain selection switch	0: Stiffness level adapted based on DSC gain 1: Stiffness level adapted based on H09.01	0	-	At stop	" H24_en.34" on page 268
H24.35	2024-24h	Customized telegram 850 transmission	0: No assignment 1: VDO 2: External DI state	0	-	Real-time	" H24_en.35" on page 264
H24.36	2024-25h	User-defined 850 reception	0: No assignment 1: VDI 2: External DO state	0	-	Real-time	" H24_en.36" on page 265
H24.37	2024-26h	Extra telegram	0 to 65535	0	-	At stop	" H24_en.37" on page 265
H24.38	2024-27h	Customized receive word	0: No function 1: Additive torque 2: Forced DO	0	-	Real-time	" H24_en.38" on page 265
H24.39	2024-28h	Customized transmission word	0: No function 1: Actual torque 2: Actual current 3: DI state	0	-	Real-time	" H24_en.39" on page 265
H24.41	2024-2Ah	Device name loss warning selection	0 to 1	0	-	Real-time	" H24_en.41" on page 266
H24.42	2024-2Bh	Number of consecutive loss detections	0 to 65535	8	-	Real-time	" H24_en.42" on page 266

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H24.43	2024-2Ch	Communication timeout time	1 to 65535	1000	-	Real-time	" H24_en.43" on page 266
H24.44	2024-2Dh	FPGA synchronous detection deviation threshold	0 ns to 65535 ns	3000	ns	At stop	" H24_en.44" on page 267
H24.45	2024-2Eh	MAC address	0 to 65535	0	-	Real-time	" H24_en.45" on page 267
H24.46	2024-2Fh	MAC address	0 to 65535	0	-	Real-time	" H24_en.46" on page 267
H24.47	2024-30h	MAC address	0 to 65535	0	-	Real-time	" H24_en.47" on page 267
H24.48	2024-31h	DSC position loop gain coefficient	1 to 31	10	-	At stop	" H24_48" on page 268

6.20 Parameter Group H25

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H25.00	2025–01h	EPOS max. speed	1 LU/min–40000000 LU/min	30000	1000 LU/min	Real-time	" H25_en.00" on page 269
H25.02	2025-03h	EPOS max. acceleration	1 LU/s/s–2000000 LU/s/s	100	1000 LU/s/s	Real-time	" H25_en.02" on page 269
H25.04	2025-05h	EPOS max. deceleration	1 LU/s/s–2000000 LU/s/s	100	1000 LU/s/s	Real-time	" H25_en.04" on page 269
H25.06	2025-07h	EPOS ramp deceleration	1 LU/s/s–2000000 LU/s/s	100	1000 LU/s/s	Real-time	" H25_en.06" on page 270
H25.10	2025-0Bh	EPOS positioning reached threshold	0LU–2147483647LU	7	1LU	Real-time	" H25_en.10" on page 270
H25.12	2025-0Dh	EPOS positioning reached window time	0 ms to 2147483647 ms	0	ms	Real-time	" H25_en.12" on page 270
H25.14	2025-0Fh	Jog1	-40000000 LU/min–40000000 LU/min	-300	1000 LU/min	Real-time	" H25_en.14" on page 270
H25.16	2025-11h	Jog2	-40000000 LU/min–40000000 LU/min	300	1000 LU/min	Real-time	" H25_en.16" on page 271

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H25.18	2025-13h	EPOS-JOG1 position increment	0 LU–2147483648 LU	1000	LU	Real-time	" H25_en.18" on page 271
H25.20	2025-15h	EPOS-JOG2 position increment	0 LU–2147483648 LU	1000	LU	Real-time	" H25_en.20" on page 271
H25.22	2025-17h	Homing type	-2 to 35	0	-	Real-time	" H25_en.22" on page 271
H25.23	2025-18h	Homing high speed	0 LU/min.–40000000 LU/min.	5000	1000 LU/min	Real-time	" H25_en.23" on page 272
H25.25	2025-1Ah	Homing low speed	0 LU/min.–40000000 LU/min.	300	1000 LU/min	Real-time	" H25_en.25" on page 272
H25.27	2025-1Ch	Homing acceleration/ deceleration override	0.00%–100.00%	100.00	%	Real-time	" H25_en.27" on page 272

6.21 Parameter Group H27

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H27.00	2027-01h	Current block	0 to 15	0	-	Unchangeable	" H27_en.00" on page 273
H27.01	2027-02h	Block 0 task	1: Positioning 2: Fixed stopper 3: Forward cycle 4: Reverse cycle 5: Waiting 6: Switching 7: Setting I/O 8: Resetting I/O	1	-	Real-time	" H27_en.01" on page 273
H27.02	2027-03h	Block 1 task	Same as H27.01.	1	-	Real-time	" H27_en.02" on page 273
H27.03	2027-04h	Block 2 task	Same as H27.01.	1	-	Real-time	" H27_en.03" on page 274
H27.04	2027-05h	Block 3 task	Same as H27.01.	1	-	Real-time	" H27_en.04" on page 274
H27.05	2027-06h	Block 4 task	Same as H27.01.	1	-	Real-time	" H27_en.05" on page 274
H27.06	2027-07h	Block 5 task	Same as H27.01.	1	-	Real-time	" H27_en.06" on page 274
H27.07	2027-08h	Block 6 task	Same as H27.01.	1	-	Real-time	" H27_en.07" on page 275

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H27.08	2027-09h	Block 7 task	Same as H27.01.	1	-	Real-time	" H27_en.08" on page 275
H27.09	2027-0Ah	Block 8 task	Same as H27.01.	1	-	Real-time	" H27_en.09" on page 275
H27.10	2027-0Bh	Block 9 task	Same as H27.01.	1	-	Real-time	" H27_en.10" on page 275
H27.11	2027-0Ch	Block 10 task	Same as H27.01.	1	-	Real-time	" H27_en.11" on page 276
H27.12	2027-0Dh	Block 11 task	Same as H27.01.	1	-	Real-time	" H27_en.12" on page 276
H27.13	2027-0Eh	Block 12 task	Same as H27.01.	1	-	Real-time	" H27_en.13" on page 276
H27.14	2027-0Fh	Block 13 task	Same as H27.01.	1	-	Real-time	" H27_en.14" on page 276
H27.15	2027-10h	Block 14 task	Same as H27.01.	1	-	Real-time	" H27_en.15" on page 277
H27.16	2027-11h	Block 15 task	Same as H27.01.	1	-	Real-time	" H27_en.16" on page 277
H27.17	2027-12h	Block 0 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.17" on page 277
H27.19	2027-14h	Block 1 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.19" on page 278
H27.21	2027-16h	Block 2 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.21" on page 278
H27.23	2027-18h	Block 3 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.23" on page 278
H27.25	2027-1Ah	Block 4 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.25" on page 278
H27.27	2027-1Ch	Block 5 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.27" on page 279
H27.29	2027-1Eh	Block 6 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.29" on page 279
H27.31	2027-20h	Block 7 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.31" on page 279
H27.33	2027-22h	Block 8 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.33" on page 279
H27.35	2027-24h	Block 9 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.35" on page 280
H27.37	2027-26h	Block 10 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.37" on page 280
H27.39	2027-28h	Block 11 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.39" on page 280
H27.41	2027-2Ah	Block 12 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.41" on page 280

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H27.43	2027-2Ch	Block 13 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.43" on page 281
H27.45	2027-2Eh	Block 14 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.45" on page 281
H27.47	2027-30h	Block 15 position	-2147483648LU to 2147483647LU	0	1LU	Real-time	" H27_en.47" on page 281
H27.49	2027-32h	Block 0 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.49" on page 282
H27.51	2027-34h	Block 1 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.51" on page 282
H27.53	2027-36h	Block 2 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.53" on page 282
H27.55	2027-38h	Block 3 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.55" on page 282
H27.57	2027-3Ah	Block 4 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.57" on page 283
H27.59	2027-3Ch	Block 5 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.59" on page 283
H27.61	2027-3Eh	Block 6 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.61" on page 283
H27.63	2027-40h	Block 7 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.63" on page 283
H27.65	2027-42h	Block 8 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.65" on page 284
H27.67	2027-44h	Block 9 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.67" on page 284
H27.69	2027-46h	Block 10 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.69" on page 284
H27.71	2027-48h	Block 11 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.71" on page 285
H27.73	2027-4Ah	Block 12 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.73" on page 285
H27.75	2027-4Ch	Block 13 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.75" on page 285
H27.77	2027-4Eh	Block 14 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.77" on page 285
H27.79	2027-50h	Block 15 speed	0 LU/min–4294967295 LU/min.	600	1000 LU/min	Real-time	" H27_en.79" on page 286
H27.81	2027-52h	Block 0 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.81" on page 286
H27.82	2027-53h	Block 1 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.82" on page 286
H27.83	2027-54h	Block 2 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.83" on page 286

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H27.84	2027-55h	Block 3 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.84" on page 287
H27.85	2027-56h	Block 4 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.85" on page 287
H27.86	2027-57h	Block 5 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.86" on page 287
H27.87	2027-58h	Block 6 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.87" on page 287
H27.88	2027-59h	Block 7 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.88" on page 288
H27.89	2027-5Ah	Block 8 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.89" on page 288
H27.90	2027-5Bh	Block 9 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.90" on page 288
H27.91	2027-5Ch	Block 10 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.91" on page 289
H27.92	2027-5Dh	Block 11 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.92" on page 289
H27.93	2027-5Eh	Block 12 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.93" on page 289
H27.94	2027-5Fh	Block 13 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.94" on page 289
H27.95	2027-60h	Block 14 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.95" on page 290
H27.96	2027-61h	Block 15 acc. override	1.00%–100.00%	100.00	%	Real-time	" H27_en.96" on page 290

6.22 Parameter Group H28

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H28.00	2028-01h	Block 0 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.00" on page 290
H28.01	2028-02h	Block 1 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.01" on page 290
H28.02	2028-03h	Block 2 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.02" on page 291
H28.03	2028-04h	Block 3 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.03" on page 291
H28.04	2028-05h	Block 4 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.04" on page 291

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H28.05	2028-06h	Block 5 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.05" on page 292
H28.06	2028-07h	Block 6 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.06" on page 292
H28.07	2028-08h	Block 7 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.07" on page 292
H28.08	2028-09h	Block 8 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.08" on page 292
H28.09	2028-0Ah	Block 9 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.09" on page 293
H28.10	2028-0Bh	Block 10 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.10" on page 293
H28.11	2028-0Ch	Block 11 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.11" on page 293
H28.12	2028-0Dh	Block 12 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.12" on page 293
H28.13	2028-0Eh	Block 13 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.13" on page 294
H28.14	2028-0Fh	Block 14 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.14" on page 294
H28.15	2028-10h	Block 15 dec. override	1.00%–100.00%	100.00	%	Real-time	" H28_en.15" on page 294
H28.16	2028-11h	Block 0 task mode	0 to 65535	0	-	Real-time	" H28_en.16" on page 294
H28.17	2028-12h	Block 1 task mode	0 to 65535	0	-	Real-time	" H28_en.17" on page 295
H28.18	2028-13h	Block 2 task mode	0 to 65535	0	-	Real-time	" H28_en.18" on page 295
H28.19	2028-14h	Block 3 task mode	0 to 65535	0	-	Real-time	" H28_en.19" on page 295
H28.20	2028-15h	Block 4 task mode	0 to 65535	0	-	Real-time	" H28_en.20" on page 296
H28.21	2028-16h	Block 5 task mode	0 to 65535	0	-	Real-time	" H28_en.21" on page 296
H28.22	2028-17h	Block 6 task mode	0 to 65535	0	-	Real-time	" H28_en.22" on page 296
H28.23	2028-18h	Block 7 task mode	0 to 65535	0	-	Real-time	" H28_en.23" on page 296
H28.24	2028-19h	Block 8 task mode	0 to 65535	0	-	Real-time	" H28_en.24" on page 297
H28.25	2028-1Ah	Block 9 task mode	0 to 65535	0	-	Real-time	" H28_en.25" on page 297
H28.26	2028-1Bh	Block 10 task mode	0 to 65535	0	-	Real-time	" H28_en.26" on page 297

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H28.27	2028-1Ch	Block 11 task mode	0 to 65535	0	-	Real-time	" H28_en.27" on page 297
H28.28	2028-1Dh	Block 12 task mode	0 to 65535	0	-	Real-time	" H28_en.28" on page 298
H28.29	2028-1Eh	Block 13 task mode	0 to 65535	0	-	Real-time	" H28_en.29" on page 298
H28.30	2028-1Fh	Block 14 task mode	0 to 65535	0	-	Real-time	" H28_en.30" on page 298
H28.31	2028-20h	Block 15 task mode	0 to 65535	0	-	Real-time	" H28_en.31" on page 298
H28.32	2028-21h	Block 0 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.32" on page 299
H28.34	2028-23h	Block 1 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.34" on page 299
H28.36	2028-25h	Block 2 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.36" on page 299
H28.38	2028-27h	Block 3 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.38" on page 300
H28.40	2028-29h	Block 4 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.40" on page 300
H28.42	2028-2Bh	Block 5 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.42" on page 300
H28.44	2028-2Dh	Block 6 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.44" on page 300
H28.46	2028-2Fh	Block 7 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.46" on page 301
H28.48	2028-31h	Block 8 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.48" on page 301
H28.50	2028-33h	Block 9 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.50" on page 301
H28.52	2028-35h	Block 10 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.52" on page 301
H28.54	2028-37h	Block 11 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.54" on page 302
H28.56	2028-39h	Block 12 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.56" on page 302
H28.58	2028-3Bh	Block 13 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.58" on page 302
H28.60	2028-3Dh	Block 14 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.60" on page 302
H28.62	2028-3Fh	Block 15 task parameter	0 to 2147483647	0	-	Real-time	" H28_en.62" on page 303

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H28.64	2028-41h	Fixed stopper monitoring window	0 to 4294967295	0	-	Real-time	" H28_en.64" on page 303
H28.66	2028-43h	Max. following error of fixed stopper	0 to 4294967295	0	-	Real-time	" H28_en.66" on page 303
H28.68	2028-45h	External trigger source	0: Triggered by STW1.bit13 1: Triggered by DI	0	-	At stop	" H28_en.68" on page 304

6.23 Parameter Group H29

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.00	2029-01h	Control word 1 (STW1)	Bit0: 1 = Pulse enable allowed; 0 = OFF1, ramp to stop, pulse cleared, ready to switch on bit1: 1 = No OFF2 (pulse enable allowed); 0 = OFF2, coast to stop, pulse cleared immediately, switch-on inhibited bit2: 1 = No OFF3 (pulse enable allowed); 0 = OFF3 quick stop, P1135 brake, pulse cleared, switch-on inhibited bit3: 1 = Enable allowed; 0 = Operation inhibited (pulse cleared) bit4: 1 = Ramp function generator available; 0 = Ramp function generator inhibited bit5:1 = Ramp function generator continued; 0 = Ramp function generator output frozen bit6:1 = Setpoint enabled; 0 = Setpoint inhibited (ramp function generator input being zero) bit7: Rising edge-triggered, response fault bit8: JOG1 bit9: JOG2 bit10: 1 = PLC controlled bit11: Reserved bit12: Reserved bit13: Reserved bit14: Reserved bit15: Reserved	0	-	Unchangeable	" H29_en.00" on page 304
H29.01	2029-02h	Control word 2 (STW2)	0 to 65535	0	-	Unchangeable	" H29_en.01" on page 305
H29.02	2029-03h	Speed setpoint A (VEL_NSOLL_A)	0 to 65535	0	-	Unchangeable	" H29_en.02" on page 305
H29.04	2029-05h	Speed setpoint B (VEL_NSOLL_B)	-2147483648 to 2147483647	0	-	Unchangeable	" H29_en.04" on page 306

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.06	2029-07h	Encoder control word (G1_STW)	bit0: bit7 = 0, searching for reference point 1; bit7 = 1, measure the pointer 1 bit1: bit7 = 0, searching for reference point 2; bit7 = 1, measure the pointer 2 bit2: bit7 = 0, searching for reference point 3; bit7 = 1, measure the pointer 3 bit3: bit7 = 0, searching for reference point 4; bit7 = 1, measuring pointer 4 bit4: bit4–bit6 000b = Not activated; 001b = Selected functions activated; 010b = Read value; 011b = Cancel bit5: bit4–bit6 000b = Not activated; 001b = Selected functions activated; 010b = Read value; 011b = Cancel bit6: bit4–bit6 000b = Not activated; 001b = Selected functions activated; 010b = Read value; 011b = Cancel bit7: Mode selection; 1 = Real-time measurement; 0 = Searching for the reference point bit8: Reserved bit9: Reserved bit10: Reserved bit11: Zero setting mode; 0 = Absolute position; 1 = Relative position bit12: Rising edge-triggered; request for setting the zero bit bit13: Rising edge-triggered; request for cyclic transmission of absolute position in G1_XIST2 bit14: Parking encoder bit15: Rising-edge triggered Response encoder fault	0	-	Unchangeable	" H29_en.06" on page 306
H29.07	2029-08h	Position deviation (XERR)	-2147483648 to 2147483647	0	-	Unchangeable	" H29_en.07" on page 307

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.09	2029-0Ah	Position loop gain (KPC)	-2147483648 to 2147483647	0	-	Unchangeable	" H29_en.09" on page 307
H29.11	2029-0Ch	Position control word 1 (POS_STW1)	bit0: bit0–bit5 block selection IS620F supports up to 16 blocks bit1: bit0–bit5 block selection IS620F supports up to 16 blocks bit2: bit0–bit5 block selection IS620F supports up to 16 blocks bit3: bit0–bit5 block selection IS620F supports up to 16 blocks bit4: bit0–bit5 block selection IS620F supports up to 16 blocks bit5: bit0–bit5 block selection IS620F supports up to 16 blocks bit6: Reserved bit7: Reserved bit8: 1 = Absolute positioning 0 = Relative positioning bit9: 1 = Forward bit10: 1 = Reverse bit11: Reserved bit12: 1 = Continuous transmission 0 = MDI block modification activated by running the rising edge of the program segment (STW1.6) bit13: Reserved bit14: 1 = Setting signal selected 0 = Positioning signal selected bit15: 1= MDI sub-mode 0 = Program segment sub-mode	0	-	Unchangeable	" H29_en.11" on page 308
H29.12	2029-0Dh	MDI position setting (EPOS)	-2147483648 to 2147483647	0	-	Unchangeable	" H29_en.12" on page 308
H29.14	2029-0Fh	MDI speed setting (EPOS)	0 to 4294967295	0	-	Unchangeable	" H29_en.14" on page 309
H29.16	2029-11h	MDI acceleration override (EPOS)	0 to 65535	0	-	Unchangeable	" H29_en.16" on page 309

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.17	2029-12h	MDI deceleration override (EPOS)	0 to 65535	0	-	Unchangeable	" H29_en.17" on page 309
H29.18	2029-13h	MDI mode (EPOS)	bit0: 1 = Absolute positioning 0 = Relative positioning bit1: 1 = Forward bit2: 1 = Reverse bit3: Reserved bit4: Reserved bit5: Reserved bit6: Reserved bit7: Reserved bit8: Reserved bit9: Reserved bit10: Reserved bit11: Reserved bit12: Reserved bit13: Reserved bit14: Reserved bit15: Reserved	0	-	Unchangeable	" H29_en.18" on page 309
H29.19	2029-14h	Position control word 2 (POS_STW2)	bit0: 1 = Tracking mode activated bit1: 1 = Set reference point bit2: 1 = Reference point stopper activated bit3: Reserved bit4: Reserved bit5: 1 = JOG incremental positioning activated 0 = Speed activated bit6: Reserved bit7: Reserved bit8: Reserved bit9: 1 = Searching for the reference point in the reverse direction 0 = Start searching for the reference point in the forward direction bit10: Reserved bit11: Reserved bit12: Reserved bit13: Reserved bit14: 1 = Software limit switch activated bit15: 1 = Stopper activated	0	-	Unchangeable	" H29_en.19" on page 310
H29.20	2029-15h	Position speed override (EPOS)	0 to 65535	0	-	Unchangeable	" H29_en.20" on page 311

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.21	2029-16h	Customized receive word for telegram 111	0 to 65535	0	-	Unchangeable	" H29_en.21" on page 311
H29.22	2029-17h	Torque reduction (MOMRED)	0 to 16363	0	-	Unchangeable	" H29_en.22" on page 312
H29.23	2029-18h	Torque reference (AdditiveTorque)	-32768 to 32767	0	-	Unchangeable	" H29_en.23" on page 312
H29.24	2029-19h	Torque upper limit (UpperLimit)	-32768 to 32767	0	-	Unchangeable	" H29_en.24" on page 312
H29.25	2029-1Ah	Torque lower limit	-32768 to 32767	0	-	Unchangeable	" H29_en.25" on page 312
H29.26	2029-1Bh	Customized receive word for 850 additive telegram	0 to -1	0	-	Unchangeable	" H29_en.26" on page 313
H29.27	2029-1Ch	Message word (EPOS_MELDW)	0 to -1	0	-	Unchangeable	" H29_en.27" on page 313

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.50	2029-33h	Status word 1 (ZSW1)	bit0: 1 = Ready to switch on, control circuit switched on, initialization done bit1: 1 = Ready to run, main circuit switched on bit2: 1 = Run enable bit3: 1 = Fault bit4: 1 = Coast to stop deactivated (OFF2 deactivated) 0 = Cost to stop activated (OFF2 activated) bit5: 1 = Quick stop deactivated (OFF2 deactivated) 0 = Quick stop activated (OFF2 activated) bit6: 1 = Switch-on inhibited bit7: 1 = Warning existed bit8: Reserved bit9: 1 = PLC control request bit10: Reserved bit11: Reserved bit12: Reserved bit13: Reserved bit14: Reserved bit15: Reserved	0	-	Unchangeable	*" H29_en.50" on page 313*
H29.51	2029-34h	Status word 2 (ZSW2)	bit0: Reserved bit1: Reserved bit2: Reserved bit3: Reserved bit4: Reserved bit5: Reserved bit6: Reserved bit7: Reserved bit8: Reserved bit9: Reserved bit10: Reserved bit11: Reserved bit12: bit12–bit15 drive heartbeat count value, uploaded to PLC bit13: bit12–bit15 drive heartbeat count value, uploaded to PLC bit14: bit12–bit15 drive heartbeat count value, uploaded to PLC bit15: bit12–bit15 drive heartbeat count value, uploaded to PLC	0	-	Unchangeable	*" H29_en.51" on page 314*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.52	2029-35h	Speed actual value A (VEL_NIST_A)	-32768 to 32767	0	-	Unchangeable	" H29_en.52" on page 315
H29.53	2029-36h	Speed actual B (VEL_NSOLL_B)	-2147483648 to 2147483647	0	-	Unchangeable	" H29_en.53" on page 315
H29.55	2029-38h	Encoder status word (G1_ZSW)	bit0: 1 = Function 1 activated bit1: 1 = Function 2 activated bit2: 1 = Function 3 activated bit3: 1 = Function 4 activated bit4: 1 = Actual value 1 readable bit5: 1 = Actual value 2 readable bit6: 1 = Actual value 3 readable bit7: 1 = Actual value 4 readable bit8: Touch probe 1 bit9:Touch probe 2 bit10: Reserved bit11: Response encoder fault bit12: Set zero response bit13: Cyclic transmission of the absolute position in G1_XIST2 bit14: Parking encoder activated bit15: The encoder is faulty.	0	-	Unchangeable	" H29_en.55" on page 316
H29.56	2029-39h	Encoder 1 position actual value 1 (G1_XIST1)	0 to 0	0	-	Unchangeable	" H29_en.56" on page 316
H29.58	2029-3Bh	Encoder 1 position actual value 2 (G1_XIST2)	0 to 0	0	-	Unchangeable	" H29_en.58" on page 316

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.60	2029-3Dh	Position status word 1 (POS_ZSW1)	bit0: bit0–bit5 effective traversing block IS620F supports up to 16 blocks bit1: bit0–bit5 effective traversing block IS620F supports up to 16 blocks bit2:bit0–bit5 effective traversing block IS620F supports up to 16 blocks bit3:bit0–bit5 effective traversing block IS620F supports up to 16 blocks bit4:bit0–bit5 effective traversing block IS620F supports up to 16 blocks bit5:bit0–bit5 effective traversing block IS620F supports up to 16 blocks bit6: Reserved bit7: Reserved bit8: 1 = Reverse stopper activated bit9: 1 = Forward stopper activated bit10: 1 = JOG activated bit11: 1 = Proactive reference point approach activated bit12: Reserved bit13: 1 = Running block activated bit14: 1 = Setting activated bit15: 1 = MDI activated 0 = MDI deactivated	0	-	Unchangeable	*" H29_en.60" on page 317*

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.61	2029-3Eh	Position status word 2 (POS_ZSW2)	bit0:1 = Tracking mode activated bit1:1 = Speed limit activated bit2:1 = Setpoint available bit3: Reserved bit4:1= Axis moving forwardly bit5:1 = Axis moving reversely bit6:1 = Negative software limit switch reached bit7:1 = Positive software limit switch reached bit8: 1 = Position actual value < = Limit switch position 1 bit9:1 = Position actual value < = Limit switch position 2 bit10:1 = Direct output 1 through running block setting bit11:1 = Direct output 2 through running block setting bit12:1 = Fixed stop point reached bit13: 1 = Fixed stop point fastening torque reached bit14: 1 = Running to the fixed stop point activated bit15: 1 = RUN command activated	0	-	Unchangeable	" H29_en.61" on page 317
H29.63	2029-40h	Customized send word for telegram 111	0 to 65535	0	-	Unchangeable	" H29_en.63" on page 318
H29.65	2029-42h	Fault code	0 to 65535	0	-	Unchangeable	" H29_en.65" on page 318
H29.66	2029-43h	Warning code	0 to 65535	0	-	Unchangeable	" H29_en.66" on page 319
H29.67	2029-44h	Actual torque	32768 to 32767	0	-	Unchangeable	" H29_en.67" on page 319
H29.68	2029-45h	User-defined send word for 850 additive telegram	0 to 65535	0	-	Unchangeable	" H29_en.68" on page 319

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H29.69	2029-46h	XIST_A position feedback	-2147483648 to 2147483647	0	-	Unchangeable	" H29_en.69" on page 319
H29.90	2029-5Bh	Modulo axis modulus	0 to 2147483647	0	-	Unchangeable	" H29_en.90" on page 320

6.24 Parameter Group H30

Parameter	Hex	Name	Setpoint	Default	Unit	Change mode:	Page
H30.01	2030-02h	DO function state 1 read through communication	0 to 65535	0	-	Unchangeable	" H30_en.01" on page 320
H30.02	2030-03h	DO function state 2 read through communication	0–65535+H941	0	-	Unchangeable	" H30_en.02" on page 320

6.25 Parameter Group H31

Parameter	Hex	Name	Setpoint	Default	Unit	Change Mode	Page
H31.00	2031-01h	VDI virtual level set through communication	0 to 65535	0	-	Real-time	" H31_en.00" on page 321
H31.04	2031-05h	DO state set through communication	0 to 65535	0	-	Real-time	" H31_en.04" on page 321
H31.09	2031-0Ah	Speed reference set via communication	-6000.000rpm to 6000.000rpm	0.000	RPM	Real-time	" H31_en.09" on page 322
H31.11	2031-0Ch	Torque reference set via communication	-100.000%–100.000%	0.000	%	Real-time	" H31_en.11" on page 322

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