



SEW
EURODRIVE

Manual



Application Inverter
MOVIDRIVE® system
Parameter Description



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1 Parameter description**1.1 Basic device****1.1.1 8299 Quality assurance**

Quality assurance data

8299.1 Test data

Factory setting: 0

Unit:

Data type: UInt8 (DataArray)

Data length: 944

Resolution: 1

Value range: 0 to 255

Test data

1.1.2 8300 Device label

These parameters show the identification data of the device.

8300.1 Device identification

Factory setting:

Data type: String8Bit (fill level array)

Data length: 32

Resolution:

Value range:

Complete type designation of the device, e.g. MDA90A-0020-503-X-S00

8300.2 GUID

Factory setting: 0

Unit:

Data type: UInt8 (DataArray)

Data length: 16

Resolution: 1

Value range: 0 to 255

GUID = "Globally Unique Identifier"

Globally unique number with 128 bits (16 bytes) that is used in distributed computer systems.

8300.6 Function status

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Sequential number that represents a certain scope of functions (scope of parameters, implemented functions).

8300.7 Technology level

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 9

Technology level activated by means of parameter 8438.11

8300.8 Application level

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 9

Application level activated by means of parameter 8438.1

8300.9 Device family

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = None**
- 16843009 = MOVITRAC® classic
- 16843265 = MOVITRAC® advanced
- 16909057 = MDA modular
- 16909059 = MDD modular
- 16909060 = MLA modular
- 16909061 = MDA modular CiA402
- 16909062 = MDD modular CiA402
- 16909313 = MDX system
- 16909314 = MDX technology
- 16909317 = MDX system CiA402

Device family

8300.10 Device variant

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Reserved**
- 1 = A
- 2 = B
- 3 = C
- 4 = D
- 5 = E

Device variant

8300.11 Recommended motor power

Factory setting: 0

Unit: W

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Recommended power of the connected motor

8300.12 Nominal device voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Nominal device voltage

8300.13 Line phases

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **1 = 1-phase device**
- 3 = 3-phase device

Connection type of the device

8300.14 Radio interference suppression level

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = None

- **1 = 0**
- 2 = A
- 3 = B
- 4 = C
- 5 = D (C3)
- 6 = E (C2)
- 7 = F (C1)

Radio interference suppression level of the device according to EN 61800-3.

The following settings can be made:

- 0: No radio interference suppression
- D: Radio interference suppression level C3
- E: Radio interference suppression level C2
- F: Radio interference suppression level C1

8300.15 Standard bus system

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No bus**
- 1 = EtherCAT®/SBusPLUS
- 2 = SBus
- 3 = SBus and EtherCAT®/SBusPLUS

Communication interface of the device

8300.16 Standard encoder system

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No encoder evaluation**
- 1 = One encoder interface
- 2 = Two encoder interfaces
- 3 = Encoder evaluation via subcomponent

Number of available encoder interfaces

8300.17 Overview of implemented labels

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Reserved

- 1 = Device label
 - 2 = Mobile data label
 - 3 = Assembly label
 - 4 = Communication label
 - 5 = Module label
 - 6 = Customer label
 - 7 = Production label
 - 8 = Scan label
- Overview of implemented labels

8300.18 Nominal output current

Factory setting: 0
 Unit: mA
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2147483647
 Nominal output current. The resolution is 1 mA.

8300.20 Component status

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:

- 0 = Invalid main component entries
- 1 = Invalid subcomponent 1 entry
- 2 = Invalid subcomponent 2 entry
- 3 = Invalid subcomponent 3 entry
- 4 = Invalid subcomponent 4 entry

Indicates whether the inputs of the device label are valid. Each entry that is not yet valid, sets its status bit to the value "1". This means a label with value "0" is entirely valid.

8300.21 Power section configuration data set – part number

Factory setting: 0
 Unit:
 Data type: UInt32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 Part number of the power section configuration data set

8300.22 Power section configuration data set – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number of the configuration data set of the power section

8300.23 Power section configuration data set – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Release number of the configuration data set of the power section

8300.25 Main component firmware 1 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Part number of the basic unit firmware

8300.26 Main component firmware 1 – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number of the basic unit firmware

8300.27 Main component firmware 1 – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Release number of the basic unit firmware

8300.28 Main component firmware 2 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Part number of the device update manager firmware

8300.29 Main component firmware 2 – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number of the device update manager firmware

8300.30 Main component firmware 2 – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Release number of the basic unit firmware

8300.31 Main component firmware 3 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Part number of the main FPGA firmware

8300.32 Main component firmware 3 – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Version number of the main FPGA firmware

8300.33 Main component firmware 3 – release

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Release number of the main FPGA firmware

8300.34 Main component firmware 4 – part number

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Part number of the basic unit firmware

8300.35 Main component firmware 4 – version

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Version number of the basic unit firmware

8300.36 Main component firmware 4 – release

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Release number of the basic unit firmware

8300.37 Main component hardware variant ID

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Hardware variant identification of the control electronics

8300.40 Device family subcomponent

Factory setting:

Data type: Enum (DataArray)

Data length: 5

Value range:

- -16056064 = Power section
- -15990528 = CES11A – external encoder card
- -15924992 = CID11A (7 x DI)
- -15924736 = CIA11A (1 x AI, 1 x AO)
- -15924480 = CID21A (4 x DI or 4 x DO)
- -15924224 = CIO21A (2 x AI, 2 x AO, 4 x DI, 4 x DO)
- **0 = None**
- 1 = Unknown
- 84410624 = CFP11A – PROFIBUS
- 84410880 = CFN11A – PROFINET
- 84411136 = CFE11A – EtherNet/IP™ & Modbus TCP
- 84411392 = CFD11A – DeviceNet™
- 84411648 = CFT11A – EtherCAT®
- 84411904 = CFP21A – PROFIBUS
- 84412160 = CFN21A – PROFINET
- 84412416 = CFE21A – EtherNet/IP™ & Modbus/TCP
- 101318913 = CSB21A – safety card
- 101318914 = CSS21A – safety card
- 101318915 = CSB31A – safety card
- 101318916 = CSS31A – safety card
- 101318920 = CSA31A – safety card

Name of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.41 Subcomponent firmware 1 – part number

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Part number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.42 Subcomponent firmware 1 – version

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Version number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.43 Subcomponent firmware 1 – release

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Release number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.44 Subcomponent firmware 2 – part number

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Part number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.45 Subcomponent firmware 2 – version

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Version number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.46 Subcomponent firmware 2 – release

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Release number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.47 Subcomponent hardware variant ID

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Hardware variant identification of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.48 Subcomponent function status

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Function status of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.49 Subcomponent type

Factory setting:

Data type: Enum (DataArray)

Data length: 5

Value range:

- **0 = None**
- 1 = Fieldbus card
- 2 = Encoder evaluation
- 4 = Safety card
- 5 = Power section
- 6 = I/O card

Subcomponent type.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card

- Offset 3: I/O card

8300.50 Subcomponent instance

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 255

Instance of the subcomponent for communication access.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.51 Subcomponent backup/restore

Factory setting:

Data type: Bit field (DataArray)

Data length: 5

Value range:

- 0 = Backup service supported
- 1 = Restore service supported
- 2 = Cancel restore service supported
- 3 = Hash service supported

In the event of a backup/restore of the device, the subcomponents are to be backed up/restored with a separate backup/restore via subcomponent access.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

1.1.3 8301 Mobile data label

Mobile data label

8301.9 Device family

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Device family

8301.11 Device power

Factory setting: 0

Unit: W

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Device power

8301.12 Device voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Device voltage

8301.40 Device family subcomponent

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Value range: 0 to 4294967295

Subcomponent device family

8301.70 Parameter set inconsistent

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

The parameter set is inconsistent. To rectify the fault, restore the delivery state or load a consistent parameter set.

8301.100 User unit position DT1 numerator

Factory setting: 65536

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.101 User unit position DT1 denominator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.102 User unit speed DT1 numerator

Factory setting: 10000

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.103 User unit speed DT1 denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.104 User unit acceleration DT1 numerator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.105 User unit acceleration DT1 denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.110 User unit position DT2 numerator

Factory setting: 65536

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.111 User unit position DT2 denominator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.112 User unit speed DT2 numerator

Factory setting: 10000

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.113 User unit speed DT2 denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.114 User unit acceleration DT2 numerator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8301.115 User unit acceleration DT2 denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

1.1.4 8303 Customer label

These parameters contain customer-specific data.

8303.1 Device designation

Data type: String8Bit (fill level array)

Data length: 241

Resolution:

Value range:

If customers want to use their own device order numbers, then SEW-EURODRIVE can specify this number in this parameter according to the ordered device.

1.1.5 8304 Production data

Production data of the device. The data on the option card is only displayed, if the card was installed at the factory. If the customer installed the option card, no data is displayed.

8304.1 Serial number

Data type: String8Bit (fill level array)

Data length: 32

Resolution:

Value range:

Serial number of the unit

8304.2 Device status

Data type: String8Bit (fill level array)

Data length: 37

Resolution:

Value range:

Device status. Fields 1 to 9 are the number in the status line on the nameplate or on the status label.

8304.3 Device ID add-on

Data type: String8Bit (fill level array)

Data length: 11

Resolution:

Value range:

Information from production that cannot be derived from the configuration data of the output stage and the firmware, such as "Coated pcb" = "/L".

8304.10 Option 1 – designation

Data type: String8Bit (fill level array)

Data length: 9

Resolution:

Value range:

Designation of option card 1

8304.11 Option 1 – status

Data type: String8Bit (fill level array)

Data length: 37

Resolution:

Value range:

Device status of option card 1

8304.20 Option 2 – designation

Data type: String8Bit (fill level array)

Data length: 9
Resolution:
Value range:
Designation of option card 2

8304.21 Option 2 – status

Data type: String8Bit (fill level array)
Data length: 37
Resolution:
Value range:
Device status of option card 2

8304.30 Option 3 – designation

Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Value range:
Designation of option card 3

8304.31 Option 3 – status

Data type: String8Bit (fill level array)
Data length: 37
Resolution:
Value range:
Device status of option card 3

8304.40 Option 4 – designation

Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Value range:
Designation of option card 4

8304.41 Option 4 – status

Data type: String8Bit (fill level array)
Data length: 37
Resolution:
Value range:
Device status of option card 4

8304.50 Option 5 – designation

Data type: String8Bit (fill level array)
Data length: 9

Resolution:
Value range:
Designation of option card 5

8304.51 Option 5 – status

Data type: String8Bit (fill level array)
Data length: 37
Resolution:
Value range:
Device status of option card 5

1.1.6 8305 Scan label

Scan label

8305.1 Device identification

Factory setting:
Data type: String8Bit (fill level array)
Data length: 32
Resolution:
Value range:
Device identification

8305.2 GUID

Factory setting: 0
Unit:
Data type: UInt8 (DataArray)
Data length: 16
Resolution: 1
Value range: 0 to 255
GUID = "Globally Unique Identifier"
Globally unique number with 128 bits (16 bytes) that is used in distributed computer systems.

8305.3 Customer-specific device designation

Data type: String8Bit (fill level array)
Data length: 241
Resolution:
Value range:
Customer-specific device designation

8305.4 Serial number

Data type: String8Bit (fill level array)
Data length: 32

Resolution:

Value range:

Serial number of the unit

8305.5 Main component firmware 1 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Part number of the basic unit firmware

8305.6 Main component firmware 1 – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number of the basic unit firmware

8305.7 Main component firmware 1 – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Release number of the basic unit firmware

1.1.7 8310 Build info

Build info

8310.1 Changeset number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Changeset number

8310.2 Changeset state

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Changeset state

8310.3 Release

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Release

8310.4 Target name

Data type: String8Bit (fill level array)

Data length: 81

Resolution:

Value range:

Target name

8310.5 TFS build number

Data type: String8Bit (fill level array)

Data length: 81

Resolution:

Value range:

TFS build number

1.1.8 8312 Actual values output stage monitoring

Actual values output stage monitoring

8312.1 Chip temperature rise dynamic

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Using the chip temperature rise for dynamic operations. When 100% is reached, the devices switches off with error message "Device utilization".

8312.2 Chip absolute dynamic

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Using the chip temperature for dynamic operations. When 100% is reached, the devices switches off with error message "Device utilization".

8312.3 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Electromechanical utilization of the device (conductor tracks and terminals). When 100% is reached, the devices switches off with error message "Device utilization".

8312.4 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Relative heat sink utilization with reference to the maximum temperature. When 100% is reached, the devices switches off with error message "Device utilization".

8312.5 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Absolute heat sink temperature

8312.6 Total utilization

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Maximum value from absolute chip temperature rise, electromechanical utilization, and heat sink utilization.

8312.7 Thermal current limit

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Maximum possible current the inverter can provide before switching off due to overload. For response, see index 8362.4 and 8363.4.

8312.8 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Prewarning
- 1 = Heat sink temperature prewarning
- 2 = Electromechanical utilization prewarning

Status bits

1.1.9 8313 Determine inertia

These parameters are used to determine the inertia.

8313.4 Actual inertia

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1 to 2147483647

Inertia value determined last

8313.8 Speed filter weighting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1000 to 10000000

Weights the determined time constant for the actual value filter for speed.

1.1.10 8314 Limit switches

Limit switch processing makes sure that the travel range of a drive is observed. For this purpose, you can program the digital inputs to the functions "positive limit switch" and "negative limit switch". The limit switches are connected to these digital inputs.

The limit switches must be 0-active and continuously activated in the limit switch area (= hit).

8314.1 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = HW limit switch positive – hit
- 1 = HW limit switch negative – hit
- 2 = SW limit switch positive – monitored
- 3 = SW limit switch negative – monitored
- 4 = SW limit switch positive – hit
- 5 = SW limit switch negative – hit

State of the limit switches. Software limit switches are treated like hardware limit switches irrespective of the FCB. This means that if the position of the software limit switch is exceeded, the respective bit will be set.

The following settings can be made:

- Bit 1: Hardware limit switch positive. 0 = not hit, 1 = hit
- Bit 2: Hardware limit switch negative. 0 = not hit, 1 = hit
- Bit 3: Software limit switch positive monitored 0 = does not monitor, 1 = monitors
- Bit 4: Software limit switch negative monitored 0 = does not monitor, 1 = monitors
- Bit 5: Software limit switch positive. 0 = not hit, 1 = hit
- Bit 6: Software limit switch negative. 0 = not hit, 1 = hit

8314.2 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = HW limit switch positive DT1
- 1 = HW limit switch negative DT1

- 2 = HW limit switch positive DT2
- 3 = HW limit switch negative DT2

Control bit that informs the device about the states of the hardware limit switch.

8314.4 SW limit switch negative

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Software limit switch negative

8314.5 SW limit switch positive

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Software limit switch positive

1.1.11 8316 Control mode process values control cycle

Control mode process values control cycle

8316.7 Possible operating modes

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Torque control
- 1 = Speed control
- 2 = Positioning

Possible operating modes

8316.11 Parameter measurement status asynchronous motor

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Current thermally limited during stator measurement
- 1 = Current thermally limited during rotor measurement

- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = LSigDiffFitErr
- 6 = LSigAbsFitErr
- 7 = LSFitErr
- 8 = Plausibility error
- 9 = Motor rotation
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Asynchronous motor parameter measurement status

8316.13 Limitation status flags

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = User-defined current limit reached
- 1 = Thermal current limit reached
- 2 = Explosion protection current limit
- 3 = Current limit reached by control mode
- 8 = User defined torque limit reached

- 16 = Speed monitoring motor mode – active
- 17 = Speed monitoring generator mode – active
- 9 = Torque limited by speed limit

Limitation status flags

8316.25 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position in system units

8316.61 Stator frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Stator frequency

8316.117 Relative torque-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, torque-generating component, instantaneous value, phase value in star connection, with reference to nominal inverter current.

8316.118 Absolute torque-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current of the torque-generating component, absolute, instantaneous value, phase value in star connection.

8316.119 Relative field-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, field-generating component, instantaneous value, phase value in star connection, with reference to nominal inverter current.

8316.120 Absolute field-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current of field-generating component, absolute, instantaneous value, phase value in star connection.

8316.151 UqRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, q-component, absolute, instantaneous value of the phase in star connection

8316.152 UdRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, d-component, absolute, instantaneous value of the phase in star connection

8316.155 UaRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, a-component, absolute, instantaneous value of the phase in star connection

8316.156 UbRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, b-component, absolute, instantaneous value of the phase in star connection

8316.157 UaTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual voltage, a-component, absolute, instantaneous value of the phase in star connection

8316.158 UbTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual voltage, b-component, absolute, instantaneous value of the phase in star connection

8316.159 Absolute value of the setpoint voltage – rms value

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, value, absolute, rms value

8316.160 DC link voltage instantaneous value

Factory setting: 0

Unit: mV

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Instantaneous value of the DC link voltage.

8316.181 PsiSRefTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint stator flux, value, instantaneous value

8316.182 PsiRRefTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint rotor flux, value, instantaneous value

8316.183 PsiSModTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Stator flux U-model, value, instantaneous value

8316.184 PsiRModTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotor flux U-model, value, instantaneous value

8316.185 PsiSaUmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Stator flux U-model, a-component

8316.186 PsiSbUmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Stator flux U-model, b-component

8316.187 PsiRaUmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotor flux U-model, a-component

8316.188 PsiRbUmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotor flux U-model, b-component

8316.189 PsiRdlmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux I-model, d-component

8316.190 PsiRqImodTr

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux I-model, q-component

8316.211 Apparent motor power

Factory setting: 0
Unit: VA
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Apparent motor power

8316.212 Electrical effective motor power

Factory setting: 0
Unit: W
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Effective motor power (electrical)

8316.213 Reactive motor power

Factory setting: 0
Unit: VA
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Reactive motor power

8316.221 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Value range:

- -4000 = 4 kHz noise
- 2500 = 2.5 kHz constant
- 4000 = 4 kHz constant
- **8000 = 8 kHz constant**
- 16000 = 16 kHz constant

PWM frequency

8316.231 Position encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position encoder dead time

8316.232 Motor encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Motor encoder dead time

1.1.12 8318 Auto reset

These parameters define the rest strategy for automatically resetting faults.

8318.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Specifies whether faults are acknowledged automatically.

The following settings can be made:

- Off: A fault must be acknowledged by means of a terminal configured to "Fault reset", by switching off the device, by means of a parameter or control word.
- On: A fault is acknowledged automatically.

8318.2 Restart time

Factory setting: 3000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 1000 to 30000

Time period between occurrence of the fault and fault acknowledgement.

8318.3 Counter

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5

Counter

1.1.13 8321 Access rights

These parameters specify the access rights.

8321.1 Current permission level

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 10 = Observer
- **20 = Operator**
- 60 = OEM Service
- 70 = Firmware
- 80 = Nobody

Permission level active in the device. The permission level determines the write permission.

The following settings can be made:

- Observer: Most parameters are read only.
- Operator: Most parameters may also be written.
- OEM Service: All parameters than can be written may be written.

8321.2 Password

Factory setting: 707406378

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Password for activating the required permission level.

8321.3 Parameter lock

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = Default
- 2 = MOVI-C® CONTROLLER

Locks write access to the parameters (except for the parameter lock itself).

1.1.14 8322 Drive train selection

These parameter specify the selection and toggling between the two drive trains.

8322.1 Active drive train

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- **0 = Drive train 1**
- 1 = Drive train 2

Active drive train

8322.2 Select drive train

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **1 = Drive train 1**
- 2 = Drive train 2

Selection of the active drive train.

8322.3 Select drive train from process data

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Drive train 1
- 1 = Drive train 2

Selection of the active drive train from process data

8322.4 Number of drive trains

Factory setting: 2

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2

Number of drive trains in the device.

1.1.15 8323 "Speed reference" signal

"Speed reference" signal

8323.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Signal active

The signal appears when the speed is less or greater than the set reference speed.

8323.2 Reference value DT1

Factory setting: 7500000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed reference signal in drive train 1 from which a signal is to be issued.

8323.3 Hysteresis DT1

Factory setting: 1000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5000000

Hysteresis of the speed reference value in drive train 1. The signal is set or revoked when the reference value +/- hysteresis is reached. This depends on whether the speed approaches this value from above or below.

8323.4 Delay time DT1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for the speed reference signal in drive train 1. To have the signal issued, the condition for the signal must be fulfilled for at least the duration of the signal.

8323.5 Polarity DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Signal if value < reference value**
- **1 = Signal if value > reference value**

Specifies when the signal is issued in drive train 1.

8323.12 Reference value DT2

Factory setting: 7500000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed reference signal in drive train 2 from which a signal is to be issued.

8323.13 Hysteresis DT2

Factory setting: 1000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5000000

Hysteresis of the speed reference value in drive train 2. The signal is set or revoked when the reference value +/- hysteresis is reached. This depends on whether the speed approaches this value from above or below.

8323.14 Delay time DT2

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for the speed reference signal in drive train 2. To have the signal issued, the condition for the signal must be fulfilled for at least the duration of the signal.

8323.15 Polarity DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Signal if value < reference value**
- **1 = Signal if value > reference value**

Specifies when the signal is issued in drive train 2.

1.1.16 8324 "Comparison of actual and setpoint speed" signal

"Comparison of actual and setpoint speed" signal

8324.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- **0 = Signal active**

The signal appears when the actual speed is equal or unequal to the setpoint speed.

8324.3 Half window width DT1

Factory setting: 1000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 3000000

Hysteresis around the rotational speed setpoint in drive train 1.

8324.4 Delay time DT1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for comparison of setpoint and actual value in drive train 1. To have the signal issued, the condition for the signal must be fulfilled for at least the duration of the signal.

8324.5 Polarity DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Signal if actual value $\neq$ setpoint
- **1 = Signal if actual value = setpoint**

Specifies when the signal is issued in drive train 1.

8324.13 Half window width DT2

Factory setting: 1000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 3000000

Hysteresis around the rotational speed setpoint in drive train 2.

8324.14 Delay time DT2

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for comparison of setpoint and actual value in drive train 2. To have the signal issued, the condition for the signal must be fulfilled for at least the duration of the signal.

8324.15 Polarity DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Signal if actual value $\neq$ setpoint
- **1 = Signal if actual value = setpoint**

Specifies when the signal is issued in drive train 2.

1.1.17 8325 ""Current reference" signal"

"Current reference" signal

8325.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Signal active

This signal is displayed when the current is less or greater than the set current reference value.

8325.2 Reference value DT1

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 200000

Current reference value in drive train 1 with reference to nominal inverter current.

8325.3 Hysteresis DT1

Factory setting: 5000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 30000

Hysteresis of the current reference value in drive train 1. The signal is set or revoked when the reference value +/- hysteresis is reached. This depends on whether the speed approaches this value from above or below.

8325.4 Delay time DT1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time of the current reference signal in drive train 1.

8325.5 Polarity DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Signal if value < reference value**
- 1 = Signal if value > reference value

Specifies when the signal is issued in drive train 1.

8325.12 Reference value DT2

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 200000

Current reference value in drive train 2 with reference to nominal inverter current.

8325.13 Hysteresis DT2

Factory setting: 5000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 30000

Hysteresis of the current reference value in drive train 2. The signal is set or revoked when the reference value +/- hysteresis is reached. This depends on whether the speed approaches this value from above or below.

8325.14 Delay time DT2

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time of the current reference signal in drive train 2.

8325.15 Polarity DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Signal if value < reference value**
- 1 = Signal if value > reference value

Specifies when the signal is issued in drive train 2.

1.1.18 8326 "Speed window" signal

"Speed window" signal

8326.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Signal active

Signal if the speed is within a speed window.

8326.2 Window center DT1

Factory setting: 15000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Middle of the speed window to be set in drive train 1.

8326.3 Half window width DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Half the window width calculated from the middle of the window to the upper/lower limit of the window limit in drive train 1.

8326.4 Delay time DT1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for the current reference signal in drive train 1.

8326.5 Polarity DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Signal if value within window**
- 1 = Signal if value not within window

Specifies when the signal is issued in drive train 1.

8326.12 Window center DT2

Factory setting: 15000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Middle of the speed window to be set in drive train 2.

8326.13 Half window width DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Half the window width calculated from the middle of the window to the upper/lower limit of the window limit in drive train 2.

8326.14 Delay time DT2

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for the current reference signal in drive train 2.

8326.15 Polarity DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Signal if value within window**
- 1 = Signal if value not within window

Specifies when the signal is issued in drive train 2.

1.1.19 8327 Limit signals

Limit signals

8327.1 Setpoint/profile value limited

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Application limit – speed
- 1 = Application limit – acceleration
- 2 = Application limit – deceleration
- 3 = Application limit– jerk time
- 4 = Application limit – torque
- 5 = Drive train – maximum rotational speed
- 6 = Drive train – maximum torque
- 7 = Safety card– speed
- 8 = Safety card – acceleration
- 9 = Safety card – deceleration
- 10 = Safety card – jerk time

One setpoint or profile values of values processed by the active FCB is not within the permitted limits. The value is limited to the associated limit value, and this limitation is signaled by the matching bit.

1.1.20 8328 Operating hours counter

Operating hours counter

8328.1 Power-applied hours

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total hours in which the inverter was supplied by DC 24 V voltage, independent of the source (internal power supply or external supply). The storage cycle is 1 minute.

8328.2 Drive running hours

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total hours in which the inverter was enabled. The storage cycle is 1 minute.

8328.3 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Internal power-applied hours

8328.10 Reset operating hours counter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Resets power-applied hours and drive running hours.

1.1.21 8329 kWh counter

kWh counter

8329.1 Active power of active drive

Factory setting: 0

Unit: W

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Currently output active power with reference to the active drive train.

8329.2 Reset kWh counter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Resets the kWh counter.

8329.3 Active energy of active drive – motor mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total of the active energy the motor has consumed. This depends on the active drive train.

8329.4 Active energy of active drive – generator mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total of the active energy the motor has generated. This depends on the active drive train.

8329.5 Active energy drive train 1 – motor mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total of the electric active energy the motor has consumed in drive train 1.

8329.6 Active energy drive train 1 – generator mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total of the electric active energy the motor has delivered in drive train 1.

8329.7 Active energy drive train 2 – motor mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total of the electric active energy the motor has consumed in drive train 2.

8329.8 Active energy drive train 2 – generator mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Total of the electric active energy the motor has delivered in drive train 2.

1.1.22 8330 Application heartbeat

Application heartbeat

8330.10 User timeout activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Monitoring of the user timeout is activated via parameter access.

8330.11 User timeout trigger

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Triggers the user timeout function

8330.12 User-timeout timeout

Factory setting: 2000

Unit: ms

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 1 to 10000

Timeout time of the user timeout function

1.1.23 8331 "In position signal"

"In position" signal

8331.1 Window width DT1

Factory setting: 3

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

The "in position" signal is set in drive train 1 when the difference between actual position and setpoint position is smaller than half this value. The signal is only set when FCB 09 is active but is cleared irrespective of the device status.

8331.2 Hysteresis DT1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Hysteresis around the target position in drive train 1. When the position window is left, the "in position" signal is maintained until the hysteresis value is exceeded.

8331.3 Actual target position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual target position in user units

8331.7 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Monitoring active
- 1 = Signal active
- 2 = Position window with overflow
- 3 = Hysteresis range with overflow

Status bits

8331.11 Window width DT2

Factory setting: 3

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

The "in position" signal is set in drive train 2 when the difference between actual position and setpoint position is smaller than half this value. The signal is only set when FCB 09 is active but is cleared irrespective of the device status.

8331.12 Hysteresis DT2

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Hysteresis around the target position in drive train 2. When the position window is left, the "in position" signal is maintained until the hysteresis value is exceeded.

1.1.24 8332 Device status

Device status

8332.1 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Output stage enable
- 2 = Setpoints active
- 3 = Drive train 1 active
- 4 = Drive train 2 active
- 5 = Limits active
- 6 = Active drive referenced
- 7 = Safety card "RUN" active
- 8 = Manual mode active
- 9 = Configuration state
- 10 = Power ON
- 11 = Safety card controls inverter when safety card is activated
- 13 = Manual mode/local mode active

State of the various device status bits

8332.2 Output stage state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready – output stage inhibited**
- 1 = Ready – output stage inhibited
- 2 = Ready – output stage enabled

Status of the output stage of the device

8332.4 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = External device not ready

Control bits

8332.5 Activate startup state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Specifies that the drive can be parameterized via user interface.

The following settings can be made:

- Yes: The drive stops at the application limit and disables the output stage. The state can only be quit when the setting is "No".
- No: The preset parameters are adopted and the drive is enabled again.

8332.7 "Not ready" status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DC 24 V backup mode
- 1 = Internal supply faulty
- 2 = STO active
- 3 = Power section not ready
- 4 = Process data processing not ready
- 5 = External device not ready

- 6 = Data Flexibility not ready
- 7 = Encoder system(s) not ready
- 8 = Motor management not ready
- 9 = Task system not synchronized
- 10 = Standby mode active
- 11 = Startup state
- 12 = Basic initialization active
- 13 = Delivery state active
- 14 = Parameter download active
- 15 = Module bus not ready
- 16 = Initializing parameters
- 17 = Digital Motor Integration

This bit field explains the reason why the drive is "not ready".

8332.8 HMI status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bootloader active
- 1 = Ready
- 2 = Application program loaded
- 3 = Application program started
- 4 = Application error
- 5 = Warning
- 6 = Configuration state
- 16 = Subfault bit 0
- 17 = Subfault bit 1
- 18 = Subfault bit 2
- 19 = Subfault bit 3
- 20 = Subfault bit 4
- 21 = Subfault bit 5
- 22 = Subfault bit 6
- 23 = Subfault bit 7
- 24 = Main fault bit 0
- 25 = Main fault bit 1
- 26 = Main fault bit 2
- 27 = Main fault bit 3
- 28 = Main fault bit 4
- 29 = Main fault bit 5
- 30 = Main fault bit 6
- 31 = Main fault bit 7

0 = Bootloader active (HMI status)

8332.9 HMI display state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Error
- 2 = Standby
- 1000 = B0
- 1001 = B1
- 1002 = B2
- 1003 = B3
- 1004 = B4
- 1005 = B5
- 1006 = B6
- 1007 = B7
- 1008 = B8
- 1009 = B9
- 1010 = BR
- 1020 = C0
- 1021 = C1
- 1022 = C2
- 1023 = C3
- 1024 = C4
- 1025 = C5
- 1026 = C6
- 1027 = C7
- 1028 = C8
- 1029 = C9
- 1030 = CD
- 1040 = d0
- 1041 = d1
- 1042 = d2
- **1100 = 00**
- 1101 = AC
- 1200 = FCB 00
- 1201 = FCB 01
- 1202 = FCB 02
- 1203 = FCB 03
- 1204 = FCB 04
- 1205 = FCB 05

- 1206 = FCB 06
- 1207 = FCB 07
- 1208 = FCB 08
- 1209 = FCB 09
- 1210 = FCB 10
- 1211 = FCB 11
- 1212 = FCB 12
- 1213 = FCB 13
- 1214 = FCB 14
- 1215 = FCB 15
- 1216 = FCB 16
- 1217 = FCB 17
- 1218 = FCB 18
- 1219 = FCB 19
- 1220 = FCB 20
- 1221 = FCB 21
- 1222 = FCB 22
- 1223 = FCB 23
- 1224 = FCB 24
- 1225 = FCB 25
- 1226 = FCB 26
- 1227 = FCB 27
- 1228 = FCB 28
- 1229 = FCB 29
- 1230 = FCB 30
- 1231 = FCB 31
- 1232 = FCB 32

Indicates the state of the device in compact prioritized form.

For inverters, this largely corresponds to what is displayed on the display.

1.1.25 8334 Digital inputs basic unit

These parameters specify the assignment of the digital inputs of the basic unit.

8334.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03

- 4 = DI 04

- 5 = DI 05

Actual value of the digital inputs:

Bit 0 – bit x: DI 00 – DI 0x

8334.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00

- 1 = DI 01

- 2 = DI 02

- 3 = DI 03

- 4 = DI 04

- 5 = DI 05

Indicates whether the programmed function of the digital input is "0-active".

Bit x = 1: Digital input DI 0x is "0-active".

8334.3 Function state

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00

- 1 = DI 01

- 2 = DI 02

- 3 = DI 03

- 4 = DI 04

- 5 = DI 05

Logic state of the function programmed using the digital input:

Bit 1 – bit x: DI 01 – DI 0x

8334.4 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Touchprobe input

Is used to connect special functions for digital inputs.

8334.6 Available inputs

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03
- 4 = DI 04
- 5 = DI 05

Indicates the digital inputs that are actually present on the hardware.

This parameter is used to mask parameters that are not effective in the current hardware configuration.

8334.11 Function DI 01

Factory setting: 8354.23 Bit 0 "Select direction of rotation"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8332.4 Bit 0 "External device not ready"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"

- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 01 of the basic unit

8334.12 Function DI 02

Factory setting: 8354.23 Bit 1 "Select direction of rotation"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8332.4 Bit 0 "External device not ready"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"

- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 02 of the basic unit

8334.13 Function DI 03

Factory setting: 8354.21 Bit 0 "Select fixed speed setpoint"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8332.4 Bit 0 "External device not ready"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"

- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 03 of the basic unit

8334.14 Function DI 04

Factory setting: 8354.21 Bit 1 "Select fixed speed setpoint"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8332.4 Bit 0 "External device not ready"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8378.2 Bit 0 "Low-resolution encoder level – track A"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"

- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8576.1 Bit 0 "Primary frequency input"
- 8579.1 Bit 0 "Counter input"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 04 of the basic unit

8334.15 Function DI 05

Factory setting: 8365.6 Bit 0 "Control bits"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8332.4 Bit 0 "External device not ready"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"

- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8378.2 Bit 1 "Low-resolution encoder level – track B"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 05 of the basic unit

1.1.26 8335 Digital outputs basic unit

These parameters specify the assignment of the digital outputs of the basic unit.

8335.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

Actual value of the digital outputs:

- Bit 0: DB 00
- Bits 1 to 4: DO 00 – DO 03

8335.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

Indicates whether the programmed function of the digital output is "0-active".

Bit x = 1: Digital output DO 0x is "0-active".

8335.3 Function state

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

Logic state of the function programmed using the digital output:

- Bit 0: DB 00
- Bits 1 to 4: DO 00 – DO 03

8335.6 Available outputs

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

Indicates the digital outputs that are actually present on the hardware.

This parameter is used to mask parameters that are not effective in the current hardware configuration.

8335.10 Function DO 00

Factory setting: 8332.1 Bit 0 "Status bits"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"

- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"

- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 00 of the basic unit

8335.11 Function DO 01

Factory setting: 8332.1 Bit 1 "Status bits"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"

- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"

- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"

- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 01 of the basic unit

8335.12 Function DO 02

Factory setting: 8365.7 Bit 1 "Status bits"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"

- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"

- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 02 of the basic unit

8335.13 Function DO 03

Factory setting: 8332.7 Bit 2 "Not ready" status bits"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"

- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"

- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"

- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 03 of the basic unit

1.1.27 8336 Output stage monitoring

Parameters of output stage monitoring

8336.1 Prewarning threshold – heat sink utilization

Factory setting: 95000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Here you can set a utilization value at which the device shall trigger a prewarning.

8336.2 Prewarning threshold – electromechanical utilization

Factory setting: 95000

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Here you can set a utilization value at which the device shall trigger a prewarning.

1.1.28 8339 "Comparison of actual and setpoint torque" signal

"Setpoint/actual torque comparison" signal

8339.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Signal active

The signal appears when the actual speed is equal or unequal to the setpoint speed.

8339.3 Half window width DT1

Factory setting: 100

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10 to 500

Hysteresis around the torque setpoint of FCB07 in drive train 1.

8339.4 Delay time DT1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for comparison of setpoint and actual value in drive train 1. To have the signal issued, the condition for the signal must be fulfilled for at least the duration of the signal.

8339.5 Polarity DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Signal if actual value $\neq$ setpoint
- **1 = Signal if actual value = setpoint**

Specifies when the signal is issued in drive train 1.

8339.13 Half window width DT2

Factory setting: 100

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10 to 500

Hysteresis around the torque setpoint of FCB07 in drive train 2.

8339.14 Delay time DT2

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 9000

Delay time for comparison of setpoint and actual value in drive train 2. To have the signal issued, the condition for the signal must be fulfilled for at least the duration of the signal.

8339.15 Polarity DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Signal if actual value $\neq$ setpoint
- **1 = Signal if actual value = setpoint**

Specifies when the signal is issued in drive train 2.

1.1.29 8340 Fault memory

Fault memory

8340.1 Clear fault history

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Clears the fault memory and resets it automatically to "No".

8340.10 User parameter 1 – assignment

Factory setting: 8373.1 Actual value

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function
- 8370.1 Status word 1
- 8373.1 Control word 1

Users can specify the device parameters they want to log additionally in the event of a fault. This parameter will then appear in the fault memory.

8340.11 User parameter 2 – assignment

Factory setting: 8370.1 Actual value

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function
- 8370.1 Status word 1
- 8373.1 Control word 1

Users can specify the device parameters they want to log additionally in the event of a fault. This parameter will then appear in the fault memory.

8340.20 Timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Timestamp for fault logging

1.1.30 8341 Fault memory T0

Fault memory T0 = most recent fault

8341.1 Fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the fault that has occurred. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

8341.2 Internal fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8341.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the subcomponent fault that has occurred

8341.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

If no system time is set, this parameter corresponds to the time in seconds that elapsed between the last time the device was started and the time when the fault occurred.

If the master sets a system time during booting, this parameter corresponds to the time in seconds based on Jan 1, 2000 (EtherCAT®/SBusPLUS time).

8341.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of power-applied hours at the time when the fault occurred

8341.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of drive-running hours at the time when the fault occurred

8341.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Output stage enable
- 2 = Setpoints active
- 3 = Drive train 1 active
- 4 = Drive train 2 active
- 5 = Limits active
- 6 = Active drive referenced
- 7 = Safety card "RUN" active
- 8 = Manual mode active
- 9 = Configuration state
- 10 = Power ON
- 11 = Safety card controls inverter when safety card is activated

Bit-coded device status at the time when the fault occurred

8341.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready – output stage inhibited**
- 1 = Ready – output stage inhibited
- 2 = Ready – output stage enabled

Axis status at the time when the fault occurred

8341.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 3 = FCB 03 Profile velocity mode (pv)
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control

- 11 = FCB 11 Homing mode (hm)
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 15 = FCB 15 Cyclic synchronous velocity mode (csv)
- 16 = FCB 16 Cyclic synchronous position mode (csp)
- 17 = FCB 17 Cyclic synchronous torque mode (cst)
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 24 = FCB 24 Profile position mode (pp)
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

FCB that is active at the time when the fault occurred

8341.10 Digital inputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03
- 4 = DI 04
- 5 = DI 05

State of the digital inputs of the basic unit at the time when the fault occurred

8341.11 Digital output basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

State of the digital outputs of the basic unit at the time when the fault occurred

8341.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position of the axis in system units at the time when the fault occurred

8341.13 Actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotational speed of the axis in system units at the time when the fault occurred

8341.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Output frequency of the inverter at the time when the fault occurred

8341.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque of the motor at the time when the fault occurred

8341.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Output voltage of the inverter at the time when the fault occurred

8341.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

DC link voltage of the inverter at the time when the fault occurred

8341.18 Relative apparent current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Apparent output current of the inverter at the time when the fault occurred

8341.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque-generating current of the inverter at the time when the fault occurred

8341.20 Drive train

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2

Drive train that is active at the time when the fault occurred

8341.21 Internal fault code subcomponent

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8341.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Thermal motor utilization at the time when the fault occurred

The following settings can be made:

– 0%: Measured temperature below 40 °C.

– 100 %: Switch-off temperature reached.

8341.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Temperature of the motor at the time when the fault occurred

8341.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Device utilization at the time when the fault occurred

8341.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Heat sink utilization at the time when the fault occurred

8341.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Heat sink temperature at the time when the fault occurred

8341.37 Dynamic utilization – chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Dynamic chip temperature rise at the time when the fault occurred

8341.38 Dynamic utilization – chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Relative dynamic chip temperature rise at the time when the fault occurred

8341.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Electromechanical utilization at the time when the fault occurred

8341.50 Digital inputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10

- 1 = DI 11
- 2 = DI 12
- 3 = DI 13
- 4 = DI 14
- 5 = DI 15
- 6 = DI 16

State of the digital inputs of the I/O card at the time when the fault occurred

8341.51 Digital outputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

State of the digital outputs of the I/O card at the time when the fault occurred

8341.52 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of internal power-applied hours at the time when the fault occurred. These power-applied hours cannot be reset.

8341.100 User parameter 1 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 1 selected for logging at the time when the fault occurred

8341.101 User parameter 1 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 1 selected for logging at the time when the fault occurred

8341.102 User parameter 2 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 2 selected for logging at the time when the fault occurred

8341.103 User parameter 2 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 2 selected for logging at the time when the fault occurred

1.1.31 8342 Fault memory T1

Fault memory T1

8342.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the fault that has occurred. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

8342.2 Internal fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8342.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the subcomponent fault that has occurred

8342.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

If no system time is set, this parameter corresponds to the time in seconds that elapsed between the last time the device was started and the time when the fault occurred.

If the master sets a system time during booting, this parameter corresponds to the time in seconds based on Jan 1, 2000 (EtherCAT®/SBusPLUS time).

8342.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of power-applied hours at the time when the fault occurred

8342.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of drive-running hours at the time when the fault occurred

8342.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Output stage enable
- 2 = Setpoints active
- 3 = Drive train 1 active
- 4 = Drive train 2 active
- 5 = Limits active
- 6 = Active drive referenced
- 7 = Safety card "RUN" active
- 8 = Manual mode active
- 9 = Configuration state
- 10 = Power ON
- 11 = Safety card controls inverter when safety card is activated

Bit-coded device status at the time when the fault occurred

8342.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready – output stage inhibited**
- 1 = Ready – output stage inhibited
- 2 = Ready – output stage enabled

Axis status at the time when the fault occurred

8342.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 3 = FCB 03 Profile velocity mode (pv)
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control

- 11 = FCB 11 Homing mode (hm)
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 16 = FCB 16 Cyclic synchronous position mode (csp)
- 17 = FCB 17 Cyclic synchronous torque mode (cst)
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 24 = FCB 24 Profile position mode (pp)
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

FCB that is active at the time when the fault occurred

8342.10 Digital inputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03
- 4 = DI 04
- 5 = DI 05

State of the digital inputs of the basic unit at the time when the fault occurred

8342.11 Digital output basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

State of the digital outputs of the basic unit at the time when the fault occurred

8342.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position of the axis in system units at the time when the fault occurred

8342.13 Actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotational speed of the axis in system units at the time when the fault occurred

8342.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Output frequency of the inverter at the time when the fault occurred

8342.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque of the motor at the time when the fault occurred

8342.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Output voltage of the inverter at the time when the fault occurred

8342.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

DC link voltage of the inverter at the time when the fault occurred

8342.18 Relative apparent current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Apparent output current of the inverter at the time when the fault occurred

8342.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque-generating current of the inverter at the time when the fault occurred

8342.20 Drive train

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2

Drive train that is active at the time when the fault occurred

8342.21 Internal fault code subcomponent

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8342.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Thermal motor utilization at the time when the fault occurred

The following settings can be made:

- 0%: Measured temperature below 40 °C.
- 100 %: Switch-off temperature reached.

8342.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Temperature of the motor at the time when the fault occurred

8342.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Device utilization at the time when the fault occurred

8342.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Heat sink utilization at the time when the fault occurred

8342.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Heat sink temperature at the time when the fault occurred

8342.37 Dynamic utilization – chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Dynamic chip temperature rise at the time when the fault occurred

8342.38 Dynamic utilization – chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Relative dynamic chip temperature rise at the time when the fault occurred

8342.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Electromechanical utilization at the time when the fault occurred

8342.50 Digital inputs I/O card – phy. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10

- 1 = DI 11
- 2 = DI 12
- 3 = DI 13
- 4 = DI 14
- 5 = DI 15
- 6 = DI 16

State of the digital inputs of the I/O card at the time when the fault occurred

8342.51 Digital outputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

State of the digital outputs of the I/O card at the time when the fault occurred

8342.52 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of internal power-applied hours at the time when the fault occurred. These power-applied hours cannot be reset.

8342.100 User parameter 1 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 1 selected for logging at the time when the fault occurred

8342.101 User parameter 1 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 1 selected for logging at the time when the fault occurred

8342.102 User parameter 2 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 2 selected for logging at the time when the fault occurred

8342.103 User parameter 2 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 2 selected for logging at the time when the fault occurred

1.1.32 8343 Fault memory T2

Fault memory T2

8343.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the fault that has occurred. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

8343.2 Internal fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8343.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the subcomponent fault that has occurred

8343.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

If no system time is set, this parameter corresponds to the time in seconds that elapsed between the last time the device was started and the time when the fault occurred.

If the master sets a system time during booting, this parameter corresponds to the time in seconds based on Jan 1, 2000 (EtherCAT®/SBusPLUS time).

8343.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of power-applied hours at the time when the fault occurred

8343.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of drive-running hours at the time when the fault occurred

8343.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Output stage enable
- 2 = Setpoints active
- 3 = Drive train 1 active
- 4 = Drive train 2 active
- 5 = Limits active
- 6 = Active drive referenced
- 7 = Safety card "RUN" active
- 8 = Manual mode active
- 9 = Configuration state
- 10 = Power ON
- 11 = Safety card controls inverter when safety card is activated

Bit-coded device status at the time when the fault occurred

8343.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready – output stage inhibited**
- 1 = Ready – output stage inhibited
- 2 = Ready – output stage enabled

Axis status at the time when the fault occurred

8343.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 3 = FCB 03 Profile velocity mode (pv)
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control

- 11 = FCB 11 Homing mode (hm)
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 15 = FCB 15 Cyclic synchronous velocity mode (csv)
- 16 = FCB 16 Cyclic synchronous position mode (csp)
- 17 = FCB 17 Cyclic synchronous torque mode (cst)
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 24 = FCB 24 Profile position mode (pp)
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

FCB that is active at the time when the fault occurred

8343.10 Digital inputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03
- 4 = DI 04
- 5 = DI 05

State of the digital inputs of the basic unit at the time when the fault occurred

8343.11 Digital output basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

State of the digital outputs of the basic unit at the time when the fault occurred

8343.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position of the axis in system units at the time when the fault occurred

8343.13 Actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotational speed of the axis in system units at the time when the fault occurred

8343.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Output frequency of the inverter at the time when the fault occurred

8343.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque of the motor at the time when the fault occurred

8343.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Output voltage of the inverter at the time when the fault occurred

8343.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

DC link voltage of the inverter at the time when the fault occurred

8343.18 Relative apparent current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Apparent output current of the inverter at the time when the fault occurred

8343.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque-generating current of the inverter at the time when the fault occurred

8343.20 Drive train

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2

Drive train that is active at the time when the fault occurred

8343.21 Internal fault code subcomponent

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8343.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Thermal motor utilization at the time when the fault occurred

The following settings can be made:

- 0%: Measured temperature below 40 °C.
- 100 %: Switch-off temperature reached.

8343.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Temperature of the motor at the time when the fault occurred

8343.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Device utilization at the time when the fault occurred

8343.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Heat sink utilization at the time when the fault occurred

8343.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Heat sink temperature at the time when the fault occurred

8343.37 Dynamic utilization – chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Dynamic chip temperature rise at the time when the fault occurred

8343.38 Dynamic utilization – chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Relative dynamic chip temperature rise at the time when the fault occurred

8343.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Electromechanical utilization at the time when the fault occurred

8343.50 Digital inputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10

- 1 = DI 11
- 2 = DI 12
- 3 = DI 13
- 4 = DI 14
- 5 = DI 15
- 6 = DI 16

State of the digital inputs of the I/O card at the time when the fault occurred

8343.51 Digital outputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

State of the digital outputs of the I/O card at the time when the fault occurred

8343.52 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of internal power-applied hours at the time when the fault occurred. These power-applied hours cannot be reset.

8343.100 User parameter 1 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 1 selected for logging at the time when the fault occurred

8343.101 User parameter 1 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 1 selected for logging at the time when the fault occurred

8343.102 User parameter 2 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 2 selected for logging at the time when the fault occurred

8343.103 User parameter 2 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 2 selected for logging at the time when the fault occurred

1.1.33 8344 Fault memory T3

Fault memory T3

8344.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the fault that has occurred. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

8344.2 Internal fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8344.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the subcomponent fault that has occurred

8344.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

If no system time is set, this parameter corresponds to the time in seconds that elapsed between the last time the device was started and the time when the fault occurred.

If the master sets a system time during booting, this parameter corresponds to the time in seconds based on Jan 1, 2000 (EtherCAT®/SBusPLUS time).

8344.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of power-applied hours at the time when the fault occurred

8344.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of drive-running hours at the time when the fault occurred

8344.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Output stage enable
- 2 = Setpoints active
- 3 = Drive train 1 active
- 4 = Drive train 2 active
- 5 = Limits active
- 6 = Active drive referenced
- 7 = Safety card "RUN" active
- 8 = Manual mode active
- 9 = Configuration state
- 10 = Power ON
- 11 = Safety card controls inverter when safety card is activated

Bit-coded device status at the time when the fault occurred

8344.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready – output stage inhibited**
- 1 = Ready – output stage inhibited
- 2 = Ready – output stage enabled

Axis status at the time when the fault occurred

8344.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 3 = FCB 03 Profile velocity mode (pv)
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control

- 11 = FCB 11 Homing mode (hm)
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 15 = FCB 15 Cyclic synchronous velocity mode (csv)
- 16 = FCB 16 Cyclic synchronous position mode (csp)
- 17 = FCB 17 Cyclic synchronous torque mode (cst)
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 24 = FCB 24 Profile position mode (pp)
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

FCB that is active at the time when the fault occurred

8344.10 Digital inputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03
- 4 = DI 04
- 5 = DI 05

State of the digital inputs of the basic unit at the time when the fault occurred

8344.11 Digital outputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

State of the digital outputs of the basic unit at the time when the fault occurred

8344.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position of the axis in system units at the time when the fault occurred

8344.13 Actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotational speed of the axis in system units at the time when the fault occurred

8344.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Output frequency of the inverter at the time when the fault occurred

8344.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque of the motor at the time when the fault occurred

8344.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Output voltage of the inverter at the time when the fault occurred

8344.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

DC link voltage of the inverter at the time when the fault occurred

8344.18 Relative apparent current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Apparent output current of the inverter at the time when the fault occurred

8344.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque-generating current of the inverter at the time when the fault occurred

8344.20 Drive train

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2

Drive train that is active at the time when the fault occurred

8344.21 Internal fault code subcomponent

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8344.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Thermal motor utilization at the time when the fault occurred

The following settings can be made:

- 0%: Measured temperature below 40 °C.
- 100 %: Switch-off temperature reached.

8344.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Temperature of the motor at the time when the fault occurred

8344.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Device utilization at the time when the fault occurred

8344.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Heat sink utilization at the time when the fault occurred

8344.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Heat sink temperature at the time when the fault occurred

8344.37 Dynamic utilization – chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Dynamic chip temperature rise at the time when the fault occurred

8344.38 Dynamic utilization – chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Relative dynamic chip temperature rise at the time when the fault occurred

8344.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Electromechanical utilization at the time when the fault occurred

8344.50 Digital inputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10

- 1 = DI 11
- 2 = DI 12
- 3 = DI 13
- 4 = DI 14
- 5 = DI 15
- 6 = DI 16

State of the digital inputs of the I/O card at the time when the fault occurred

8344.51 Digital outputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

State of the digital outputs of the I/O card at the time when the fault occurred

8344.52 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of internal power-applied hours at the time when the fault occurred. These power-applied hours cannot be reset.

8344.100 User parameter 1 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 1 selected for logging at the time when the fault occurred

8344.101 User parameter 1 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 1 selected for logging at the time when the fault occurred

8344.102 User parameter 2 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 2 selected for logging at the time when the fault occurred

8344.103 User parameter 2 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 2 selected for logging at the time when the fault occurred

1.1.34 8345 Fault memory T4

Fault memory T4

8345.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the fault that has occurred. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

8345.2 Internal fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8345.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of the subcomponent fault that has occurred

8345.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

If no system time is set, this parameter corresponds to the time in seconds that elapsed between the last time the device was started and the time when the fault occurred.

If the master sets a system time during booting, this parameter corresponds to the time in seconds based on Jan 1, 2000 (EtherCAT®/SBusPLUS time).

8345.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of power-applied hours at the time when the fault occurred

8345.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of drive-running hours at the time when the fault occurred

8345.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Output stage enable
- 2 = Setpoints active
- 3 = Drive train 1 active
- 4 = Drive train 2 active
- 5 = Limits active
- 6 = Active drive referenced
- 7 = Safety card "RUN" active
- 8 = Manual mode active
- 9 = Configuration state
- 10 = Power ON
- 11 = Safety card controls inverter when safety card is activated

Bit-coded device status at the time when the fault occurred

8345.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready – output stage inhibited**
- 1 = Ready – output stage inhibited
- 2 = Ready – output stage enabled

Axis status at the time when the fault occurred

8345.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 3 = FCB 03 Profile velocity mode (pv)
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control

- 11 = FCB 11 Homing mode (hm)
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 15 = FCB 15 Cyclic synchronous velocity mode (csv)
- 16 = FCB 16 Cyclic synchronous position mode (csp)
- 17 = FCB 17 Cyclic synchronous torque mode (cst)
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 24 = FCB 24 Profile position mode (pp)
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

FCB that is active at the time when the fault occurred

8345.10 Digital inputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 00
- 1 = DI 01
- 2 = DI 02
- 3 = DI 03
- 4 = DI 04
- 5 = DI 05

State of the digital inputs of the basic unit at the time when the fault occurred

8345.11 Digital outputs basic unit – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DB 00
- 1 = DO 00
- 2 = DO 01
- 3 = DO 02
- 4 = DO 03

State of the digital outputs of the basic unit at the time when the fault occurred

8345.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position of the axis in system units at the time when the fault occurred

8345.13 Actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotational speed of the axis in system units at the time when the fault occurred

8345.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Output frequency of the inverter at the time when the fault occurred

8345.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque of the motor at the time when the fault occurred

8345.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Output voltage of the inverter at the time when the fault occurred

8345.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

DC link voltage of the inverter at the time when the fault occurred

8345.18 Relative apparent current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Apparent output current of the inverter at the time when the fault occurred

8345.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque-generating current of the inverter at the time when the fault occurred

8345.20 Drive train

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2

Drive train that is active at the time when the fault occurred

8345.21 Internal fault code subcomponent

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE Service.

8345.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Thermal motor utilization at the time when the fault occurred

The following settings can be made:

– 0%: Measured temperature below 40 °C.

– 100 %: Switch-off temperature reached.

8345.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Temperature of the motor at the time when the fault occurred

8345.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Device utilization at the time when the fault occurred

8345.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Heat sink utilization at the time when the fault occurred

8345.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Heat sink temperature at the time when the fault occurred

8345.37 Dynamic utilization – chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Dynamic chip temperature rise at the time when the fault occurred

8345.38 Dynamic utilization – chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Relative dynamic chip temperature rise at the time when the fault occurred

8345.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Electromechanical utilization at the time when the fault occurred

8345.50 Digital inputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10

- 1 = DI 11
- 2 = DI 12
- 3 = DI 13
- 4 = DI 14
- 5 = DI 15
- 6 = DI 16

State of the digital inputs of the I/O card at the time when the fault occurred

8345.51 Digital outputs I/O card – phys. level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

State of the digital outputs of the I/O card at the time when the fault occurred

8345.52 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Number of internal power-applied hours at the time when the fault occurred. These power-applied hours cannot be reset.

8345.100 User parameter 1 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 1 selected for logging at the time when the fault occurred

8345.101 User parameter 1 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 1 selected for logging at the time when the fault occurred

8345.102 User parameter 2 – assignment

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range: 0.0 No function

Index number of user parameter 2 selected for logging at the time when the fault occurred

8345.103 User parameter 2 – value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Value of user parameter 2 selected for logging at the time when the fault occurred

1.1.35 8346 Data Flexibility code

8346.1 Code

Factory setting: 0

Unit:

Data type: UInt32 (fill level array)

Data length: 2048

Resolution: 1

Value range: 0 to 4294967295

Code

1.1.36 8347 Data Flexibility data

8347.1 Globals

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 256

Resolution: 1

Value range: 0 to 4294967295

Globals

8347.2 Locals Task Init

Factory setting: 0

Unit:
Data type: Uint32 (DataArray)
Data length: 128
Resolution: 1
Value range: 0 to 4294967295
Locals Task Init

8347.3 Locals Task PD In

Factory setting: 0
Unit:
Data type: Uint32 (DataArray)
Data length: 128
Resolution: 1
Value range: 0 to 4294967295
Locals Task PD In

8347.4 Locals Task PD Out

Factory setting: 0
Unit:
Data type: Uint32 (DataArray)
Data length: 128
Resolution: 1
Value range: 0 to 4294967295
Locals Task PD Out

8347.5 Locals Task Free

Factory setting: 0
Unit:
Data type: Uint32 (DataArray)
Data length: 128
Resolution: 1
Value range: 0 to 4294967295
Locals Task Free

8347.6 Configuration data

Factory setting: 0
Unit:
Data type: Uint32 (DataArray)
Data length: 128
Resolution: 1
Value range: 0 to 4294967295
Configuration data

8347.7 DirectRead pointer

Factory setting: 0.0 No function

Data type: Parameter pointer (DataArray)

Data length: 16

Value range: 0.0 No function

Data pointer connections for reading data for the Data Flexibility tasks.

8347.8 DirectWrite pointer

Factory setting: 0.0 No function

Data type: Parameter pointer (DataArray)

Data length: 16

Value range: 0.0 No function

Data pointer connections for writing (without saving to non-volatile memory) data from the Data Flexibility tasks.

8347.9 - 8347.40 Array size 32 Output data

Factory setting:

Data type: Bit field (array)

Data length: 32

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21

- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Output data for further processing in the process data flow to the higher-level controller.

1.1.37 8348 Data Flexibility setting values

8348.1 Ctrl

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Idle
- 1 = Run
- **2 = Stop**
- 4 = Reset
- 6 = Init reset

Ctrl

8348.2 Task Init Ctrl

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 5 = Single
- 6 = Reset
- 7 = Step over

Task Init Ctrl

8348.3 Task PD In Ctrl

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 5 = Single
- 6 = Reset
- 7 = Step over

Task PD In Ctrl

8348.4 Task PD Out Ctrl

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 5 = Single
- 6 = Reset
- 7 = Step over

Task PD Out Ctrl

8348.5 Task Free Ctrl

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 5 = Single
- 6 = Reset
- 7 = Step over

Task Free Ctrl

8348.6 Debug mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Debug mode

8348.7 Auto start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Auto start

8348.8 Break Point Ctrl

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Break Point Ctrl

1.1.38 8349 Data Flexibility status

8349.1 Status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Idle**
- 1 = Run
- 2 = Stop
- 3 = Error
- 4 = Reset
- 5 = Reset done
- 6 = Init reset
- 7 = Init reset done

State

8349.2 Task Init State

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 2 = Prog Stop
- 3 = Error
- 4 = Break

- 5 = Single
- 6 = Reset
- 7 = Step over

Task Init State

8349.3 Task PD In State

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 2 = Prog Stop
- 3 = Error
- 4 = Break
- 5 = Single
- 6 = Reset
- 7 = Step over

Task PD In State

8349.4 Task PD Out State

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run
- 2 = Prog Stop
- 3 = Error
- 4 = Break
- 5 = Single
- 6 = Reset
- 7 = Step over

Task PD Out State

8349.5 Task Free State

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stop**
- 1 = Run

- 2 = Prog Stop
- 3 = Error
- 4 = Break
- 5 = Single
- 6 = Reset
- 7 = Step over

Task Free State

8349.6 Task Init IP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Task Init IP

8349.7 Task PD In IP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Task PD In IP

8349.8 Task PD Out IP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Task PD Out IP

8349.9 Task Free IP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Task Free IP

8349.10 Task Init Locals SP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: -1073741824 to 1073741823
Task Init Locals-SP

8349.11 Task PD In Locals SP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: -1073741824 to 1073741823
Task PD In Locals-SP

8349.12 Task PD Out Locals SP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: -1073741824 to 1073741823
Task PD Out Locals-SP

8349.13 Task Free Locals SP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: -1073741824 to 1073741823
Task Free Locals-SP

8349.14 Runtime PD In

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1

Value range: -2147483648 to 2147483647

Resolution of the "PD in-task" in a resolution of 0.1%

8349.15 Runtime PD Out

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Utilization of the "PD out-task" in a resolution of 0.1%

8349.16 Init Done

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Init Done

8349.17 Version

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version

8349.18 Input

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Data Flexibility input

Input

1.1.39 8351 Fast power-off detection

Fast power-off detection

8351.1 Power off response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- **4 = Output stage inhibit**

Response of the drive when the level is undershot that has been set in the parameter "DC link level for fast power-off detection" (index 8351.5).

8351.4 Activate

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

By activating the "Fast power-off detection" function, an axis module, a network of MOVIDRIVE® system units or an individual unit can be stopped in a controlled manner by supplying the DC link with regenerative energy in the event of disconnection from the grid. For this purpose, the DC link voltage is compared with a parameterized DC link limit value. If the level is undershot, the programmed power-off response will be triggered.

8351.5 DC link level for fast power-off detection

Factory setting: 450000

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 2048000

Limit under which the DC link voltage is interpreted as power off. The power-off response is performed when the value drops below this value.

1.1.40 8352 Touchprobe 1

The touchprobe function allows for maintaining any process data for an external switching event. For example, a light barrier signal can maintain the actual position of an external encoder, and the inverter can transfer this value to a higher-level controller.

The following activation types of the touchprobe channel can be selected:

- "Single trigger": Only triggered once. Another trigger can only be performed if the touchprobe channel is deactivated and then activated again, or if the user changes to "Auto restart" mode.
- "Auto restart": After triggering, the trigger is re-activated automatically.
- The touchprobe function is disabled if neither "single trigger" nor "auto restart" is activated.

- "Auto restart" is performed if "single trigger" and "auto restart" are active at the same time.

8352.1 Mode

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Single trigger
- 1 = Auto restart

Activates the function bit by bit.

The following settings can be made:

- Bit 1 = 0 and bit 0 = 0: The touchprobe function is disabled.
- Bit 1 = 0 and bit 0 = 1: Triggered once.
- Bit 1 = 1 and bit 0 = 0: Trigger with each event.
- Bit 1 = 1 and bit 0 = 1: Trigger with each event.

8352.2 Status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Wait for trigger
- 1 = Trigger activated

Current status.

The following settings can be made:

- Bit 0: Wait for trigger.
- Bit 1: Trigger activated

8352.3 Detected value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Data source value detected at the time of the trigger.

8352.10 Trigger – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = C track encoder 1
- 1 = C track encoder 2
- **3 = DI 01**
- 4 = DI 02
- 5 = DI 03
- 6 = DI 04
- 7 = DI 05

Trigger source

8352.11 Trigger – level

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Rising edge**
- 1 = Falling edge
- 2 = Rising and falling edge

Specifies the type of edge used for triggering.

8352.12 Trigger– sensor dead time rising edge

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Dead time of the sensor used for the rising edge at the trigger input. This time is used for the calculation of the touchprobe event value.

8352.13 Trigger– sensor dead time falling edge

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Dead time of the sensor used for the falling edge at the trigger input. This time is used for the calculation of the touchprobe event value.

8352.14 Trigger – counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

This value is incremented by the value 1 with each trigger event.

8352.30 Data source

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function
- 8364.25 Actual position in system units
- 8364.26 Actual position in user units
- 8364.27 Actual position in user unit – modulo
- 8367.10 PO data word
- 8367.11 PO data word
- 8367.12 PO data word
- 8367.13 PO data word
- 8367.14 PO data word
- 8367.15 PO data word
- 8367.16 PO data word
- 8367.17 PO data word
- 8367.18 PO data word
- 8367.19 PO data word
- 8367.20 PO data word
- 8367.21 PO data word
- 8367.22 PO data word
- 8367.23 PO data word
- 8367.24 PO data word
- 8367.25 PO data word
- 8436.2 System time low part

Measured quantity for the touchprobe function.

8352.31 PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the file format when accessing process output data words. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format.

This parameter has no effect for data sources with a word width of 32 bits.

8352.32 Process data – modulo minimum

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. These limits are necessary for processing process data with a limited range of values.

Example: A process data channel has the value range 0 to 999999.

The parameter "Modulo minimum" must be set to the value "0".

8352.33 Process data – modulo maximum

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. These limits are necessary for processing process data with a limited range of values.

Example: A process data channel has the value range 0 to 999999.

The parameter "Modulo maximum" must be set to the value "1000000".

8352.34 Process data – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Value range: 0 to 100000

Edge of process data delay. This time is used for the calculation of the touchprobe event value.

8352.35 Process data – cycle time

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Value range: 0 to 100000

Cycle time of the process data data source.

1.1.41 8353 Touchprobe 2

The touchprobe function allows for maintaining any process data for an external switching event. For example, a light barrier signal can maintain the actual position of an external encoder, and the inverter can transfer this value to a higher-level controller.

The following activation types of the touchprobe channel can be selected:

- "Single trigger": Only triggered once. Another trigger can only be performed if the touchprobe channel is deactivated and then activated again, or if the user changes to "Auto restart" mode.
- "Auto restart": After triggering, the trigger is re-activated automatically.
- The touchprobe function is disabled if neither "single trigger" nor "auto restart" is activated.
- "Auto restart" is performed if "single trigger" and "auto restart" are active at the same time.

8353.1 Mode

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Single trigger
- 1 = Auto restart

Activates the function bit by bit.

The following settings can be made:

- Bit 1 = 0 and bit 0 = 0: The touchprobe function is disabled.
- Bit 1 = 0 and bit 0 = 1: Triggered once.
- Bit 1 = 1 and bit 0 = 0: Trigger with each event.
- Bit 1 = 1 and bit 0 = 1: Trigger with each event.

8353.2 Status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Wait for trigger
- 1 = Trigger activated

Current status.

The following settings can be made:

- Bit 0: Wait for trigger.
- Bit 1: Trigger activated

8353.3 Detected value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Data source value detected at the time of the trigger.

8353.10 Trigger – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = C track encoder 1
- 1 = C track encoder 2
- **3 = DI 01**
- 4 = DI 02
- 5 = DI 03
- 6 = DI 04
- 7 = DI 05

Trigger source

8353.11 Trigger – level

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Rising edge**
- 1 = Falling edge
- 2 = Rising and falling edge

Specifies the type of edge used for triggering.

8353.12 Trigger– sensor dead time rising edge

Factory setting: 0

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Dead time of the sensor used for the rising edge at the trigger input. This time is used for the calculation of the touchprobe event value.

8353.13 Trigger– sensor dead time falling edge

Factory setting: 0

Unit: μs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Dead time of the sensor used for the falling edge at the trigger input. This time is used for the calculation of the touchprobe event value.

8353.14 Trigger – counter

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 65535

This value is incremented by the value 1 with each trigger event.

8353.30 Data source

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function
- 8364.25 Actual position in system units
- 8364.26 Actual position in user units
- 8364.27 Actual position in user unit – modulo
- 8367.10 PO data word
- 8367.11 PO data word
- 8367.12 PO data word
- 8367.13 PO data word
- 8367.14 PO data word
- 8367.15 PO data word
- 8367.16 PO data word
- 8367.17 PO data word
- 8367.18 PO data word
- 8367.19 PO data word
- 8367.20 PO data word
- 8367.21 PO data word
- 8367.22 PO data word
- 8367.23 PO data word

- 8367.24 PO data word
- 8367.25 PO data word
- 8436.2 System time low part

Measured quantity for the touchprobe function.

8353.31 PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the file format when accessing process output data words. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format.

This parameter has no effect for data sources with a word width of 32 bits.

8353.32 Process data – modulo minimum

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. These limits are necessary for processing process data with a limited range of values.

Example: A process data channel has the value range 0 to 999999.

The parameter "Modulo minimum" must be set to the value "0".

8353.33 Process data – modulo maximum

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. These limits are necessary for processing process data with a limited range of values.

Example: A process data channel has the value range 0 to 999999.

The parameter "Modulo maximum" must be set to the value "1000000".

8353.34 Process data – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Value range: 0 to 100000

Edge of process data delay. This time is used for the calculation of the touchprobe event value.

8353.35 Process data – cycle time

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Value range: 0 to 100000

Cycle time of the process data data source.

1.1.42 8354 Fixed setpoints

It is possible to set 6 fixed setpoints. The fixed setpoints are active when the fixed speed setpoint (index 8376.11 is set) is set to "fixed setpoint" and when the fixed setpoint has been selected via terminal or process data.

8354.1 Speed 1 DT1

Factory setting: 1500000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 1 in drive train 1

8354.2 Speed 2 DT1

Factory setting: 7500000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 2 in drive train 1

8354.3 Speed 3 DT1

Factory setting: 10000000

Unit: 1E-4/min user unit

Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 3 in drive train 1

8354.4 Speed 4 DT1

Factory setting: 15000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 4 in drive train 1

8354.5 Speed 5 DT1

Factory setting: 20000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 5 in drive train 1

8354.6 Speed 6 DT1

Factory setting: 30000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 6 in drive train 1

8354.11 Speed 1 DT2

Factory setting: 1500000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 1 in drive train 2

8354.12 Speed 2 DT2

Factory setting: 7500000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 2 in drive train 2

8354.13 Speed 3 DT2

Factory setting: 10000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 3 in drive train 2

8354.14 Speed 4 DT2

Factory setting: 15000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 4 in drive train 2

8354.15 Speed 5 DT2

Factory setting: 20000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 5 in drive train 2

8354.16 Speed 6 DT2

Factory setting: 30000000
Unit: 1E-4/min user unit
Data type: Int32
Data length: 1
Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 6 in drive train 2

8354.20 Operating mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Bipolar/fixed setpoint
- **1 = Unipolar/fixed setpoint**
- 2 = Fixed setpoint + analog setpoint
- 3 = Fixed setpoint * analog setpoint
- 4 = Primary frequency setpoint

Operating mode

8354.21 Select fixed speed setpoint

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2

Instead of assignment via terminals, the fixed setpoint can be selected using parameter access.

8354.23. Select direction of rotation

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Positive
- 1 = Negative

Direction of rotation (positive/negative) for the fixed speed setpoints. The parameter is only effective if a direction of rotation is not specified by an instance with higher priority.

8354.24. Select ramp set

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ramp set 2

Active ramp set.

The following settings can be made:

- Display 0: Acceleration and deceleration ramps 11 and 21 are active.
- Display 1: Acceleration and deceleration ramps 12 and 22 are active.

8354.25 Analog input

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No source**
- 1 = Analog input AI 2
- 2 = Analog input AI 3
- 4 = Sum: AI 2 + AI 3

Analog input of I/O card CIO11A.

8354.30 Determined speed setpoint

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Currently active speed setpoint.

8354.31 Determined acceleration setpoint

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Currently active acceleration setpoint.

8354.32 Determined deceleration setpoint

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Currently active deceleration setpoint.

8354.40 Acceleration 1 DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active acceleration setpoint of the fixed setpoints at the active ramp set 1 of drive train 1.

8354.41 Acceleration 1 DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active acceleration setpoint of the fixed setpoints at the active ramp set 1 of drive train 2.

8354.42 Acceleration 2 DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active acceleration setpoint of the fixed setpoints at the active ramp set 2 of drive train 1.

8354.43 Acceleration 2 DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active acceleration setpoint of the fixed setpoints at the active ramp set 2 of drive train 2.

8354.50 Deceleration 1 DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active deceleration setpoint of the fixed setpoints at the active ramp set 1 of drive train 1.

8354.51 Deceleration 1 DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active deceleration setpoint of the fixed setpoints at the active ramp set 1 of drive train 2.

8354.52 Deceleration 2 DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active deceleration setpoint of the fixed setpoints at the active ramp set 2 of drive train 1.

8354.53 Deceleration 2 DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Active deceleration setpoint of the fixed setpoints at the active ramp set 2 of drive train 2.

1.1.43 8355 Brake DT1

Brake of drive train 1

8355.1 Brake ID

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Designation of the SEW-EURODRIVE brake installed on the motor.

8355.2 Connection type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = None
- 1 = **With brake rectifier**

Specifies how the brake is connected.

The following settings can be made:

- None: No brake connected.
- With brake rectifier: The brake is connected via brake rectifier, which is controlled using brake output DB 00 at X10.1 and X10.2.
- Direct supply: The brake is connected via DC 24 V brake output DB 00 at X10.1 and X10.2.

8355.3 Brake release time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Specifies how long the motor remains at standstill with speed "0" after enable until the brake releases.

8355.4 Brake application time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Specifies how long the mechanical brake needs to apply. Setting this parameter correctly will prevent the drive from sagging.

8355.5 Holding torque

Factory setting: 0

Unit: Nm

Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 10000
 Holding torque of the brake

1.1.44 8356 Brake DT2

Brake of drive train 2

8356.1 Brake ID

Factory setting: 0
 Unit:
 Data type: UInt32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 Designation of the SEW-EURODRIVE brake installed on the motor.

8356.2 Connection type

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- 0 = None
- **1 = With brake rectifier**

Specifies how the brake is connected.
 The following settings can be made:

- None: No brake connected.
- With brake rectifier: The brake is connected via brake rectifier, which is controlled using brake output DB 00 at X10.1 and X10.2.
- Direct supply: The brake is directly connected to X10.1 and X10.2. via the 24 V brake output DB 00.

8356.3 Brake release time

Factory setting: 200
 Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2000
 Specifies how long the motor remains at standstill with speed "0" after enable until the brake releases.

8356.4 Brake application time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Specifies how long the mechanical brake needs to apply. Setting this parameter correctly will prevent the drive from sagging.

8356.5 Holding torque

Factory setting: 0

Unit: Nm

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Holding torque of the brake

1.1.45 8357 Limit values DT1

Limit values of drive train 1

8357.10 Application limit – positive speed

Factory setting: 360000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum positive speed permitted for moving the system. The maximum speed is limited to this value.

8357.11 Application limit – negative speed

Factory setting: 360000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum negative speed permitted for moving the system. The maximum speed is limited to this value.

8357.12 Application limit – acceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum permitted value for accelerating the system.

8357.13 Application limit – deceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum permitted value for decelerating the system.

8357.14 Application limit – jerk time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Duration needed for producing and reducing torque or acceleration for reaching the actual setpoint. The jerk time takes effect in manual mode and in the following drive functions:

- Speed control (FCB 05)
- Torque control (FCB 07)
- Position control (FCB 09)

The positioning process extends to twice the set jerk time.

8357.15 Application limit – torque

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Maximum permitted torque applied to the system.

8357.16 Application limit – apparent output current

Factory setting: 2000000

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000000

Value to which the inverter output current is limited.

8357.17 Voltage limit

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Value to which the phase-to-phase output voltage of the inverter is limited.

8357.20 Emergency stop deceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Deceleration value for the ramp that is active during emergency stop. An emergency stop can be programmed as response to a fault.

8357.30 Modulo minimum

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. The limits are necessary for processing process data with a limited range of values.

Example: A process data channel has the value range 0 to 999999.

The parameter "Modulo minimum" must be set to the value "0". The parameter "Modulo maximum" must be set to the value "1000000".

8357.31 Modulo maximum

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. The limits are necessary for processing process data with a limited range of values.

1.1.46 8358 Limit values DT2

Limit values of drive train 2

8358.10 Application limit – positive speed

Factory setting: 360000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum positive speed permitted for moving the system. The maximum speed is limited to this value.

8358.11 Application limit – negative speed

Factory setting: 360000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum negative speed permitted for moving the system. The maximum speed is limited to this value.

8358.12 Application limit – acceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum permitted value for accelerating the system.

8358.13 Application limit – deceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum permitted value for decelerating the system.

8358.14 Application limit – jerk time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Duration needed for producing and reducing torque or acceleration for reaching the actual setpoint. The jerk time takes effect in manual mode and in the following drive functions:

- Speed control (FCB 05)
- Torque control (FCB 07)
- Position control (FCB 09)

The positioning process extends to twice the set jerk time.

8358.15 Application limit – torque

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Maximum permitted torque applied to the system.

8358.16 Application limit – apparent output current

Factory setting: 2000000

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000000

Value to which the inverter output current is limited.

8358.17 Voltage limit

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Value to which the phase-to-phase output voltage of the inverter is limited.

8358.20 Emergency stop deceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Deceleration value for the ramp that is active during emergency stop. An emergency stop can be programmed as response to a fault.

8358.30 Modulo minimum

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. The limits are necessary for processing process data with a limited range of values.

Example: A process data channel has the value range 0 to 999999.

The parameter "Modulo minimum" must be set to the value "0". The parameter "Modulo maximum" must be set to the value "1000000".

8358.31 Modulo maximum

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Upper and lower modulo limits can be set for the processing of process data. The limits are necessary for processing process data with a limited range of values.

1.1.47 8360 Motor data DT1

Motor data of drive train 1

8360.1 Calculate electrical startup

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes
- 2 = Nameplate

[Factory setting]

[Unit]

[Resolution]

[Range of values]

Yes/no

[Description]

Calculate electrical startup.

This is necessary after changing motor data.

[Preliminary value description]

Yes: Calculation is performed.

No: Calculation is not performed.

8360.2 Number of identical motors

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 1 to 100

Number of identical motors in parallel connection.

8360.3 Nominal voltage of connected motor

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Nominal voltage of the connected motor.

The value is set before startup.

8360.4 Nominal frequency of connected motor

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Nominal frequency of the connected motor.

8360.5 Version number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number

8360.6 Motor type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Asynchronous motor**
- 1 = Synchronous motor
- 2 = LSPM motor
- 3 = Reluctance synchronous motor
- 4 = IPM motor

Motor type

8360.7 Number of pole pairs

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 500

Number of pole pairs

8360.8 Nominal speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Nominal speed

8360.9 Maximum speed at motor shaft

Factory setting: 100

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Maximum speed of the motor; if applicable the maximum permitted speed at the motor shaft calculated at startup from motor and gear unit data.

8360.10 Nominal torque matching nominal current

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Nominal torque matching nominal current

8360.11 Maximum torque at motor shaft

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Maximum torque of the motor; if applicable the maximum permitted torque at the motor shaft calculated at startup from motor and gear unit data.

8360.12 Nominal current matching nominal torque

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Nominal current matching the nominal torque (line current, rms)

8360.13 Maximum current

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -
Value range: 0 to 10000
Maximum current (line current, rms)

8360.14 Nominal voltage

Factory setting: 0
Unit: V
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 2000
Nominal voltage (line voltage, rms)

8360.15 Nominal frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Nominal frequency

8360.16 Stator resistance at 20 °C

Factory setting: 0
Unit: Ohm
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 1000
Stator resistance at 20 °C

8360.17 Rotor resistance at 20 °C

Factory setting: 0
Unit: Ohm
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 1000
Rotor resistance at 20 °C

8360.18 Nominal stator temperature

Factory setting: 0
Unit: °C

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Stator temperature in stationary operation under nominal conditions

8360.46 Encoder offset

Factory setting: 0

Unit: °

Data type: Float32

Data length: 1

Resolution: -

Value range: -360 to 360

Encoder offset

8360.47 Inertia of motor and brake

Factory setting: 0

Unit: kgm²

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to Float32Max

Inertia of motor and brake

8360.48 Reference torque for relative information

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Reference torque for relative information

8360.62 Nominal power

Factory setting: 0

Unit: W

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 1000000

Nominal power

8360.64 Maximum field-weakening current synchronous machine

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Maximum field-weakening current synchronous machine

1.1.48 8361 Motor data DT2

Motor data of drive train 2

8361.1 Calculate electrical startup

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes
- 2 = Nameplate

Calculate electrical startup

8361.2 Number of identical motors

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 1 to 100

Number of identical motors

8361.3 Nominal voltage of connected motor

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Nominal voltage of connected motor

8361.4 Nominal frequency of connected motor

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Nominal frequency of the connected motor.

8361.5 Version number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number

8361.6 Motor type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Asynchronous motor**
- 1 = Synchronous motor
- 2 = LSPM motor
- 3 = Reluctance synchronous motor
- 4 = IPM motor

Motor type

8361.7 Number of pole pairs

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 500

Number of pole pairs

8361.8 Nominal speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Nominal speed

8361.9 Maximum speed at motor shaft

Factory setting: 100

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Maximum speed of the motor; if applicable the maximum permitted speed at the motor shaft calculated at startup from motor and gear unit data.

8361.10 Nominal torque matching nominal current

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Nominal torque matching nominal current

8361.11 Maximum torque at motor shaft

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Maximum torque of the motor; if applicable the maximum permitted torque at the motor shaft calculated at startup from motor and gear unit data.

8361.12 Nominal current matching nominal torque

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Nominal current matching the nominal torque (line current, rms)

8361.13 Maximum current

Factory setting: 0

Unit: A
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 10000
Maximum current (line current, rms)

8361.14 Nominal voltage

Factory setting: 0
Unit: V
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 2000
Nominal voltage (line voltage, rms)

8361.15 Nominal frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Nominal frequency

8361.16 Stator resistance at 20 °C

Factory setting: 0
Unit: Ohm
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 1000
Stator resistance at 20 °C

8361.17 Rotor resistance at 20 °C

Factory setting: 0
Unit: Ohm
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 1000
Rotor resistance at 20 °C

8361.18 Nominal stator temperature

Factory setting: 0

Unit: °C

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Nominal stator temperature

8361.46 Encoder offset

Factory setting: 0

Unit: °

Data type: Float32

Data length: 1

Resolution: -

Value range: -360 to 360

Encoder offset

8361.47 Inertia of motor and brake

Factory setting: 0

Unit: kgm²

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to Float32Max

Inertia of motor and brake

8361.48 Reference torque for relative information

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Reference torque for relative information

8361.62 Nominal power

Factory setting: 0

Unit: W

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 1000000

Nominal power

8361.64 Maximum field-weakening current synchronous machine

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Maximum field-weakening current synchronous machine

1.1.49 8362 Control mode DT1

Control mode for drive train 1

8362.1 Control mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = VFCPLUS**
- 1 = CFC
- 2 = V/f
- 4 = ELSM®

Control mode

8362.2 Direction of rotation reversal

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Direction of rotation reversal

8362.3 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Value range:

- -4000 = 4 kHz noise
- 2500 = 2.5 kHz constant

- **4000 = 4 kHz constant**
- 8000 = 8 kHz constant
- 16000 = 16 kHz constant

PWM frequency

8362.4 Limitation strategy

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = PWM fixed – no current limiting
- 1 = PWM fixed – dynamic current limiting
- **2 = PWM variable – no current limiting**
- 3 = PWM variable – dynamic current limiting

Strategy for reducing the output current automatically in the event of an overload of the output stage.

1.1.50 8363 Control mode DT2

Control mode DT2

8363.1 Control mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = VFCPLUS**
- 1 = CFC
- 2 = V/f
- 4 = ELSM®

Control mode

8363.2 Direction of rotation reversal

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Direction of rotation reversal

8363.3 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Value range:

- -4000 = 4 kHz noise
- 2500 = 2.5 kHz constant
- **4000 = 4 kHz constant**
- 8000 = 8 kHz constant
- 16000 = 16 kHz constant

PWM frequency

8363.4 Limitation strategy

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = PWM fixed – no current limiting
- 1 = PWM fixed – dynamic current limiting
- **2 = PWM variable – no current limiting**
- 3 = PWM variable – dynamic current limiting

Strategy for reducing the output current automatically in the event of an overload of the output stage.

1.1.51 8364 Control mode process values

Control mode process values

8364.7 Possible operating modes

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Torque control
- 1 = Speed control
- 2 = Positioning

Possible operating modes

8364.13 Limitation status flags

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = User-defined current limit reached
- 1 = Thermal current limit reached
- 2 = Explosion protection current limit
- 3 = Current limit reached by control mode

- 8 = User defined torque limit reached
- 16 = Speed monitoring motor mode – active
- 17 = Speed monitoring generator mode – active
- 9 = Torque limited by speed limit

Limitation status flags

8364.21 Position setpoints in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint of the position in system units

8364.22 Position setpoint in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint of the position in user units

8364.25 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position in system units

8364.26 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position in user units

8364.27 Actual position in user unit – modulo

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current position in user units taking account of modulo scaling.

8364.28 Lag error in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Lag error in system units

8364.29 Lag error in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Lag error in user units

8364.31 Motor position in system units

Factory setting: 0

Unit: 1/(2³²) rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Motor position in system units

8364.43 Speed controller setpoint speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint speed of the speed controller in system units

8364.44 Speed controller setpoint speed in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint speed of the speed controller in user units

8364.45 Actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual speed in system units

8364.46 Actual speed in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual speed in user units

8364.47 Filtered actual speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Filtered actual speed in system units

8364.48 Filtered actual speed in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Filtered actual speed in user units

8364.61 Stator frequency

Factory setting: 0
 Unit: mHz
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Stator frequency

8364.78 Total acceleration in user units

Factory setting: 0
 Unit: 1E-02/(min*s) user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Total acceleration in user units

8364.90 Relative limited setpoint torque in system units

Factory setting: 0
 Unit: 1E-03 % nominal motor torque
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Relative, limited setpoint torque in system units

8364.90 Relative actual torque in system units

Factory setting: 0
 Unit: 1E-03 % nominal motor torque
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Relative actual torque in system units

8364.95 Actual torque in communication units

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual torque in communication units

8364.96 Relative minimum torque in system units

Factory setting: 0

Unit: 1E-03 % nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Relative minimum torque in system units

8364.97 Relative maximum torque in system units

Factory setting: 0

Unit: 1E-03 % nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Relative maximum torque in system units

8364.117 Relative torque-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Instantaneous value of the actual current of the torque-generating component, phase value in star connection, with reference to the nominal inverter current.

8364.118 Absolute torque-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, torque-generating component, absolute, instantaneous value, phase value in star connection.

8364.119 Relative field-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Instantaneous value of the actual current of the field-generating component. Phase value in star connection with reference to the nominal inverter current.

8364.120 Absolute field-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, field-generating component, absolute, instantaneous value, phase value in star connection.

8364.127 Relative apparent current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Relative apparent current

8364.128 Absolute apparent current – rms value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Apparent current, absolute, rms value

8364.151 UqRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, q-component, absolute, instantaneous value of the phase in star connection

8364.152 UdRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, d-component, absolute, instantaneous value of the phase in star connection

8364.155 UaRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, a-component, absolute, instantaneous value of the phase in star connection

8364.156 UbRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, b-component, absolute, instantaneous value of the phase in star connection

8364.157 Ua

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual voltage, a-component, absolute, instantaneous value of the phase in star connection

8364.158 Ub

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual voltage, b-component, absolute, instantaneous value of the phase in star connection

8364.159 Absolute value of the setpoint voltage – rms value

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, value, absolute, rms value

8364.160 DC link voltage instantaneous value

Factory setting: 0

Unit: mV

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Instantaneous value of the DC link voltage

8364.181 PsiSRef

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint stator flux, value, instantaneous value

8364.182 PsiRRef

Factory setting: 0

Unit: μVs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Setpoint rotor flux, value, instantaneous value

8364.183 PsiSUmod

Factory setting: 0
Unit: μVs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Stator flux U-model, value, instantaneous value

8364.184 PsiRUmod

Factory setting: 0
Unit: μVs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux U-model, value, instantaneous value

8364.185 PsiSaUmod

Factory setting: 0
Unit: μVs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Stator flux U-model, a-component

8364.186 PsiSbUmod

Factory setting: 0
Unit: μVs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Stator flux U-model, b-component

8364.187 PsiRaUmod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux U-model, a-component

8364.188 PsiRbUmod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux U-model, b-component

8364.189 PsiRdlmod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux I-model, d-component

8364.190 PsiRqlmod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Rotor flux I-model, q-component

8364.211 Apparent motor power

Factory setting: 0
Unit: VA
Data type: Int32
Data length: 1
Resolution: 1

Value range: -2147483648 to 2147483647

Apparent motor power

8364.212 Electrical effective motor power

Factory setting: 0

Unit: W

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Effective motor power (electrical)

8364.213 Reactive motor power

Factory setting: 0

Unit: VA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Reactive motor power

8364.221 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Value range:

- -4000 = 4 kHz noise
- 2500 = 2.5 kHz constant
- 4000 = 4 kHz constant
- **8000 = 8 kHz constant**
- 16000 = 16 kHz constant

PWM frequency

8364.231 Position encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position encoder dead time

8364.232 Motor encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Motor encoder dead time

1.1.52 8365 Fault manager

Fault manager

8365.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Currently pending fault. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

8365.2 Internal fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Internal fault number. If this fault occurs, contact SEW-EURODRIVE Service.

8365.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Currently pending subcomponent fault. The fault code is structured as follows:

- Bits 8 to 15: Main fault
- Bits 0 to 7: Subfault

– Bits 16 to 31: Always 0

This means the fault code can be sent in a 16-bit process data word.

8365.4 Internal fault code subcomponent

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Developer code of the subcomponent

8365.5 Manual fault reset

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = None**
- 1 = Default
- 2 = With parameter set acceptance

The following settings can be made:

– None: No reset is performed.

– Default: The fault is acknowledged.

– With parameter acceptance: The device can be acknowledged and continued to be operated when the hardware device configuration has changed, for example because option cards have been removed. Option cards that can no longer be accessed are ignored.

8365.6 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Fault reset
- 1 = External fault –active
- 2 = External braking resistor fault

Control bits

8365.7 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Warning
- 1 = Fault
- 2 = Fault with output stage inhibit
- 3 = Fault acknowledgement with CPU reset

Status bits of the active fault

1.1.53 8366 Process data

Process data

8366.1 Stop

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Controls process data communication.

8366.2 Basic cycle time

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 1 = 500 µs
- **0 = 1 ms**
- 2 = 1 ms actual value optimized

Determines the cycle time used for processing the process data.

Note: The setting "1 ms actual value optimized" is only permitted in combination with MOVI-C CONTROLLER®.

8366.3 Current cycle time

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 1 = 500 µs
- **0 = 1 ms**
- 2 = 1 ms actual value optimized
- 3 = 2 ms
- 4 = 4 ms

Current cycle time

8366.4 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No source**
- 3 = EtherCAT®/SBusPLUS
- 4 = Standard fieldbus system

Process data source.

8366.5 Use synchronization signal

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- **1 = Yes**

Specifies whether the synchronization signal of the higher-level controller is to be used.

8366.6 Controller setpoint cycle

Factory setting: 1000

Unit: µs

Data type: Int32

Data length: 1

Resolution: 500

Value range: 500 to 20000

Cycle time for setpoint input from the higher-level PLC/MOVI-C® CONTROLLER

8366.7 Period duration of the sync signal

Factory setting: 0

Unit: µs

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Determined period duration of the synchronization signal.

8366.8 Substitute values for interpolated setpoints

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

The setpoint generation of FCB 06, FCB 08, FCB 10 calculates substitute values if no process output data are present due to faults on the bus to the application cycle. Values are interpolated based on a constant speed.

8366.9 Substitute value counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Diagnostic counter for substitute values calculated since the last restart.

8366.11 Standard fieldbus system

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No source**
- **1 = SBus**
- **2 = Fieldbus**
- **3 = EtherCAT®/SBusPLUS**

Preferred process data source that is used when the source is set to "Standard fieldbus system".

1.1.54 8367 PO data

The process output data are the input data for the inverter.

8367.1 Update

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Specifies whether process output data are retrieved from the input buffer.

8367.2 Data word count

Factory setting: 16

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 16

Number of data words for process data communication.

8367.4 Valid data

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Indicates whether valid process data have been received at least once.

8367.5 Received packets

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Number of received packets.

8367.10 - 8367.25 Array size 16 data words

Factory setting:

Data type: Bit field (array)

Data length: 16

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12

- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15

Current process data. If update is disabled, the values can be entered manually to implement a kind of bus monitor.

1.1.55 8368 PI data

PI data

8368.1 Update

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Specifies whether process input data are written to the output buffer.

8368.2 Data word count

Factory setting: 16

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 16

Number of data words for process data communication.

8368.3 Data sources

Factory setting:

- 8364.46 High word "Actual speed in user units"
- 8364.46 Low word "Actual speed in user units"
- 0.0 Saturated "No function"

Data type: Parameter word pointer (DataArray)

Data length: 16

Value range:

- 0.0 No function
- 8334.1 Digital inputs basic unit
- 8364.25 Actual position in system units
- 8364.26 Actual position in user units
- 8364.27 Actual position in user unit – modulo
- 8364.45 Actual speed in system units
- 8364.46 Actual speed in user units
- 8364.61 Stator frequency

- 8364.95 Actual torque in communication units
- 8370.1 Status word 1
- 8371.1 Status word 2
- 8372.1 Status word 3
- 8379.5 Transparent mode status word
- 8379.6 Transparent mode status word
- 8381.120 Encoder 1 – actual position in system units
- 8381.121 Encoder 1 – actual position in user units
- 8381.122 Encoder 1 – actual position in user units – modulo
- 8382.120 Encoder 2 – actual position in system units
- 8382.121 Encoder 2 – actual position in user units
- 8382.122 Encoder 2 – actual position in user units – modulo
- 8580.1 Digital inputs I/O card
- 8703.2 Safety card -status word
- 8703.3 Safety card -status word
- 8703.4 Safety card -status word

Specifies for all 16 data words which data is written on which data word (offset 0 – PD 1, offset 1 – PD 2 to offset 15 – PD 16). Also specifies the format to be used.

– Bits 0 to 15: Parameter index number (values only from list)

– Bits 16 to 23: Parameter subindex number (values only from list)

– List:

– Bits 24 to 31:

– 0: Saturated to 16 bits (the internal 32-bit value is limited to 16 bits. When this value exceeds the value range of the 16-bit value, then no overflow occurs but the maximum value is limited. This prevents a change from maximum positive to maximum negative.)

– 1: Low word: lower 16 bits of the 32-bit value.

– 2: High word: upper 16 bits of the 32-bit value.

8368.4 Data words

Factory setting: 0

Unit:

Data type: Int32 (DataArray)

Data length: 16

Resolution: 1

Value range: 0 to 65535

Value of the data source (index 8368.3). (Offset 0 – PD 1, offset 1 – PD 2 to offset 15 – PD 16)

1.1.56 8370 Status word 1

Status word 1

8370.1 Actual value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Actual value of the status word.

8370.2 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No source
- **1 = System**
- 2 = Local value

Specifies whether the status word is written by the system or whether the local value is used.

8370.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Local setpoint of the status word specified by the user.

8370.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Bits 0 to 15 programmable
- **1 = Bits 0 to 5 FCB number / bits 6 to 15 programmable**

Specifies whether the first 6 bits of the status words are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

The following settings can be made:

– Bits 0 to 15 programmable: All 16 bits of the status word can be programmed by the user.

– Bits 0 to 5 FCB number / bits 6 to 15 programmable: Bits 0 to 5 are assigned to the FCB number, the other bits are programmable.

8370.10 Bit functions

Factory setting:

- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 8569.1 Bit 1 "Status bits"
- 8437.2 Bit 1 "Status bits"
- 8332.1 Bit 6 "Status bits"
- 8331.7 Bit 1 "Status bits"
- 8322.1 Bit 1 "Active drive train"
- 8365.7 Bit 1 "Status bits"
- 8314.1 Bit 0 "Status bits"
- 8314.1 Bit 1 "Status bits"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"

- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 10 "Standby mode active"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8335.1 Bit 0 "DB 00"
- 8335.1 Bit 1 "DO 00"
- 8335.1 Bit 2 "DO 01"
- 8335.1 Bit 3 "DO 02"
- 8335.1 Bit 4 "DO 03"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"

- 8382.130 Bit 7 "Encoder 2 referenced"
- 8437.2 Bit 0 "Brake/DynaStop® applied"
- 8437.2 Bit 1 "Brake/DynaStop® released"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"

- 8581.1 Bit 0 "DO 10"
- 8581.1 Bit 1 "DO 11"
- 8581.1 Bit 2 "DO 12"
- 8581.1 Bit 3 "DO 13"
- 8703.7 Bit 0 "SBT active"

Sets the function of the individual bits of the status word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.1.57 8371 Status word 2

Status word 2

8371.1 Actual value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Actual value of the status word.

8371.2 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No source**
- 1 = System
- 2 = Local value

Specifies whether the status word is written by the system or whether the local value is used.

8371.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Local setpoint of the status word specified by the user.

8371.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Bits 0 to 15 programmable**
- 1 = Bits 0 to 5 FCB number / bits 6 to 15 programmable

Specifies whether the first 6 bits of the status words are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

The following settings can be made:

- Bits 0 to 15 programmable: All 16 bits of the status word can be programmed by the user.
- Bits 0 to 5 FCB number / bits 6 to 15 programmable: Bits 0 to 5 are assigned to the FCB number, the other bits are programmable.

8371.10 Bit functions

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"

- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 10 "Standby mode active"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8335.1 Bit 0 "DB 00"
- 8335.1 Bit 1 "DO 00"
- 8335.1 Bit 2 "DO 01"
- 8335.1 Bit 3 "DO 02"
- 8335.1 Bit 4 "DO 03"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8437.2 Bit 0 "Brake/DynaStop® applied"
- 8437.2 Bit 1 "Brake/DynaStop® released"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"

- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8581.1 Bit 0 "DO 10"
- 8581.1 Bit 1 "DO 11"
- 8581.1 Bit 2 "DO 12"
- 8581.1 Bit 3 "DO 13"
- 8703.7 Bit 0 "SBT active"

Sets the function of the individual bits of the status word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.1.58 8372 Status word 3

Status word 3

8372.1 Actual value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Actual value of the status word.

8372.2 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No source
- **1 = System**
- 2 = Local value

Specifies whether the status word is written by the system or whether the local value is used.

8372.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Local setpoint of the status word specified by the user.

8372.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Bits 0 to 15 programmable**
- 1 = Bits 0 to 5 FCB number / bits 6 to 15 programmable

Specifies whether the first 6 bits of the status words are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

The following settings can be made:

- Bits 0 to 15 programmable: All 16 bits of the status word can be programmed by the user.
- Bits 0 to 5 FCB number / bits 6 to 15 programmable: Bits 0 to 5 are assigned to the FCB number, the other bits are programmable.

8372.10 Bit functions

Factory setting:

- 8332.1 Bit 0 "Status bits"
- 8332.1 Bit 1 "Status bits"
- 8332.7 Bit 0 "Not ready" status bits"
- 8332.7 Bit 2 "Not ready" status bits"
- 8332.7 Bit 6 "Not ready" status bits"
- 8332.1 Bit 2 "Status bits"
- 8332.7 Bit 10 "Not ready" status bits"
- 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"

- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 10 "Standby mode active"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8335.1 Bit 0 "DB 00"
- 8335.1 Bit 1 "DO 00"
- 8335.1 Bit 2 "DO 01"
- 8335.1 Bit 3 "DO 02"
- 8335.1 Bit 4 "DO 03"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"

- 8437.2 Bit 0 "Brake/DynaStop® applied"
- 8437.2 Bit 1 "Brake/DynaStop® released"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8581.1 Bit 0 "DO 10"

- 8581.1 Bit 1 "DO 11"
- 8581.1 Bit 2 "DO 12"
- 8581.1 Bit 3 "DO 13"
- 8703.7 Bit 0 "SBT active"

Sets the function of the individual bits of the status word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.1.59 8373 Control word 1

Control word 1

8373.1 Actual value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Actual value of the control word.

8373.2 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1

- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies whether the control word is written by a certain PO data, or whether the local value is to be used.

8373.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Local setpoint of the control word specified by the user.

8373.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Bits 0 to 15 programmable
- **1 = Bits 0 to 5 FCB number / bits 6 to 15 programmable**

Specifies whether the first 6 bits of the control word are interpreted as number of the FCB to be activated, or whether they can be programmed from a selection list.

8373.10 Bit functions

Factory setting:

- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 0.0 Bit 0 "No function"
- 8509.5 Bit 0 "Control bits"
- 8520.11 Bit 0 "Control bits"
- 8520.11 Bit 1 "Control bits"
- 8365.6 Bit 0 "Control bits"
- 8322.3 Bit 0 "Select drive train from process data"
- 8322.3 Bit 1 "Select drive train from process data"
- 8354.24 Bit 0 "Select ramp set"
- 8586.1 Bit 0 "Activate standby mode"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"

- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 0 "Activate standby mode using control word"
- 8703.6 Bit 0 "Activate SBT"

Sets the function of the individual bits of the control word by means of a selection list (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.1.60 8374 Control word 2

Control word 2

8374.1 Actual value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Actual value of the control word.

8374.2 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14

- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies whether the control word is written by a certain PO data, or whether the local value is to be used.

8374.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Local setpoint of the control word specified by the user.

8374.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Bits 0 to 15 programmable**
- 1 = Bits 0 to 5 FCB number / bits 6 to 15 programmable

Specifies whether the first 6 bits of the control word are interpreted as number of the FCB to be activated, or whether they can be programmed from a selection list.

8374.10 Bit functions

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"

- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 0 "Activate standby mode using control word"
- 8703.6 Bit 0 "Activate SBT"

Sets the function of the individual bits of the control word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.1.61 8375 Control word 3

Control word 3

8375.1 Actual value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Actual value of the control word.

8375.2 Source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1

- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies whether the control word is written by a certain PO data, or whether the local value is to be used.

8375.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Local setpoint of the control word specified by the user.

8375.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Bits 0 to 15 programmable**
- 1 = Bits 0 to 5 FCB number / bits 6 to 15 programmable

Specifies whether the first 6 bits of the control word are interpreted as number of the FCB to be activated, or whether they can be programmed from a selection list.

8375.10 Bit functions

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"

- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 0 "Activate standby mode using control word"
- 8703.6 Bit 0 "Activate SBT"

Sets the function of the individual bits of the control word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.1.62 8376 Setpoint buffer

Setpoint buffer

8376.1 Position – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13

- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32
- 926086 = Analog input AI 2
- 2236806 = Analog input AI 3
- 5316998 = Sum: AI 2 + AI 3

Specifies the source of the position setpoint for the inverter.

8376.2 Position – local value DT1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the position setpoint for FCB 09 and FCB 10 in drive train 1.

8376.3 Position – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8376.4 Position – actual value

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Positioning setpoint for the FCB 09 and FCB 10

8376.6 Position – local value DT2

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the position setpoint for FCB 09 and FCB 10 in drive train 2.

8376.11 Speed – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **1974434 = Fixed setpoints – speed**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23

- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32
- 926086 = Analog input AI 2
- 2236806 = Analog input AI 3
- 5316998 = Sum: AI 2 + AI 3

Specifies the source of the speed setpoint for the inverter.

8376.12 Speed – local value DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies the speed setpoint for FCB 05 and FCB 06 in drive train 1.

8376.13 Speed – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8376.14 Speed – actual value

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Speed setpoint for FCB 05 and FCB 06.

8376.16 Speed – local value DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies the speed setpoint for FCB 05 and FCB 06 in drive train 2.

8376.21 Torque – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9

- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
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- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32
- 926086 = Analog input AI 2
- 2236806 = Analog input AI 3
- 5316998 = Sum: AI 2 + AI 3

Specifies the source of the speed setpoint for the inverter.

8376.22 Torque – local value DT1

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Specifies the torque setpoint for FCB 07 and FCB 08 in drive train 1.

8376.24 Torque – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Torque setpoint for FCB 07 and FCB 08.

8376.26 Torque – local value DT2

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Specifies the torque setpoint for FCB 07 and FCB 08 in drive train 2.

8376.31 Acceleration precontrol – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
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- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7

- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
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- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the acceleration setpoint for the inverter.

8376.32 Acceleration precontrol – local value DT1

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the setpoint for acceleration precontrol in drive train 1.

8376.33 Acceleration precontrol – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**

- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8376.34 Acceleration precontrol – actual value

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Acceleration setpoint

8376.36 Acceleration precontrol – local value DT2

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the setpoint for acceleration precontrol in drive train 2.

8376.41 Mass moment of inertia – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12

- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the mass moment of inertia setpoint for the inverter. The parameter cannot be used for constant mass moment of inertia ratios.

8376.42 Mass moment of inertia – local value DT1

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Setpoint of the relative mass moment of inertia in drive train 1 with reference to the total mass moment of inertia of the drive (motor + brake + load) = 100.000%.

8376.43 Mass moment of inertia – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 16 bits
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8376.44 Mass moment of inertia – actual value

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint of the mass moment of inertia

8376.46 Mass moment of inertia – local value DT2

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Setpoint of the relative mass moment of inertia in drive train 2 with reference to the total mass moment of inertia of the drive (motor + brake + load) = 100.000%.

8376.51 Torque precontrol – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24

- 2171035 = Data Flexibility output data 25
 - 2236571 = Data Flexibility output data 26
 - 2302107 = Data Flexibility output data 27
 - 2367643 = Data Flexibility output data 28
 - 2433179 = Data Flexibility output data 29
 - 2498715 = Data Flexibility output data 30
 - 2564251 = Data Flexibility output data 31
 - 2629787 = Data Flexibility output data 32
- Specifies the source of torque precontrol for the inverter.

8376.52 Torque precontrol – local value DT1

Factory setting: 0
 Unit: 1E-01% nominal motor torque
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -10000 to 10000
 Specifies the setpoint for torque precontrol in drive train 1.

8376.54 Torque precontrol – actual value

Factory setting: 0
 Unit: 1E-01% nominal motor torque
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Torque precontrol

8376.56 Torque precontrol – local value DT2

Factory setting: 0
 Unit: 1E-01% nominal motor torque
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -10000 to 10000
 Specifies the setpoint for torque precontrol in drive train 2.

8376.61 Correcting value of external position controller – source

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:
 • **0 = Local value**

- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
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- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
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- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26

- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Sets the source of the correcting value for an external position controller for the inverter.

8376.62 Correcting value of external position controller – local value DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies an external speed in drive train 1.

This parameter is only needed in the higher-level controller for FCB 06 for operation with a position controller.

8376.63 Correcting value of external position controller – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8376.64 Correcting value of external position controller – actual value

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Correcting value for external speed.

This parameter is only needed in the higher-level controller for FCB 06 for operation with a position controller.

8376.66 Correcting value of external position controller – local value DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies an external speed in drive train 2.

This parameter is only needed in the higher-level controller for FCB 06 for operation with a position controller.

1.1.63 8377 Profile value buffer

Valid profile values depend on the active FCB:

- In "positioning" mode, all values are valid.
- In "speed control" mode, the only valid values are those for maximum speed positive/negative and jerk time.
- In "torque control" mode, only the jerk time is valid.

8377.1 Maximum positive speed – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **663719 = Application limit – positive speed**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1

- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
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- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
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- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Maximum positive speed – source

8377.2 Maximum positive speed – local value DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum positive speed – local value, drive train 1

8377.3 Maximum positive speed – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8377.4 Maximum positive speed – actual value

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum positive speed – actual value.

8377.6 Maximum positive speed – local value DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum positive speed – local value, drive train 2

8377.11 Maximum negative speed – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **729255 = Application limit – negative speed**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5

- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
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- 598171 = Data Flexibility output data 1
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- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30

- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Maximum negative speed – source

8377.12 Maximum negative speed – local value DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum negative speed – local value, drive train 1

8377.13 Maximum negative speed – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8377.14 Maximum negative speed – actual value

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum negative speed – actual value.

8377.16 Maximum negative speed – local value DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum negative speed – local value, drive train 2

8377.21 Maximum acceleration – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **794791 = Application limit – acceleration**
- 2039970 = Fixed setpoints – acceleration
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18

- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24
- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the maximum acceleration setpoint for the inverter.

8377.22 Maximum acceleration – local value DT1

Factory setting: 200000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum acceleration – local value, drive train 1

8377.23 Maximum acceleration – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8377.24 Maximum acceleration – actual value

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum acceleration – actual value

8377.26 Maximum acceleration – local value DT2

Factory setting: 200000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum acceleration – local value, drive train 2

8377.31 Maximum deceleration – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **860327 = Application limit – deceleration**
- 2105506 = Fixed setpoints – deceleration
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5

- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
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- 1843355 = Data Flexibility output data 20
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- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the maximum deceleration setpoint for the inverter.

8377.32 Maximum deceleration – local value DT1

Factory setting: 200000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum deceleration – local value, drive train 1

8377.33 Maximum deceleration – PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the data format of the source. The process output data words are data sources with a word width of 16 bits and can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8377.34 Maximum deceleration – actual value

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum deceleration – actual value

8377.36 Maximum deceleration – local value DT2

Factory setting: 200000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum deceleration – local value, drive train 2

8377.41 Jerk time – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **925863 = Application limit– jerk time**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9

- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
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- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
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This parameter specifies from where the inverter obtains its values for the jerk time.

8377.42 Jerk time – local value DT1

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 2000
Jerk time, in drive train 1

8377.44 Jerk time – actual value

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Read value of the valid jerk time

8377.46 Jerk time – local value DT2

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 2000
Jerk time, in drive train 2

8377.51 Maximum torque Q1 – source

Factory setting:
Data type: Enum
Data length: 1
Value range:

- 0 = Local value
- **991399 = Application limit – torque**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8

- 1188015 = PO data word 9
- 1253551 = PO data word 10
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- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the maximum torque setpoint Q1 for the inverter.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.52 Maximum torque Q1 – local value DT1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the first quadrant (positive speed, positive torque) in drive train 1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.54 Maximum torque Q1 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current maximum torque Q1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.56 Maximum torque Q1 – local value DT2

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the first quadrant (positive speed, positive torque) in drive train 2.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.61 Maximum torque Q2 – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **991399 = Application limit – torque**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
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- 1450159 = PO data word 13
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- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
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- 729243 = Data Flexibility output data 3
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- 860315 = Data Flexibility output data 5
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- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
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- 1253531 = Data Flexibility output data 11
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- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19

- 1843355 = Data Flexibility output data 20
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- 2039963 = Data Flexibility output data 23
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- 2171035 = Data Flexibility output data 25
- 2236571 = Data Flexibility output data 26
- 2302107 = Data Flexibility output data 27
- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the maximum torque setpoint Q2 for the inverter.

The maximum torque Q2 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.62 Maximum torque Q2 – local value DT1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the second quadrant (negative speed, positive torque) in drive train 1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.64 Maximum torque Q2 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current maximum torque Q2.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.66 Maximum torque Q2 – local value DT2

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the second quadrant (positive speed, positive torque) in drive train 2.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.71 Maximum torque Q3 – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **991399 = Application limit – torque**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
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- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
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- 2433179 = Data Flexibility output data 29
- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the maximum torque setpoint Q3 for the inverter.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.72 Maximum torque Q3 – local value DT1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the third quadrant (negative speed, negative torque) in drive train 1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.74 Maximum torque Q3 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current maximum torque Q3.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.76 Maximum torque Q3 – local value DT2

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the third quadrant (negative speed, negative torque) in drive train 2.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.81 Maximum torque Q4 – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Local value
- **991399 = Application limit – torque**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3

- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
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- 2367643 = Data Flexibility output data 28
- 2433179 = Data Flexibility output data 29

- 2498715 = Data Flexibility output data 30
- 2564251 = Data Flexibility output data 31
- 2629787 = Data Flexibility output data 32

Specifies the source of the maximum torque setpoint Q4 for the inverter.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.82 Maximum torque Q4 – local value DT1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the fourth quadrant (positive speed, negative torque) in drive train 1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.84 Maximum torque Q4 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current maximum torque Q4.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.86 Maximum torque Q4 – local value DT2

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies the maximum torque in the fourth quadrant (positive speed, positive torque) in drive train 2.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (index 8377.90) is set to 1-channel.

If this parameter is set to 4-channel, you can specify maximum torque values individually for each quadrant.

8377.90 Maximum torque – mode selection

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 1-channel**
- 2 = 4-channel

Specifies whether the same torque limit applies to all 4 quadrants or whether a maximum value can be defined for each quadrant:

- 1-channel: The value "maximum torque Q1" applies to all quadrants.
- 2-channel: A maximum torque setpoint can be defined for each quadrant.

8377.91 Maximum torque – transition mode Q1-Q2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Center**
- 1 = Motor mode
- 2 = Regenerator mode

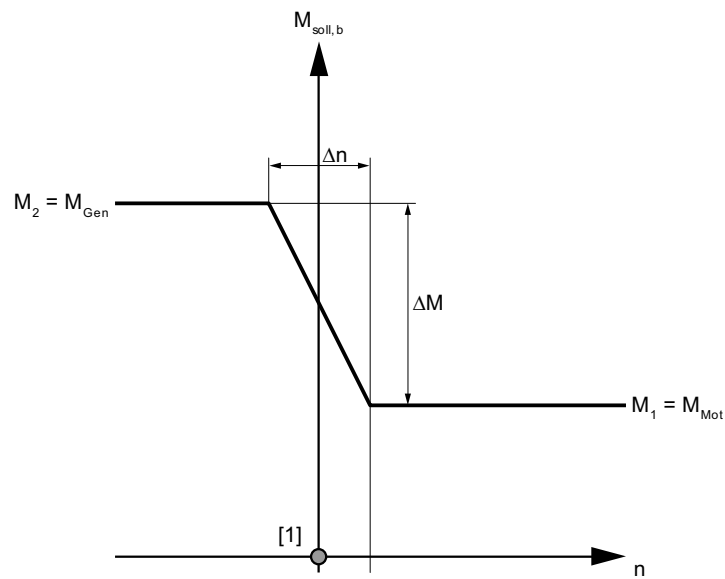
Specifies the transition between the set torques in Q1 and Q2. Not affected by the setting is the width of the transition range, which depends on the difference of the torque limits and on the parameter settings for the speed controller as well as on the total mass moment of inertia according to the following equation:

$$\Delta n = \frac{(m_{\text{grenz_rel1}} - m_{\text{grenz_rel2}}) \times M_{\text{Motor_nenn}}}{2 \times \pi \times J_{\text{ges}} \times K_{P_Nreg}}$$

16728253707

The following settings can be made:

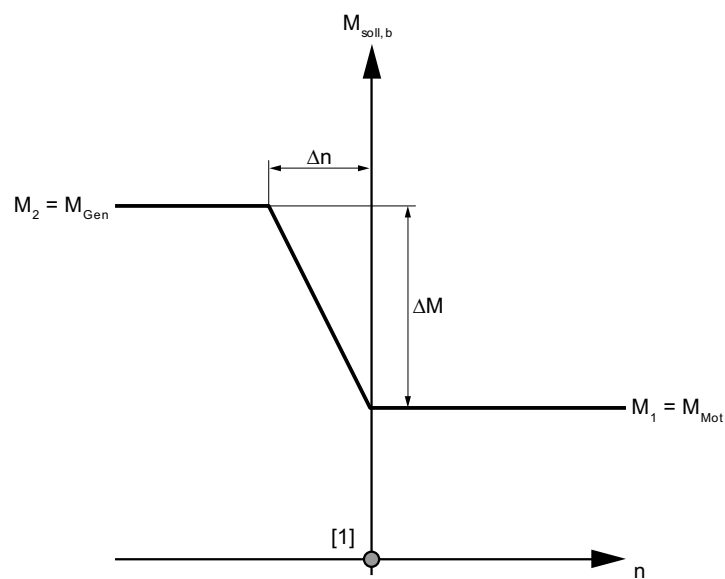
- Center: The torque is transitioned linearly centered from maximum torque Q1 to maximum torque Q2.



16727708299

[1] Transition speed

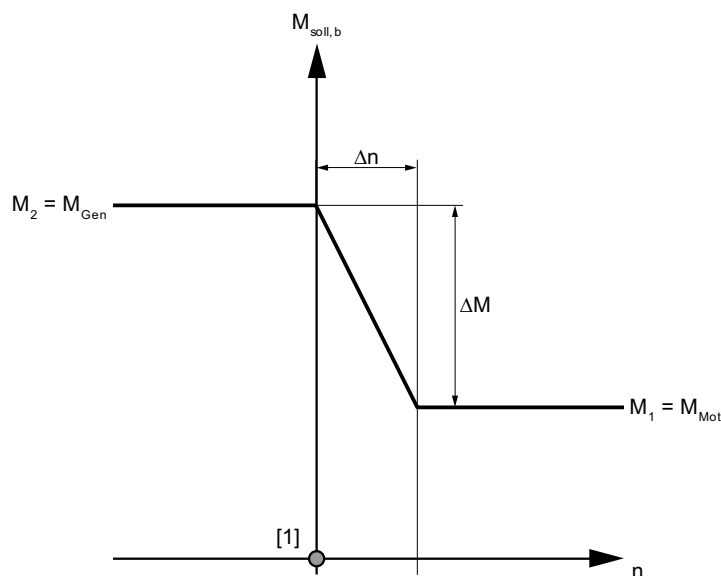
- Motor mode: The torque is transitioned linearly below transition speed from maximum torque Q1 to maximum torque Q2. The maximum torque Q1 applies to the transition speed.



16727710731

[1] Transition speed

– Regenerative operation: The torque is transitioned linearly above transition speed from maximum torque Q1 to maximum torque Q2. The maximum torque Q2 applies to the transition speed.



16727705867

[1] Transition speed

8377.92 Maximum torque – transition speed Q1-Q2 DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies the speed from which the torque in drive train 1 is changed linearly.

8377.93 Maximum torque – transition mode Q3-Q4

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Center**
- 1 = Motor mode
- 2 = Regenerator mode

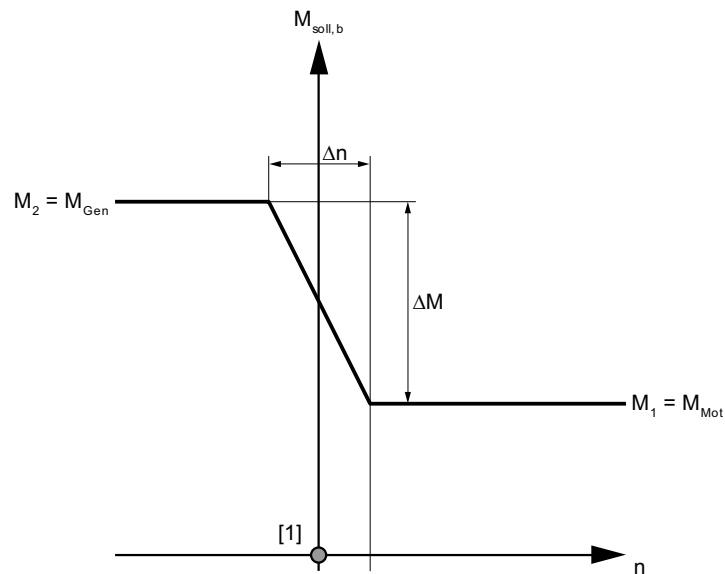
Specifies the transition between the set torques in Q3 and Q4. Not affected by the setting is the width of the transition range, which depends on the difference of the torque limits and on the parameter settings for the speed controller as well as on the total mass moment of inertia according to the following equation:

$$\Delta n = \frac{(m_{\text{grenz_rel1}} - m_{\text{grenz_rel2}}) \times M_{\text{Motor_nenn}}}{2 \times \pi \times J_{\text{ges}} \times K_{P_Nreg}}$$

16728253707

The following settings can be made:

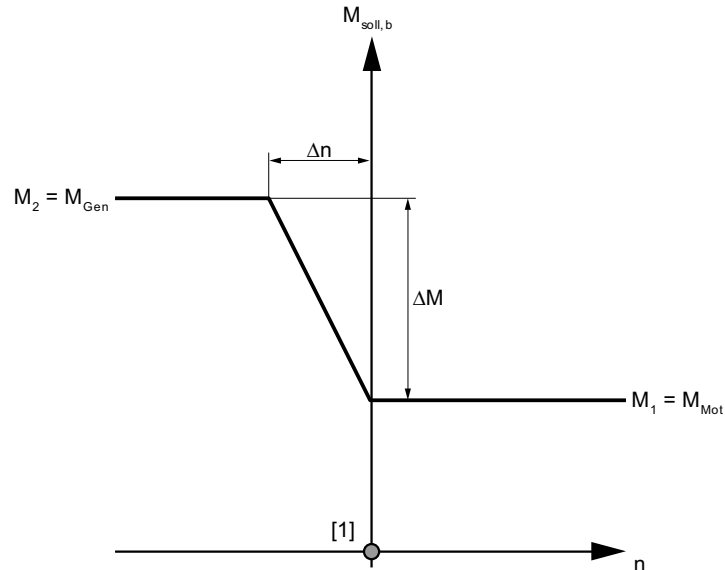
- Center: The torque is transitioned linearly centered from maximum torque Q3 to maximum torque Q4.



16727708299

[1] Transition speed

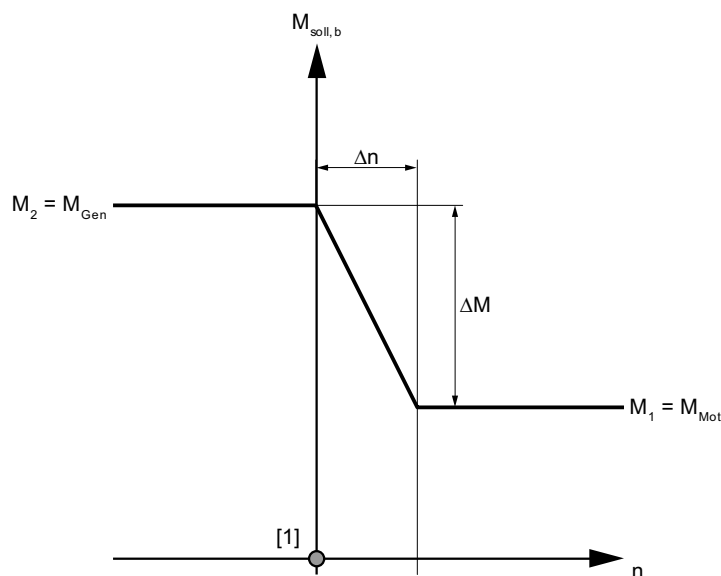
- Motor mode: The torque is transitioned linearly below transition speed from maximum torque Q3 to maximum torque Q4. The maximum torque Q3 applies to the transition speed.



16727710731

[1] Transition speed

– Regenerative operation: The torque is transitioned linearly above transition speed from maximum torque Q3 to maximum torque Q4. The maximum torque Q4 applies to the transition speed.



16727705867

[1] Transition speed

8377.94 Maximum torque – transition speed Q3-Q4 DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies the speed from which the torque in drive train 1 is changed linearly.

8377.96 Maximum torque – transition speed Q1-Q2 DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies the speed from which the torque in drive train 2 is changed linearly.

8377.98 Maximum torque – transition speed Q3-Q4 DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -3600000000 to 3600000000

Specifies the speed from which the torque in drive train 2 is changed linearly.

8377.100 External torque limitation – source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No source**
- 1 = Analog input AI 2
- 2 = Analog input AI 3
- 4 = Sum: AI 2 + AI 3

This parameter can be used to restrict the torque limit even further.

– No source: No further torque limitation.

– Analog input AI 2: The torque limit is weighted with the relative value (value/10 V or value/20 mA) of the analog input.

– Analog input AI 3: The torque limit is weighted with the relative value (value/10 V or value/20 mA) of the analog input.

– Analog input AI 2: The torque limit is weighted with the total of the relative values (value/10 V or value/20 mA) of analog inputs AI 2 and AI 3.

8377.101 External torque limitation – actual value

Factory setting: 0

Unit: 1E-01 %

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

The transferred value limits the value parameterized in the torque limits "Maximum torque Q1" to "Maximum torque Q4", e.g. :

– External limit = 50%

– Torque limits = 200.0%

Active torque limits = 00% of the parameterized torque limits.

1.1.64 8378 Low-resolution encoder

Low-resolution encoder

8378.1 Position

Factory setting: 0

Unit: inc.

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position (increments)

8378.2 Input level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Level – track A
- 1 = Level – track B

Input level

1.1.65 8379 Transparent mode

Transparent mode

8379.1 Control words – data source

Factory setting:

Data type: Enum (DataArray)

Data length: 3

Value range:

- **-1 = None**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4

- 860315 = Data Flexibility output data 5
 - 925851 = Data Flexibility output data 6
 - 991387 = Data Flexibility output data 7
 - 1056923 = Data Flexibility output data 8
 - 1122459 = Data Flexibility output data 9
 - 1187995 = Data Flexibility output data 10
 - 1253531 = Data Flexibility output data 11
 - 1319067 = Data Flexibility output data 12
 - 1384603 = Data Flexibility output data 13
 - 1450139 = Data Flexibility output data 14
 - 1515675 = Data Flexibility output data 15
 - 1581211 = Data Flexibility output data 16
 - 1646747 = Data Flexibility output data 17
 - 1712283 = Data Flexibility output data 18
 - 1777819 = Data Flexibility output data 19
 - 1843355 = Data Flexibility output data 20
 - 1908891 = Data Flexibility output data 21
 - 1974427 = Data Flexibility output data 22
 - 2039963 = Data Flexibility output data 23
 - 2105499 = Data Flexibility output data 24
 - 2171035 = Data Flexibility output data 25
 - 2236571 = Data Flexibility output data 26
 - 2302107 = Data Flexibility output data 27
 - 2367643 = Data Flexibility output data 28
 - 2433179 = Data Flexibility output data 29
 - 2498715 = Data Flexibility output data 30
 - 2564251 = Data Flexibility output data 31
 - 2629787 = Data Flexibility output data 32
- Data sources of the control word of transparent mode

8379.2 - 8379.4 Array size 3 control words – actual value

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 3

Resolution: 1

Value range: 0 to 65535

Current values of the control words of transparent mode.

8379.5 - 8379.6 Array size 2 status words – actual value

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 2

Resolution: 1

Value range: 0 to 65535

Current value of the status words of transparent mode.

1.1.66 8381 Encoder 1

These parameters describe the encoder at input 1.

8381.1 Type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No encoder**
- 1 = RS422
- 2 = HTL
- 3 = sin/cos
- 4 = HIPERFACE®/RS485
- 5 = Resolver

Encoder connected to the basic unit

8381.2 Numerator factor

Factory setting: 1024

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Numerator factor

8381.3 Denominator factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Denominator factor

8381.4 Numerator resolution factor

Factory setting: 0

Unit:
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2147483647
 Resolution factor numerator

8381.5 Denominator resolution factor

Factory setting: 1
 Unit:
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 1 to 2147483647
 Resolution factor denominator

8381.6 Counting direction

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **0 = Normal**
- 1 = Inverted

Counting direction of the encoder.
 The following settings can be made:

- Normal: The encoder rotates in the same direction as the motor (increments when the motor rotates in clockwise direction).
- Inverted: The encoder rotates in the opposite direction of the motor (decrements when the motor rotates in clockwise direction).

8381.7 Transition functions

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:

- **0 = Minimum amplitude value**
- 1 = Amplitude overdrive
- **2 = Comparison of digital and incremental positions**
- **3 = Track angle**
- **4 = SSI error bit**
- **5 = Position**
- **6 = Internal encoder faults**
- **7 = Evaluate internal encoder warnings**

- 8 = Maximum amplitude value
- **9 = Digital motor integration position monitoring**

Monitoring functions

8381.8 Configuration

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Track input resistors disabled
- 1 = C track threshold
- 2 = Disable absolute position monitoring

Configuration

8381.10 Position mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Without overflow counter
- **1 = With overflow counter**
- 3 = Single-turn absolute position
- 4 = Linear mode

These parameters are only relevant for absolute encoders.

Setting of the encoder connected to the basic unit.

The following settings can be made:

- Without overflow counter: Overflow is not logged. Next time the firmware boots, position 0 is signaled.
- With overflow counter: If the encoder is operated beyond its range, the inverter remembers the overflow and fills the position up to 32 bits. The position is maintained next time the device is switched on.
- Single-turn absolute position: The raw position of the encoder is displayed. This setting is only useful for systems that are operated within one motor revolution.
- Linear mode: Settings for the linear encoder.

8381.12 Relative position of reference point

Factory setting: 50000

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Relative position of the reference point

8381.13 Startup active

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Specifies whether startup is running.

8381.60 Manufacturer ID – HIPERFACE®

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stegmann**
- 1 = Heidenhain
- 2 = Hübner

Manufacturer ID – HIPERFACE®

8381.73 Incremental encoder

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Incremental encoder

8381.120 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current actual position in system units.

8381.121 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position in user units.

User units are defined when taking the drive train into operation.

8381.122 Actual position in user unit – modulo

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current position in user units taking account of modulo scaling.

User units are defined when taking the drive train into operation.

8381.130 Encoder status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Fault
- 2 = Encoder system present
- 3 = Nameplate-capable
- 4 = Absolute encoder
- 5 = Multi-turn rotary encoder
- 6 = C track found
- 7 = Referenced
- 8 = New track angle offset detected
- 15 = Restart required
- 16 = Position detection active
- 17 = Speed detection active
- 18 = Speed sensing disabled
- 20 = Initialized
- 25 = Delete referencing

Bit-coded encoder status

8381.133 Motor data status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Data available
- 1 = Search in progress
- 2 = Reading in progress
- 3 = Deleting in progress
- 4 = Writing in progress
- 5 = Fault
- 6 = Reading finished

Motor data status

8381.134 Encoder ID – HIPERFACE®

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Encoder ID – HIPERFACE®

8381.141 Firmware data

Data type: String8Bit (fill level array)

Data length: 16

Resolution:

Value range:

Data of the firmware of the encoder

8381.170 - 8381.189 Array size 20 diagnostics

Factory setting: 0

Unit:

Data type: Int32 (array)

Data length: 20

Resolution: 1

Value range: -2147483648 to 2147483647

Diagnostics

8381.192 Motor data memory

Factory setting: 0

Unit:

Data type: UInt8 (fill level array)

Data length: 2048

Resolution: 1

Value range: 0 to 255

Memory for motor data

8381.201 Zero offset correction

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Zero offset correction

8381.222 Position offset

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position offset

1.1.67 8382 Encoder 2

These parameters describe the encoder at input 2.

8382.1 Type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No encoder**
- 1 = RS422
- 2 = HTL
- 3 = sin/cos
- 4 = HIPERFACE®/RS485
- 6 = SSI
- 7 = EnDat
- 8 = SSI combi encoder
- 10 = CANopen

Type

8382.2 Numerator factor

Factory setting: 1024

Unit:

Data type: Int32

Data length: 1

Resolution: 1
Value range: 0 to 2147483647
Numerator factor

8382.3 Denominator factor

Factory setting: 1
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: 1 to 2147483647
Denominator factor

8382.4 Numerator resolution factor

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 2147483647
Resolution factor numerator

8382.5 Denominator resolution factor

Factory setting: 1
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: 1 to 2147483647
Resolution factor denominator

8382.6 Counting direction

Factory setting:
Data type: Enum
Data length: 1
Value range:

- **0 = Normal**
- 1 = Inverted

Counting direction of the encoder.
The following settings can be made:
– Normal: The encoder rotates in the same direction as the motor (increments when the motor rotates in clockwise direction).

- Inverted: The encoder rotates in the opposite direction of the motor (decrements when the motor rotates in clockwise direction).

8382.7 Transition functions

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- **0 = Minimum amplitude value**
- 1 = Amplitude overdrive
- **2 = Comparison of digital and incremental positions**
- **3 = Track angle**
- **4 = SSI error bit**
- **5 = Position**
- **6 = Internal encoder faults**
- **7 = Evaluate internal encoder warnings**
- 8 = Maximum amplitude value

Monitoring functions

8382.8 Configuration

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Track input resistors disabled
- 1 = C track threshold
- 2 = Disable absolute position monitoring

Configuration

8382.10 Position mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Without overflow counter
- **1 = With overflow counter**
- 3 = Single-turn absolute position
- 4 = Linear mode

These parameters are only relevant for absolute encoders.

Setting of the encoder connected to the basic unit.

The following settings can be made:

- Without overflow counter: Overflow is not logged. Next time the firmware boots, position 0 is signaled.

- With overflow counter: If the encoder is operated beyond its range, the inverter remembers the overflow and fills the position up to 32 bits. The position is maintained next time the device is switched on.
- Single-turn absolute position: The raw position of the encoder is displayed. This setting is only useful for systems that are operated within one motor revolution.
- Linear mode: Settings for the linear encoder.

8382.12 Relative position of reference point

Factory setting: 50000
 Unit: 1E-03%
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 100000
 Relative position of the reference point

8382.13 Startup active

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:
 • **0 = No**
 • 1 = Yes
 Startup active

8382.20 Number of position bits

Factory setting: 24
 Unit:
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 32
 Number of position bits (SSI/SSI combi/CANopen).

8382.21 Number of multi-turn bits

Factory setting: 12
 Unit:
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 32
 Number of multi-turn bits (SSI/SSI combi/CANopen)

8382.22 Start position bit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 30

Start of position bit (SSI/SSI combi/CANopen)

8382.23 Pulses per revolution

Factory setting: 11

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 63

Pulses per revolution (SSI/SSI combi/CANopen)

8382.24 Static tolerance band

Factory setting: 1024

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Static tolerance range (SSI/CANopen)

8382.25 Dynamic tolerance band

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Dynamic tolerance band (SSI/CANopen)

8382.26 User-defined fault mask

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

User-defined fault mask (SSI/SSI combi/CANopen)

8382.27 User-defined warning mask

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

User-defined warning mask (SSI/SSI combi/CANopen)

8382.28 Motor feedback

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

Motor feedback (SSI/CANopen)

8382.29 Refresh time

Factory setting: 0

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Refresh time

8382.30 Initialization time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Time until the encoder is ready for operation.

8382.31 Pause interval – SSI

Factory setting: 32

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 20 to 200

SSI pause interval (SSI/SSI combi encoder)

8382.32 Clock frequency – SSI

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 1 = 125 kHz
- **2 = 250 kHz**
- 3 = 500 kHz
- 4 = 1000 kHz
- 5 = 2000 kHz

Clock frequency – SSI

8382.33 Number of clocks per frame – SSI

Factory setting: 25

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 48

SSI number of clocks per frame (SSI/SSI combi encoder)

8382.34 Power failure evaluation – SSI

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Power failure evaluation – SSI

8382.35 Configuration – SSI

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Gray-to-binary decoder inactive

Configuration – SSI

8382.40 Baud rate – CAN

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 125 kbd
- 1 = 250 kbd
- **2 = 500 kbd**
- 3 = 1 MBd

Baud rate – CAN

8382.41 Number of SDO data – CANopen

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 8

Number of SDO data – CANopen

8382.42 - 8382.49 Array size 8 SDO service – CANopen

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 8

Resolution: 1

Value range: 0 to 4294967295

SDO service – CANopen

8382.50 - 8382.57 Array size 8 SDO data – CANopen

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 8

Resolution: 1

Value range: 0 to 4294967295

SDO data – CANopen

8382.60 Manufacturer ID – HIPERFACE®

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Stegmann**
- 1 = Heidenhain
- 2 = Hübner

Manufacturer ID – HIPERFACE®

8382.73 Incremental encoder

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Incremental encoder

8382.120 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current position in system units.

8382.121 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position in user units.

User units are defined when taking the drive train into operation.

8382.122 Actual position in user unit – modulo

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current position in user units taking account of modulo scaling.

User units are defined when taking the drive train into operation.

8382.130 Encoder status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Fault
- 2 = Encoder system present
- 3 = Nameplate-capable
- 4 = Absolute encoder
- 5 = Multi-turn rotary encoder
- 6 = C track found
- 7 = Referenced
- 8 = New track angle offset detected
- 15 = Restart required
- 16 = Position detection active
- 17 = Speed detection active
- 18 = Speed sensing disabled
- 20 = Initialized
- 25 = Delete referencing

Bit-coded encoder status

8382.133 Motor data status

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Data available
- 1 = Search in progress
- 2 = Reading in progress
- 3 = Deleting in progress
- 4 = Writing in progress
- 5 = Fault
- 6 = Reading finished

Motor data status

8382.134 Encoder ID – HIPERFACE®

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Encoder ID – HIPERFACE®

8382.141 Firmware data

Data type: String8Bit (fill level array)

Data length: 16

Resolution:

Value range:

Data of the firmware of the encoder

8382.170 - 8382.189 Array size 20 diagnostics

Factory setting: 0

Unit:

Data type: Int32 (array)

Data length: 20

Resolution: 1

Value range: -2147483648 to 2147483647

Diagnostics

8382.192 Motor data memory

Factory setting: 0

Unit:

Data type: Uint8 (fill level array)

Data length: 2048

Resolution: 1

Value range: 0 to 255

Memory for motor data

8382.201 Zero offset correction

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Zero offset correction

8382.222 Position offset

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position offset

1.1.68 8383 Output stage process values filtered for display

Control mode process values filtered for display.

8383.61 Stator frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Stator frequency

8383.117 Relative torque-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual value of the current controller, torque-generating component, instantaneous torque, phase value in star connection, with reference to the nominal inverter current.

8383.118 Absolute torque-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, torque-generating component, absolute, instantaneous value, phase value in star connection.

8383.119 Relative field-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, field-generating component, instantaneous value, phase value in star connection, with reference to the nominal inverter current.

8383.120 Absolute field-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual current, field-generating component, absolute, instantaneous value, phase value in star connection

8383.159 Absolute setpoint voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Setpoint voltage, absolute value

8383.160 DC link voltage

Factory setting: 0

Unit: mV

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

DC link voltage

1.1.69 8385 CFC diagnostics

CFC diagnostics

8385.2 Unlimited rotor flux setpoint – system units absolute

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Unlimited setpoint of the rotor flux in absolute system units

8385.3 Rotor flux model – system units absolute

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Model of the rotor flux in absolute system units

8385.4 Standstill flux – system units absolute

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Standstill flux in absolute system units

1.1.70 8386 V/f diagnostics

V/f diagnostics

8386.15 Inverse value of the V/f characteristic

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Inverse value of the V/f characteristic

1.1.71 8387 Parameter measurement diagnostics

Parameter measurement diagnostics

8387.5 Measurement status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **1 = Initialize**
- 2 = Initialize waiting
- 3 = Rotor adjustment 1
- 4 = Stator resistance measurement

- 16 = Stator inductance measurement
- 17 = Stator inductance calculation 1
- 18 = Stator inductance calculation 2
- 19 = Rotor resistance measurement
- 20 = DC brake
- 21 = LSigma measurement
- 22 = LSigma calculation 1
- 23 = LSigma calculation 2
- 24 = LSigma calculation 3
- 64 = Zero current 1
- 65 = Measuring positive d-axis 1
- 66 = Measuring q-axis 1
- 67 = Rotor adjustment 2
- 68 = Zero current 2
- 69 = Measuring q-axis 2
- 70 = Rotor adjustment 3
- 71 = Zero current 3
- 72 = Measuring md-axis
- 73 = Measuring positive d-axis 2
- 74 = Rotor adjustment 4
- 75 = Zero current 4
- 76 = Rotor adjustment 5
- 77 = Zero current 5
- 78 = Measuring negative d-axis 1
- 79 = Measuring q-axis 3
- 80 = Rotor adjustment 6
- 81 = Zero current 6
- 82 = Rotor adjustment 7
- 83 = Zero current 7
- 84 = Measuring negative d-axis 2
- 85 = Rotor adjustment 8
- 86 = Zero current 8
- 87 = Measuring positive dq angle bisector
- 88 = Rotor adjustment 8
- 89 = Zero current 9
- 90 = Measuring negative dq angle bisector
- 128 = Checking
- 129 = Complete
- 130 = Finished

Measurement status

1.1.72 8391 Fan control

Fan control

8391.100 Actual speed

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 100

Value range: 0 to 100000

Actual speed

8391.104 Fan availability

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 100

Value range: 0 to 100000

Display value for fan availability of fan window

1.1.73 8392 VFCPLUS DT1

These parameters contain data of VFCPLUS control mode for drive train 1.

8392.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = 2Q operation ON
- 1 = DC braking ON
- 2 = Flying start ON
- **3 = Stator resistance measurement ON**
- 4 = Standstill current ON
- 5 = Standby mode ON
- 6 = Premagnetization current monitoring ON
- 7 = Bit 7
- 8 = Output filter ON
- 9 = Bit 9
- 10 = Multiply DC link ripple squared with Mtarget
- 11 = Torque controller initial value NOT changed at voltage limit
- 12 = Rotor frequency via model in torque controller

- 13 = Speed via model in speed controller
- **14 = Output voltage measurement OFF**
- 15 = Premagnetization – no waiting time
- 16 = Current model for operation without encoder
- 17 = Do NOT control q-axis current model to 0
- 18 = Do NOT limit d-axis current model
- 19 = q-axis inverse transformation NOT 0
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Stator inductance adaption OFF
- 25 = Lsigma adaption OFF
- 26 = Adapt stator resistance
- 27 = Current limiting for Lsigma adaption
- 28 = Bit 28
- 29 = Bit 29
- 30 = DC link damping ON
- 31 = Bit 31

Control word

8392.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates stator resistance measurement.

8392.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 4Q (motor and generator mode)**
- 1 = 2Q (only motor mode)

The following settings can be made:

- 4Q (motor and generator mode)
- 2Q (only motor mode)

8392.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor

8392.6 Premagnetization time – display value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Valid premagnetization time: Rated premagnetization time x relative premagnetization time (index 8392.5)

8392.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Adjusts the output voltage in the small speed range. Changes to be made by experts only.

8392.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates the flying start function.

8392.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Risk of condensation when a motor is operated at low ambient temperatures. The motor might be damaged. This can be prevented by energizing, and consequently by heating the motor also at standstill. Standstill current can also be used to eliminate the time for premagnetizing an asynchronous motor. The motor remains energized at standstill, and is magnetized accordingly depending on the selected amount of standstill current.

8392.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Amount of the standstill current with reference to the rated magnetizing current of the motor. Immediate start only if values $\geq 100\%$.

8392.11 Flux optimization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates the flux-optimized operation of the asynchronous motor.

8392.13 Output filter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

The control mode takes account of an output filter.

8392.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates DC braking for brake ramps with FCB 02, FCB 13, and FCB 14.

8392.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates monitoring of premagnetization current.

8392.50 Factor – Kp flux controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the gain of the flux controller.

8392.51 Factor – Kp torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the gain of the torque controller.

8392.52 Factor – Tn torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the integral time of the torque controller.

8392.53 Factor – flying start current controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the gain of the current controller for the flying start function.

8392.54 Factor – stall limiting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Defines the degree of stall limiting.

8392.70 Activate DC link damping

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates DC link damping.

8392.71 DC link damping gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Specifies the gain of DC link damping.

1.1.74 8393 VFCPLUS DT2

These parameters contain data of VFCPLUS control mode for drive train 2.

8393.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = 2Q operation ON
- 1 = DC braking ON
- 2 = Flying start ON
- **3 = Stator resistance measurement ON**
- 4 = Standstill current ON
- 5 = Standby mode ON
- 6 = Premagnetization current monitoring ON
- 7 = Bit 7
- 8 = Output filter ON
- 9 = Bit 9
- 10 = Multiply DC link ripple squared with Mtarget
- 11 = Torque controller initial value NOT changed at voltage limit
- 12 = Rotor frequency via model in torque controller
- 13 = Speed via model in speed controller
- **14 = Output voltage measurement OFF**
- 15 = Premagnetization – no waiting time
- 16 = Current model for operation without encoder
- 17 = Do NOT control q-axis current model to 0
- 18 = Do NOT limit d-axis current model
- 19 = q-axis inverse transformation NOT 0
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Stator inductance adaption OFF
- 25 = Lsigma adaption OFF
- 26 = Adapt stator resistance
- 27 = Current limiting for Lsigma adaption
- 28 = Bit 28
- 29 = Bit 29
- 30 = DC link damping ON
- 31 = Bit 31

Control word

8393.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates stator resistance measurement.

8393.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 4Q (motor and generator mode)**
- 1 = 2Q (only motor mode)

The following settings can be made:

- 4Q (motor and generator mode)
- 2Q (only motor mode)

8393.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor

8393.6 Premagnetization time – display value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Valid premagnetization time: Rated premagnetization time x relative premagnetization time (index 8392.5)

8393.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Adjusts the output voltage in the small speed range. Changes to be made by experts only.

8393.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates the flying start function.

8393.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Risk of condensation when a motor is operated at low ambient temperatures. The motor might be damaged. This can be prevented by energizing, and consequently by heating the motor also at standstill. Standstill current can also be used to eliminate the time for premagnetizing an asynchronous motor. The motor remains energized at standstill, and is magnetized accordingly depending on the selected amount of standstill current.

8393.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Amount of the standstill current with reference to the rated magnetizing current of the motor. Immediate start only if values $\geq 100\%$.

8393.11 Flux optimization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates the flux-optimized operation of the asynchronous motor.

8393.13 Output filter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

The control mode takes account of an output filter.

8393.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates DC braking for brake ramps with FCB 02, FCB 13, and FCB 14.

8393.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates monitoring of premagnetization current.

8393.50 Factor – Kp flux controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the gain of the flux controller.

8393.51 Factor – Kp torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the gain of the torque controller.

8393.52 Factor – Tn torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Defines the degree of stall limiting.

8393.53 Factor – flying start current controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Specifies the gain of the current controller for the flying start function.

8393.54 Factor – stall limiting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Defines the degree of stall limiting.

8393.70 Activate DC link damping

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates DC link damping.

8393.71 DC link damping gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Specifies the gain of DC link damping.

1.1.75 8394 CFC DT1

These parameters contain data of CFC control mode for drive train 1.

8394.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Standstill current ON
- 5 = Bit 5
- 6 = Premagnetization current monitoring ON
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29

- 30 = DC link damping ON
- 31 = Bit 31

Control word

8394.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor

8394.6 Premagnetization time – display value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Valid premagnetization time: Rated premagnetization time x relative premagnetization time (index 8394.5)

8394.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Risk of condensation when a motor is operated at low ambient temperatures. The motor might be damaged. This can be prevented by energizing, and consequently by heating the motor also at standstill. Standstill current can also be used to eliminate the time for premagnetizing an asynchronous motor. The motor remains energized at standstill, and is magnetized accordingly depending on the selected amount of standstill current.

8394.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Asynchronous motor: The 100% value corresponds to the magnetizing current at zero speed. This setting allows for starting the motor immediately without premagnetization time.

Synchronous motor: The 100% value corresponds to 50% nominal motor current.

8394.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates monitoring of premagnetization current.

8394.19 Rotor resistance temperature adaptation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 400000

For adjusting the rotor resistance to the operating temperature of the motor.

The following settings can be made:

– Motor temperature measurement OFF: 100% = R at 70 °C.

– Motor temperature measurement ON: 100% = R at motor temperature.

8394.20 Adaptation of field weakening characteristic for asynchronous motors

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 50000 to 200000

Adjustment of the rotor flux in field weakening. 100% corresponds to the nominal characteristic.

8394.55 Current for optimized torque in base speed range

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 250000

Magnetization in the base speed range is chosen in such a way that the greatest possible torque is achieved with this relative nominal device current. This parameter must be set to "Maximum device current/nominal device current" to achieve the maximum possible torque.

8394.70 Activate DC link damping

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

Activates DC link damping.

8394.71 DC link damping gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Specifies the gain of DC link damping.

1.1.76 8395 CFC DT2

These parameters contain data of CFC control mode for drive train 2.

8395.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Standstill current ON
- 5 = Bit 5
- 6 = Premagnetization current monitoring ON
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10

- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = DC link damping ON
- 31 = Bit 31

Control word

8395.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor

8395.6 Premagnetization time – display value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Valid premagnetization time: Rated premagnetization time x relative premagnetization time (index 8394.5)

8395.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Risk of condensation when a motor is operated at low ambient temperatures. The motor might be damaged. This can be prevented by energizing, and consequently by heating the motor also at standstill. Standstill current can also be used to eliminate the time for premagnetizing an asynchronous motor. The motor remains energized at standstill, and is magnetized accordingly depending on the selected amount of standstill current.

8395.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Asynchronous motor: The 100% value corresponds to the magnetizing current at zero speed. This setting allows for starting the motor immediately without premagnetization time.

Synchronous motor: The 100% value corresponds to 50% nominal motor current.

8395.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates monitoring of premagnetization current.

8395.19 Rotor resistance temperature adaptation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 400000

For adjusting the rotor resistance to the operating temperature of the motor.

The following settings can be made:

- Motor temperature measurement OFF: 100% = R at 70 °C
- Motor temperature measurement ON: 100% = R at motor temperature

8395.20 Adaptation of field weakening characteristic for asynchronous motors

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 50000 to 200000

Adjustment of the rotor flux in field weakening. 100% corresponds to the nominal characteristic.

8395.55 Current for optimized torque in base speed range

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 250000

Magnetization in the base speed range is chosen in such a way that the greatest possible torque is achieved with this relative nominal device current. This parameter must be set to "Maximum device current/nominal device current" to achieve the maximum possible torque.

8395.70 Activate DC link damping

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates DC link damping.

8395.71 DC link damping gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Specifies the gain of DC link damping.

1.1.77 8396 V/f DT1

These parameters contain data of V/f control mode for drive train 1.

8396.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = 2Q operation ON
- 1 = DC braking ON
- 2 = Flying start ON
- **3 = Stator resistance measurement ON**
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- **7 = Stall limiting ON**
- 8 = Output filter ON
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Disable constant compensation of $R_s \cdot I_{syNom}$
- 30 = Disable premagnetization
- 31 = Disable current limiting

Control word

8396.2 Voltage characteristic slope

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Specifies the slope of the voltage characteristic.

8396.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates stator resistance measurement.

8396.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 4Q (motor and generator mode)**
- 1 = 2Q (only motor mode)

The following settings can be made:

- 4Q (motor and generator mode)
- 2Q (only motor mode)

8396.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor

8396.6 Premagnetization time – display value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Valid premagnetization time: Rated premagnetization time x relative premagnetization time (index 8396.5)

8396.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Adjusts the output voltage in the small speed range. Changes to be made by experts only.

8396.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates the flying start function.

8396.9 Slip compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Sets slip compensation with reference to nominal slip

8396.12 Stall limiting

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates stall protection.

8396.13 Output filter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

The control mode takes account of an output filter.

8396.14 IxR compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Compensation of the stator resistor voltage drop

8396.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activates DC braking for brake ramps with FCB 02, FCB 13, and FCB 14.

1.1.78 8397 U/f DT2

These parameters contain data of V/f control mode for drive train 2.

8397.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = 2Q operation ON
- 1 = DC braking ON
- 2 = Flying start ON
- **3 = Stator resistance measurement ON**
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6

- **7 = Stall limiting ON**
- 8 = Output filter ON
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Disable constant compensation of $R_s \cdot I_{sN}$
- 30 = Disable premagnetization
- 31 = Disable current limiting

Control word

8397.2 Voltage characteristic slope

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Specifies the slope of the voltage characteristic.

8397.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates stator resistance measurement.

8397.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 4Q (motor and generator mode)**
- 1 = 2Q (only motor mode)

The following settings can be made:

- 4Q (motor and generator mode)
- 2Q (only motor mode)

8397.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor

8397.6 Premagnetization time – display value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Valid premagnetization time: Rated premagnetization time x relative premagnetization time (index 8396.5)

8397.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Adjusts the output voltage in the small speed range. Changes to be made by experts only.

8397.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates the flying start function.

8397.9 Slip compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Sets slip compensation with reference to nominal slip.

8397.12 Stall limiting

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates stall protection.

8397.13 Output filter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

The control mode takes account of an output filter.

8397.14 IxR compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Compensation of the stator resistor voltage drop

8397.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- **1 = ON**

Activates DC braking for brake ramps with FCB 02, FCB 13, and FCB 14.

1.1.79 8399 ELSM® PLUS DT1

These parameters contain data of ELSM® PLUS control mode for drive train 1.

8399.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Use process values of encoder from "Actual speed source"
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Output voltage measurement OFF
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19

- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Control word

1.1.80 8400 ELSM® PLUS DT2

These parameters contain data of ELSM® PLUS control mode for drive train 2.

8400.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Use process values of encoder from "Actual speed source"
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Output voltage measurement OFF
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19

- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Control word

1.1.81 8401 ELSM® diagnostics

ELSM® diagnostics

8401.25 Stator resistance adaptation – base frequency setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 50000 to 200000

Stator resistance adaptation – base frequency setting

8401.26 Stator resistance adaptation – base frequency display value

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Stator resistance adaptation – display value of the base frequency

8401.27 Stator resistance adaptation – gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 100000

Stator resistance adaptation – gain factor

8401.28 Permanent flux adaptation – base frequency display value

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Permanent flux adaptation – display value of the base frequency

8401.29 Speed controller boost – gain factor

Factory setting: 30

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 100

Speed controller boost – gain factor

8401.31 Speed controller boost – base frequency setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 100000

Speed controller boost – base frequency setting

8401.32 Flux model – Kp setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Flux model – Kp setting

1.1.82 8402 Current controller DT1

Current controller for drive train 1

8402.3 Kp factor

Factory setting: 100000

Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 20000 to 200000
 Kp factor

8402.51 Balance controller

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:
 • 0 = Off
 • **1 = ON**
 Enables or disables the balance controller.

1.1.83 8403 Current controller DT2

Current controller for drive train 2

8403.3 Kp factor

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 20000 to 200000
 Kp factor

8403.51 Balance controller

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:
 • 0 = Off
 • **1 = ON**
 Enables or disables the balance controller.

1.1.84 8404 Speed controller DT1

The settings in this area are based on the entries made when defining drive train 1 (mass moment of inertia, stiffness, zero clearance).

8404.1 Speed/position controller sampling cycle

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 2 = 0.25 ms
- 1 = 0.5 ms
- **0 = 1.0 ms**
- 3 = 2.0 ms

This parameter specifies the sampling cycle for speed and position controllers. Small values improve the speed control for dynamic drives with low intrinsic inertia. This value is selected when setting the drive train (startup).

8404.2 Speed setpoint filter

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Time constant of the speed setpoint filter.

8404.3 Actual speed value filter

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Time constant of the actual speed value filter

8404.4 P gain

Factory setting: 100000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Gain factor of the speed controller.

8404.5 Time constant

Factory setting: 40000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Integration time constant of the speed controller. The I-component behaves inverse proportionally to the time constant. This means a large value results in a small I-component but 0 = no I-component.

8404.6 Speed precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Speed precontrol gain with reference to the nominal value.

8404.7 Acceleration precontrol filter

Factory setting: 5000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000000

Acceleration precontrol filter

8404.8 Acceleration precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Acceleration precontrol gain

8404.9 Integrator mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Hold**
- 1 = Clear
- 2 = Initialize

When the speed control loop is closed and has settled, the state variable of the integrator represents the load torque applied to the motor. The user can now choose the integrator value for closing the speed control range. The following 3 values are possible:

- Hold: The value is maintained as present at the time of opening the speed control loop. If the load torque has not changed, no adjustment is necessary when closing the speed control loop.
- Clear: The integrator always starts with the value "0". Adjustment is made to an existing load torque.
- Initialize: If you know the load torque, you can specify this value as the initial value for the integrator. You can use a local setpoint or a channel of the process data buffer for this purpose. The state variable of the integrator is "acceleration". The initialization value is "torque". The initialization value is converted into the variable "acceleration" using the parameterized total inertia. The dynamic adjustment of the inertia during operation via the process variable "variable inertia" is not taken into account.

8404.10 Local initialization of integrator

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

If parameter "Integrator mode" (index 8404.9) is set to "Initialize", then this parameter specifies the initialization value for the integrator.

8404.12 Switched integrator

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Switched**
- 1 = Not switched

Switched integrator

8404.13 Inertia of the load

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1 to 2147483647

Maximum inertia at the motor shaft. This value is specified when starting up the drive train.

8404.14 Source of integrator initialization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24

- 2171035 = Data Flexibility output data 25
 - 2236571 = Data Flexibility output data 26
 - 2302107 = Data Flexibility output data 27
 - 2367643 = Data Flexibility output data 28
 - 2433179 = Data Flexibility output data 29
 - 2498715 = Data Flexibility output data 30
 - 2564251 = Data Flexibility output data 31
 - 2629787 = Data Flexibility output data 32
- Source of integrator initialization

8404.15 Adapt time constant of closed-loop system

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Adapt time constant of closed-loop system

8404.51 Active resonance suppression – gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Active resonance suppression – gain

8404.52 Active resonance suppression – base frequency

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Active resonance suppression – base frequency

8404.100 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0

- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15

Control word

8404.200 HMI stiffness

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Stiffness specified when starting up the drive train (slider).

8404.201 HMI zero clearance

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Clearance specified when starting up the drive train (slider). 100% means rigid coupling.

1.1.85 8405 Speed controller DT2

The settings in this area are based on the entries made when defining drive train 2 (mass moment of inertia, stiffness, zero clearance).

8405.1 Speed/position controller sampling cycle

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 2 = 0.25 ms
- 1 = 0.5 ms
- **0 = 1.0 ms**
- 3 = 2.0 ms

This parameter specified the sampling cycle for speed and position controllers. Small values improve the speed control for dynamic drives with low intrinsic inertia. This value is selected when setting the drive train (startup).

8405.2 Speed setpoint filter

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Time constant of the speed setpoint filter.

8405.3 Actual speed value filter

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Time constant of the actual speed value filter

8405.4 P gain

Factory setting: 100000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Gain factor of the speed controller.

8405.5 Time constant

Factory setting: 40000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Integration time constant of the speed controller. The I-component behaves inverse proportionally to the time constant. This means a large value results in a small I-component but 0 = no I-component.

8405.6 Speed precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Speed precontrol gain with reference to the nominal value.

8405.7 Acceleration precontrol filter

Factory setting: 5000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000000

Acceleration precontrol filter

8405.8 Acceleration precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Acceleration precontrol gain

8405.9 Integrator mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Hold**
- 1 = Clear
- 2 = Initialize

When the speed control loop is closed and has settled, the state variable of the integrator represents the load torque applied to the motor. The user can now choose the integrator value for closing the speed control range. The following 3 values are possible:

- Hold: The value is maintained as present at the time of opening the speed control loop. If the load torque has not changed, no adjustment is necessary when closing the speed control loop.
- Clear: The integrator always starts with the value "0". Adjustment is made to an existing load torque.
- Initialize: If you know the load torque, you can specify this value as the initial value for the integrator. You can use a local setpoint or a channel of the process data buffer for this purpose. The state variable of the integrator is "acceleration". The initialization value is "torque". The initialization value is converted into the variable "acceleration" using the parameterized total inertia. The dynamic adjustment of the inertia during operation via the process variable "variable inertia" is not taken into account.

8405.10 Local initialization of integrator

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

If parameter "Integrator mode" (index 8404.9) is set to "Initialize", then this parameter specifies the initialization value for the integrator.

8405.12 Switched integrator

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Switched**
- 1 = Not switched

Switched integrator

8405.13 Inertia of the load

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1 to 2147483647

Maximum inertia at the motor shaft. This value is specified when starting up the drive train.

8405.14 Source of integrator initialization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Local value**
- 663727 = PO data word 1
- 729263 = PO data word 2
- 794799 = PO data word 3
- 860335 = PO data word 4
- 925871 = PO data word 5
- 991407 = PO data word 6
- 1056943 = PO data word 7
- 1122479 = PO data word 8
- 1188015 = PO data word 9
- 1253551 = PO data word 10
- 1319087 = PO data word 11
- 1384623 = PO data word 12
- 1450159 = PO data word 13
- 1515695 = PO data word 14
- 1581231 = PO data word 15
- 1646767 = PO data word 16
- 598171 = Data Flexibility output data 1
- 663707 = Data Flexibility output data 2
- 729243 = Data Flexibility output data 3
- 794779 = Data Flexibility output data 4
- 860315 = Data Flexibility output data 5
- 925851 = Data Flexibility output data 6
- 991387 = Data Flexibility output data 7
- 1056923 = Data Flexibility output data 8
- 1122459 = Data Flexibility output data 9
- 1187995 = Data Flexibility output data 10
- 1253531 = Data Flexibility output data 11
- 1319067 = Data Flexibility output data 12
- 1384603 = Data Flexibility output data 13
- 1450139 = Data Flexibility output data 14
- 1515675 = Data Flexibility output data 15
- 1581211 = Data Flexibility output data 16
- 1646747 = Data Flexibility output data 17
- 1712283 = Data Flexibility output data 18
- 1777819 = Data Flexibility output data 19
- 1843355 = Data Flexibility output data 20
- 1908891 = Data Flexibility output data 21
- 1974427 = Data Flexibility output data 22
- 2039963 = Data Flexibility output data 23
- 2105499 = Data Flexibility output data 24

- 2171035 = Data Flexibility output data 25
 - 2236571 = Data Flexibility output data 26
 - 2302107 = Data Flexibility output data 27
 - 2367643 = Data Flexibility output data 28
 - 2433179 = Data Flexibility output data 29
 - 2498715 = Data Flexibility output data 30
 - 2564251 = Data Flexibility output data 31
 - 2629787 = Data Flexibility output data 32
- Source of integrator initialization

8405.15 Adapt time constant of closed-loop system

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Adapt time constant of closed-loop system

8405.51 Active resonance suppression – gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Active resonance suppression – gain

8405.52 Active resonance suppression – base frequency

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Active resonance suppression – base frequency

8405.100 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0

- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15

Control word

8405.200 HMI stiffness

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

This parameter specifies the stiffness when starting up the drive train (slider).

8405.201 HMI zero clearance

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

This parameter specifies the zero clearance when starting up the drive train (slider).
100% means rigid coupling.

1.1.86 8406 Position controller DT1

Position controller for drive train 1

8406.1 P gain

Factory setting: 50000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

P gain for the position controller. The value results from the specifications made during drive train startup.

8406.3 Correcting value limit

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

If the drive leaves the position setpoint beyond the torque limit, the drive moves back and forth several times at the actual target position until the new setpoint takes effect.

The following settings can be made:

- Off: Movement beyond the target.
- On: No movement beyond the target.

1.1.87 8407 Position controller DT2

Position controller for drive train 2

8407.1 P gain

Factory setting: 50000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

P gain for the position controller. The value results from the specifications made during drive train startup.

8407.3 Correcting value limit

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

If the drive leaves the position setpoint beyond the torque limit, the drive moves back and forth several times at the actual target position until the new setpoint takes effect.

The following settings can be made:

- Off: Movement beyond the target.

– On: No movement beyond the target.

1.1.88 8408 ELSM® DT1

These parameters contain data of ELSM® control mode for drive train 1.

8408.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- **2 = Activate flying start function**
- **3 = Activate stator resistance measurement**
- 4 = Disable torque limiting via frequency
- 5 = Bit 5
- 6 = Activate 2Q operation
- 7 = Enable "positioning" mode
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Deactivate output voltage measurement
- 15 = Activate standstill current
- **16 = Activate rotor stall monitoring**
- 17 = Torque detection during transition from open-loop to closed-loop mode
- 18 = Modify I, open-loop as for initial startup
- 19 = Activate permanent flux adaption
- 20 = Disable speed controller boost
- 21 = Bit 21
- 22 = Disable DC link prediction
- 23 = Rotor adjustment – activate time condition
- 24 = Disable thermal motor protection
- 25 = Deactivate minimum current
- **26 = Adapt stator resistance**
- **27 = Measure rotor position – default (4 x pulses)**
- 28 = Bit 28
- 29 = Measure rotor position – fast (2 x pulses)
- 30 = Activate DC link damping
- 31 = Use encoder speed

Control word

8408.2 Status word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Rotor position measurement possible via characteristic curve method
- 1 = Rotor position measurement possible via inductance search
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Status word

8408.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates resistance measurement at enable.

8408.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 4Q (motor and generator mode)**
- 1 = 2Q (only motor mode)

The following settings can be made:

- 4Q (motor and generator mode)
- 2Q (only motor mode)

8408.5 Torque detection

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Determines the torque that is present during the transition from open-loop control to closed-loop control.

8408.6 Rotor stall monitoring

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Monitors the motor for stalling in open-loop control.

8408.7 Rotor position measurement

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

At standstill, the rotor position is determined by means of test signals.

8408.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates the flying start function.

The following settings can be made:

- On: Upon enable, the internal voltage is determined. When a voltage is measured, the rotating field is synchronized to the determined speed.
- Off: Enable always begins with an adjustment process.

8408.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Risk of condensation when a motor is operated at low ambient temperatures. The motor might be damaged. This can be prevented by energizing, and consequently by heating the motor also at standstill. Standstill current can also be used to eliminate the time for premagnetizing an asynchronous motor. The motor remains energized at standstill, and is magnetized accordingly depending on the selected amount of standstill current.

8408.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Synchronous motor: The 100% value corresponds to 50% nominal motor current.

8408.20 Transition speed – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1000000

Transition speed from open-loop to closed-loop control with reference to the value calculated at motor startup.

8408.21 Transition speed – display value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Display of the speed value weighted with index 8408.20 for the transition from open-loop to closed-loop control.

8408.22 Overload factor – closed-loop control

Factory setting: 1000000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 150000 to 2147483647

Sets the maximum torque in closed-loop control with reference to the nominal motor torque.

8408.23 Overload factor – speed – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Overload factor – speed setting

8408.24 Overload factor – speed – display value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Display of the speed value for the overload factor for speed weighted with index 8408.23.

8408.25 Overload factor – attenuation – M-n characteristic

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Overload factor – attenuation – M-n characteristic

8408.30 Overload factor – open-loop control

Factory setting: 150000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 150000 to 2147483647

Maximum torque in open-loop control with reference to the nominal motor torque.

8408.31 Current amplitude display value – open-loop control

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current amplitude display value – open-loop control

8408.32 Rotor stall monitoring – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Specifies the voltage difference between stationary setpoint voltage and actual voltage.

8408.33 Open-loop continuous current

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Amount of the open-loop continuous current with reference to 90% motor standstill current (I₀) of the motor.

8408.40 Rotor adjustment – current amplitude setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1000000

Current setpoint of the adjustment process based on the value calculated at motor startup.

8408.41 Rotor adjustment – current amplitude display value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current amplitude of the adjustment process weighted with the current setpoint (index 8408.40)

8408.42 Rotor adjustment – setpoint current ramp duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10 to 10000

Rotor adjustment – setpoint current ramp duration

8408.43 Rotor adjustment – min. evaluation duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 100 to 100000

Rotor adjustment – min. evaluation duration

8408.44 Rotor adjustment – max. evaluation duration

Factory setting: 10000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 100 to 100000

Rotor adjustment – max. evaluation duration

8408.45 Rotor adjustment – rotational frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: -3000 to 3000

Rotor adjustment – rotational frequency

8408.46 Rotor adjustment – setting duration

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1000000

Rotor adjustment – setting duration

8408.47 Rotor adjustment – display value duration

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Rotor adjustment – display value duration

8408.48 Rotor adjustment – Kp

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1
 Value range: 10000 to 100000
 Rotor adjustment – Kp

8408.49 Rotor adjustment – Ki

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 10000 to 100000
 Rotor adjustment – Ki

8408.60 Thermal motor protection – setting

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 10000 to 1000000
 Thermal motor protection – setting

8408.61 Thermal motor protection – display value

Factory setting: 1
 Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 1 to 1000000
 Thermal motor protection – display value

8408.70 Activate DC link damping

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:
 • 0 = Off
 • 1 = ON
 Activates DC link damping.

8408.71 DC link damping gain factor

Factory setting: 100000
 Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Specifies the gain of DC link damping.

1.1.89 8409 ELSM® DT2

These parameters contain data of ELSM® control mode for drive train 2.

8409.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- **2 = Activate flying start function**
- **3 = Activate stator resistance measurement**
- 4 = Disable torque limiting via frequency
- 5 = Bit 5
- 6 = Activate 2Q operation
- 7 = Enable "positioning" mode
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Deactivate output voltage measurement
- 15 = Activate standstill current
- **16 = Activate rotor stall monitoring**
- 17 = Torque detection during transition from open-loop to closed-loop mode
- 18 = Modify I, open-loop as for initial startup
- 19 = Activate permanent flux adaption
- 20 = Disable speed controller boost
- 21 = Bit 21
- 22 = Disable DC link prediction
- 23 = Rotor adjustment – activate time condition
- 24 = Disable thermal motor protection
- 25 = Deactivate minimum current
- **26 = Adapt stator resistance**
- **27 = Measure rotor position – default (4 x pulses)**

- 28 = Bit 28
- 29 = Measure rotor position – fast (2 x pulses)
- 30 = Activate DC link damping
- 31 = Use encoder speed

Control word

8409.2 Status word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Rotor position measurement possible via characteristic curve method
- 1 = Rotor position measurement possible via inductance search
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29

- 30 = Bit 30
- 31 = Bit 31

Status word

8409.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates resistance measurement at enable.

8409.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 4Q (motor and generator mode)**
- 1 = 2Q (only motor mode)

The following settings can be made:

- 4Q (motor and generator mode)
- 2Q (only motor mode)

8409.5 Torque detection

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Determines the torque that is present during the transition from open-loop control to closed-loop control.

8409.6 Rotor stall monitoring

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Monitors the motor for stalling in open-loop control.

8409.7 Rotor position measurement

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

At standstill, the rotor position is determined by means of test signals.

8409.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates the flying start function.

The following settings can be made:

- On: Upon enable, the internal voltage is determined. When a voltage is measured, the rotating field is synchronized to the determined speed.
- Off: Enable always begins with an adjustment process.

8409.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Risk of condensation when a motor is operated at low ambient temperatures. The motor might be damaged. This can be prevented by energizing, and consequently by heating the motor also at standstill. Standstill current can also be used to eliminate the time for premagnetizing an asynchronous motor. The motor remains energized at standstill, and is magnetized accordingly depending on the selected amount of standstill current.

8409.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 25000 to 200000

Synchronous motor: The 100% value corresponds to 50% nominal motor current.

8409.20 Transition speed – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1000000

Transition speed from open-loop to closed-loop control with reference to the value calculated at motor startup.

8409.21 Transition speed – display value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Display of the speed value weighted with index 8408.20 for the transition from open-loop to closed-loop control.

8409.22 Overload factor – closed-loop control

Factory setting: 1000000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 150000 to 2147483647

Sets the maximum torque in closed-loop control with reference to the nominal motor torque.

8409.23 Overload factor – speed – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Overload factor – speed setting

8409.24 Overload factor – speed – display value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Display of the speed value for the overload factor for speed weighted with index 8408.23.

8409.25 Overload factor – attenuation – M-n characteristic

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Overload factor – attenuation – M-n characteristic

8409.30 Overload factor – open-loop control

Factory setting: 150000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 2147483647

Sets the maximum torque in closed-loop control with reference to the nominal motor torque.

8409.31 Current amplitude display value – open-loop control

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current amplitude display value – open-loop control

8409.32 Rotor stall monitoring – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Specifies the voltage difference between stationary setpoint voltage and actual voltage.

8409.33 Open-loop continuous current

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Amount of the open-loop continuous current with reference to 90% motor standstill current (I₀) of the motor.

8409.40 Rotor adjustment – current amplitude setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1000000

Current setpoint of the adjustment process based on the value calculated at motor startup.

8409.41 Rotor adjustment – current amplitude display value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Current amplitude of the adjustment process weighted with the current setpoint (index 8408.40)

8409.42 Rotor adjustment – setpoint current ramp duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10 to 10000

Rotor adjustment – setpoint current ramp duration

8409.43 Rotor adjustment – min. evaluation duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1
Resolution: 1
Value range: 100 to 100000
Rotor adjustment – min. evaluation duration

8409.44 Rotor adjustment – max. evaluation duration

Factory setting: 10000
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Value range: 100 to 100000
Rotor adjustment – max. evaluation duration

8409.45 Rotor adjustment – rotational frequency

Factory setting: 0
Unit: mHz
Data type: Int32
Data length: 1
Resolution: 1000
Value range: -3000 to 3000
Rotor adjustment – rotational frequency

8409.46 Rotor adjustment – setting duration

Factory setting: 100000
Unit: 1E-03%
Data type: Int32
Data length: 1
Resolution: 1
Value range: 1 to 1000000
Rotor adjustment – setting duration

8409.47 Rotor adjustment – display value duration

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 100000
Rotor adjustment – display value duration

8409.48 Rotor adjustment – Kp

Factory setting: 100000

Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 10000 to 100000
 Rotor adjustment – Kp

8409.49 Rotor adjustment – Ki

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 10000 to 100000
 Rotor adjustment – Ki

8409.60 Thermal motor protection – setting

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 10000 to 1000000
 Thermal motor protection – setting

8409.61 Thermal motor protection – display value

Factory setting: 1
 Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 1 to 1000000
 Thermal motor protection – display value

8409.70 Activate DC link damping

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **0 = Off**
- **1 = ON**

 Activates DC link damping.

8409.71 DC link damping gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Specifies the gain of DC link damping.

1.1.90 8410 Power section – configuration data

Power section – configuration data

8410.41 DC link detection level – ON

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to Float32Max

Level from which the DC link is considered as being loaded and the inverter signals "Ready".

8410.42 DC link detection level – OFF

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to Float32Max

Below this level, the inverter revokes the "Ready" signal.

1.1.91 8411 Motor configuration data

Configuration data of the standard motor.

8411.5 Version number

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version number

8411.6 Motor type

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Motor type

8411.7 Number of pole pairs

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 1 to 500

Number of pole pairs

8411.8 Nominal speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Nominal speed

8411.9 Maximum speed at motor shaft

Factory setting: 100

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Maximum permitted torque at the motor shaft.

8411.10 Nominal torque matching nominal current

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Nominal torque matching nominal current

8411.11 Maximum torque at motor shaft

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 50000

Maximum permitted torque at the motor shaft.

8411.12 Nominal current matching nominal torque

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Nominal current, matching the nominal torque (line current, rms)

8411.13 Maximum current

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Maximum current (line current, rms)

8411.14 Nominal voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 2000

Nominal voltage (line voltage, rms)

8411.15 Nominal frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1
 Resolution: -
 Value range: 0 to 20000
 Nominal frequency

8411.16 Stator resistance at 20 °C

Factory setting: 0
 Unit: Ohm
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: 0 to 1000
 Stator resistance at 20 °C

8411.17 Rotor resistance at 20 °C

Factory setting: 0
 Unit: Ohm
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: 0 to 1000
 Rotor resistance at 20 °C

8411.18 Nominal stator temperature

Factory setting: 0
 Unit: °C
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Nominal stator temperature

8411.19 Temperature coefficient – stator resistance

Factory setting: 0
 Unit: K
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Stator resistance temperature coefficient

8411.20 Temperature coefficient – rotor resistance

Factory setting: 0

Unit: K

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Rotor resistance temperature coefficient

8411.21 Characteristic curve I (Psi_SigmaAbs) – L_Ref

Factory setting: 0

Unit: H

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs): L_Ref

8411.22 Characteristic curve I (Psi_SigmaAbs_d) – p0

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs_d): p0

8411.23 Characteristic curve I (Psi_SigmaAbs_d) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs_d): p1

8411.24 Characteristic curve I (Psi_SigmaAbs_d) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs_d): p2

8411.25 Characteristic curve I (Psi_SigmaAbs_q) – p0

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs_q): p0

8411.26 Characteristic curve I (Psi_SigmaAbs_q) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs_q): p1

8411.27 Characteristic curve I (Psi_SigmaAbs_q) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaAbs_q): p2

8411.28 Characteristic curve I (Psi_SigmaDiff) – L_Ref

Factory setting: 0

Unit: H

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaDiff): L_Ref

8411.29 Characteristic curve I (Psi_SigmaDiff_d) – p0

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaDiff_d): p0

8411.30 Characteristic curve I (Psi_SigmaDiff_d) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaDiff_d): p1

8411.31 Characteristic curve I (Psi_SigmaDiff_d) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaDiff_d): p2

8411.32 Characteristic curve I (Psi_SigmaDiff_q) – p0

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaDiff_q): p0

8411.33 Characteristic curve I (Psi_SigmaDiff_q) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve I (Psi_SigmaDiff_q): p1

8411.34 Characteristic curve I (Psi_SigmaDiff_q) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Characteristic curve I (Psi_SigmaDiff_q): p2

8411.35 Characteristic curve I (Psi_S) – I_Ref

Factory setting: 0
 Unit: A
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Characteristic curve I (Psi_S): I_Ref

8411.36 Characteristic curve I (Psi_S) – L_Ref

Factory setting: 0
 Unit: H
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Characteristic curve I (Psi_S): L_Ref

8411.37 Characteristic curve I (Psi_S) – p0

Factory setting: 0
 Unit:
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Characteristic curve I (Psi_S): p0

8411.38 Characteristic curve I (Psi_S) – p1

Factory setting: 0
 Unit:
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: -3.402823E+38 to Float32Max
 Characteristic curve I (Psi_S): p1

8411.39 Characteristic curve I (Psi_S) – p2

Factory setting: 0

Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Characteristic curve I (Psi_S): p2

8411.40 Characteristic curve M(I) – a1

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Characteristic curve M(I): a1

8411.41 Characteristic curve M(I) – a2

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Characteristic curve M(I): a2

8411.42 Characteristic curve M(I) – a3

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Characteristic curve M(I): a3

8411.43 Characteristic curve M(I) – a4

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Characteristic curve M(I): a4

8411.44 Characteristic curve M(I) – a5

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Characteristic curve M(I): a5

8411.45 Internal voltage at 1000 1/min

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

U_{p0} at 1000 1/min**8411.46 Encoder offset**

Factory setting: 0

Unit: °

Data type: Float32

Data length: 1

Resolution: -

Value range: -360 to 360

Encoder offset

8411.47 Inertia of motor and brake

Factory setting: 0

Unit: kgm²

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to Float32Max

Inertia of motor and brake

8411.200 HMI motor identification

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

HMI motor ID

1.1.92 8412 Speed controller configuration data

Speed controller configuration data

8412.2 Speed setpoint filter

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Speed setpoint filter

8412.3 Actual speed value filter

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Actual speed value filter of the drive train

8412.4 P gain

Factory setting: 100000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

P gain

8412.5 Time constant

Factory setting: 40000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Time constant

8412.6 Gain – speed precontrol

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 10000000
 Speed precontrol gain

8412.7 Filter – acceleration precontrol

Factory setting: 5000
 Unit: μ s
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 100000000
 Acceleration precontrol filter

8412.8 Gain – acceleration precontrol

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 10000000
 Acceleration precontrol gain

8412.13 Inertia of the load

Factory setting: 0
 Unit: 1E-07 kgm²
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -1 to 2147483647
 Inertia of the load

8412.200 HMI stiffness

Factory setting: 0
 Unit:
 Data type: Float32
 Data length: 1
 Resolution: -

Value range: -3.402823E+38 to Float32Max

HMI stiffness

8412.201 HMI zero clearance

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

HMI zero clearance

1.1.93 8413 Position controller configuration data

Position controller configuration data

8413.1 P gain

Factory setting: 50000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

P gain

1.1.94 8415 Power section – determine calibration data

Power section – determine calibration data

8415.1 Determined gain factor – motor current measurement path U

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Determined gain factor – motor current measurement path U

8415.2 Determined gain factor – motor current measurement path V

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Determined gain factor – motor current measurement path V

8415.3 Determined gain factor – motor current measurement path W

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Determined gain factor – motor current measurement path W

8415.4 Determined offset – DC link voltage measurement

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Determined offset – DC link voltage measurement

8415.5 Determined offset – output voltage measurement path UV

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Determined offset – output voltage measurement path UV

8415.6 Determined offset – output voltage measurement path VW

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Determined offset – output voltage measurement path VW

8415.10 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Activation

8415.11 Status word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Measurement in progress
- 2 = DC link offset determined
- 3 = Output voltage offsets determined
- 4 = Gain factors determined
- 5 = Fault
- 8 = DC link offset measured
- 9 = Output voltage offset measured
- 10 = Current U -> V measured
- 11 = Current V -> U measured
- 12 = Current V -> W measured
- 13 = Current W -> V measured
- 14 = Current W -> U measured
- 15 = Current U -> W measured
- 16 = Fault code bit 0
- 17 = Fault code bit 1
- 18 = Fault code bit 2
- 19 = Fault code bit 3
- 20 = Fault code bit 4
- 21 = Fault code bit 5
- 22 = Fault code bit 6
- 23 = Fault code bit 7

Status word

8415.12 Start measurement

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = None**
- 1 = DC link offset
- 2 = Output voltage offset

- 3 = Current U -> V
- 4 = Current V -> U
- 5 = Current V -> W
- 6 = Current W -> V
- 7 = Current W -> U
- 8 = Current U -> W

Start measurement

1.1.95 8417 Determine resolver calibration data

Determine resolver calibration data

8417.1 Determined gain factor

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Determined resolver gain factor

8417.2 Determined calibration details

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Sine greater than cosine

Determined calibration details

8417.10 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

Activation

8417.11 Status word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Ready
- 1 = Measurement in progress
- 2 = Data determined
- 5 = Fault
- 8 = Measurement finished
- 16 = Fault code bit 0
- 17 = Fault code bit 1
- 18 = Fault code bit 2
- 19 = Fault code bit 3
- 20 = Fault code bit 4
- 21 = Fault code bit 5
- 22 = Fault code bit 6
- 23 = Fault code bit 7

Status word

8417.12 Start measurement

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = None**
- 1 = Gain factor

Start measurement

1.1.96 8418 Calibrate encoder – rotating DT1

Encoder calibration – rotating drive train 1

8418.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Activate rotation by one electrical cycle
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8

- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Control word

1.1.97 8419 Calibrate encoder – rotating DT2

Encoder calibration – rotating drive train 2

8419.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Activate rotation by one electrical cycle
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8

- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Control word

1.1.98 8420 Calibrate encoder – standstill DT1

Encoder calibration – standstill drive train 1

8420.1 Voltage time area setpoint

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Voltage time area setpoint

8420.2 Ks

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1
Value range: 0 to 20000
KS

8420.3 AlphaS

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
AlphaS

8420.4 Amplitude of the 4th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 95443718
Amplitude of the 4th harmonic

8420.5 Phase position of the 4th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Phase position of the 4th harmonic

8420.6 Amplitude of the 6th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 95443718
Amplitude of the 6th harmonic

8420.7 Phase position of the 6th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Phase position of the 6th harmonic

8420.9 Time constant angle monitor

Factory setting: 500000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Time constant angle monitor

8420.10 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21

- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Control word

1.1.99 8421 Calibrate encoder – standstill DT2

Encoder calibration – standstill drive train 2

8421.1 Voltage time area setpoint

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Voltage time area setpoint

8421.2 Ks

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 20000

KS

8421.3 AlphaS

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

AlphaS

8421.4 Amplitude of the 4th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 95443718
Amplitude of the 4th harmonic

8421.5 Phase position of the 4th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Phase position of the 4th harmonic

8421.6 Amplitude of the 6th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 95443718
Amplitude of the 6th harmonic

8421.7 Phase position of the 6th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Phase position of the 6th harmonic

8421.9 Time constant angle monitor

Factory setting: 500000
Unit: μs
Data type: Int32
Data length: 1
Resolution: 1

Value range: 0 to 10000000

Time constant angle monitor

8421.10 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Bit 0
- 1 = Bit 1
- 2 = Bit 2
- 3 = Bit 3
- 4 = Bit 4
- 5 = Bit 5
- 6 = Bit 6
- 7 = Bit 7
- 8 = Bit 8
- 9 = Bit 9
- 10 = Bit 10
- 11 = Bit 11
- 12 = Bit 12
- 13 = Bit 13
- 14 = Bit 14
- 15 = Bit 15
- 16 = Bit 16
- 17 = Bit 17
- 18 = Bit 18
- 19 = Bit 19
- 20 = Bit 20
- 21 = Bit 21
- 22 = Bit 22
- 23 = Bit 23
- 24 = Bit 24
- 25 = Bit 25
- 26 = Bit 26
- 27 = Bit 27
- 28 = Bit 28
- 29 = Bit 29
- 30 = Bit 30
- 31 = Bit 31

Control word

1.1.100 8422 Net torque DT1

Net torque of drive train 1

8422.1 Inertia

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Inertia

8422.2 Filter time

Factory setting: 1000

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Filter time

1.1.101 8423 Net torque DT2

Net torque of drive train 2

8423.1 Inertia

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Inertia

8423.2 Filter time

Factory setting: 1000

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000000

Filter time

1.1.102 8425 Startup

Startup

8425.1 Perform smart motor setup

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Starts simple startup for the power-adjusted motor.

8425.2 Country-specific combination of nominal motor voltage and nominal motor frequency

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = EU – 400 V/50 Hz**
- 1 = USA/CAN – 460 V/60 Hz
- 2 = BRA/KOR – 380 V/60 Hz
- 3 = BRA/KOR – 440 V/60 Hz

Country-specific combination of nominal motor voltage and nominal motor frequency

8425.3 Country-specific combination of nominal motor voltage and nominal motor frequency

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **4 = EU – 230 V/50 Hz**
- 5 = USA/CAN – 230 V/60 Hz
- 6 = BRA/KOR – 220 V/60 Hz

Country-specific combination of nominal motor voltage and nominal motor frequency

8425.5 Perform auto startup

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Starts automatic startup based on the "digital motor integration" label.

8425.14 Detected connection type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Unknown**
- 1 = Delta
- 2 = Star
- 3 = Double delta
- 4 = Double star

Connection type detected by the frequency inverter system

1.1.103 8430 Internal data backup

Internal data backup

8430.1 Status 1

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Status 1

8430.2 Command 1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Inactive**
- 1 = Create restore point
- 2 = Recover data from restore point
- 3 = Delete restore point
- 4 = Protect restore point
- 5 = Unprotect restore point

Command 1

8430.3 Description 1

Data type: String8Bit (fill level array)

Data length: 21

Resolution:

Value range:

Description 1

8430.4 Memory status 1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Free**
- 1 = Assigned
- 2 = Protected
- 3 = Invalid
- 4 = Inconsistent
- 5 = Not free

Memory status of restore point 1

8430.8 Operating hours counter 1

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Operating hours counter 1

8430.9 Date and time 1

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Date and time 1

8430.10 Parameter layout 1

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Parameter layout 1 (attritab version)

1.1.104 8431 Parameter setup

Parameters of the parameter setup function block

8431.1 Basic initialization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Performs basic initialization in the device.

8431.2 Delivery state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Resets all device settings to their default values. The parameter is reset automatically.

8431.13 Scope of parameters in the event of a download error

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

If downloading a (partial) parameter set or parameter group is aborted, then the parameter value is set to the partial parameter set ID (values 2 to 8191) or to the main index of the parameter group (values from 8192).

The total parameter set has the value 1.

8431.100 CRC device parameter set

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

CRC device parameter set

8431.101 Hash value of device parameter set

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 4294967295

Value triple consisting of hash value, attribute version, and version of the default settings of the device parameter set

8431.102 Algorithm for hash value

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Identification of the algorithm for the hash value (changed default value counter)

1.1.105 8432 Non-volatile memory – direct access

NV direct access

8432.6 Content as data array

Factory setting: 0

Unit:

Data type: UInt8 (DataArray)

Data length: 32768

Resolution: 1

Value range: 0 to 255

Content as data array

1.1.106 8433 Scope control

Scope control

8433.1 Control word

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Scope control word

8433.2 Status word

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Scope status word

8433.3 Reference time

Factory setting: 0
Unit:
Data type: Uint8 (DataArray)
Data length: 8
Resolution: 1
Value range: 0 to 255
Reference time of the scope measurement (64 bits)

8433.5 Trigger time

Factory setting: 0
Unit:
Data type: Uint8 (DataArray)
Data length: 8
Resolution: 1
Value range: 0 to 255
Trigger time of the scope measurement.

8433.7 Maximum number of sampling points

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Indicates the maximum number of sampling points per channel.

1.1.107 8434 Scope configuration

Scope configuration

8434.1 Configuration ID

Factory setting: 6470
Unit:

Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Scope configuration ID

8434.2 Maximum number of recording channels

Factory setting: 10
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 65535
Maximum number of recording channels

8434.3 Maximum number of trigger channels

Factory setting: 3
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 65535
Maximum number of trigger channels

8434.10 Minimum configurable sampling cycle

Factory setting: 500
Unit: μ s
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Minimum configurable sampling cycle

8434.11 Maximum configurable sampling cycle

Factory setting: 2199023255
Unit: μ s
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Max. configurable sampling cycle

8434.12 System time resolution

Factory setting: 1
 Unit: ns
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 System time resolution

8434.13 Scope time resolution

Factory setting: 1024
 Unit: ns
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 Scope time resolution

8434.30 Scope memory size

Factory setting: 90112
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 Size of the scope memory in bytes (for diagnostics and test).

1.1.108 8435 Scope setting values

Scope settings

8435.1 Recording mode

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **1 = Trace mode**
- 2 = Streaming mode
- 3 = Streaming prefilter mode
- 4 = Trace data logger
- 5 = Display mode

 Recording mode

8435.2 Sampling cycle

Factory setting: 1000

Unit: μ s

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Scope sampling cycle

8435.3 Post-trigger recording

Factory setting: 50

Unit: %

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 100

Post-trigger recording

8435.4 Data repetition rate

Factory setting: 1000

Unit: ms

Data type: Uint32

Data length: 1

Resolution: 100

Value range: 0 to 60000

Repetition of data in display mode (0 ms = no repetition).

8435.8 Memory optimization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

Memory optimization

8435.9 Application index

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Default

- 1 = Control technology
- 2 = Data logger
- 3 = ASMOS

Application index

8435.10 Recording channel – index

Factory setting:

- 8364.46 Actual speed in user units
- 8364.44 Speed controller setpoint speed in user units
- 8364.26 Actual position in user units
- 8364.22 Position setpoint in user units
- 8364.29 Lag error in user units
- 8364.160 DC link voltage instantaneous value
- 8334.1 Actual value
- 8335.1 Actual value
- 8332.1 Status bits
- 8365.1 Fault code

Data type: Parameter pointer (DataArray)

Data length: 10

Value range:

- 0.0 No function
- 8332.1 Device status bits
- 8334.1 Digital inputs basic unit
- 8335.1 Digital outputs basic unit
- 8364.22 Position setpoint in user units
- 8364.26 Actual position in user units
- 8364.29 Lag error in user units
- 8364.44 Speed controller setpoint speed in user units
- 8364.46 Actual speed in user units
- 8364.78 Total acceleration in user units
- 8364.90 Relative limited setpoint torque in system units
- 8364.90 Relative actual torque in system units
- 8364.127 Relative apparent current
- 8364.159 Absolute value of the setpoint voltage – rms value
- 8364.160 DC link voltage – instantaneous value
- 8365.1 Fault code
- 8367.10 PO data word
- 8367.11 PO data word
- 8367.12 PO data word
- 8367.13 PO data word
- 8367.14 PO data word
- 8367.15 PO data word

- 8367.16 PO data word
- 8367.17 PO data word
- 8367.18 PO data word
- 8367.19 PO data word
- 8367.20 PO data word
- 8367.21 PO data word
- 8367.22 PO data word
- 8367.23 PO data word
- 8367.24 PO data word
- 8367.25 PO data word
- 8368.4 PI data word
- 8370.1 Status word 1
- 8371.1 Status word 2
- 8372.1 Status word 3
- 8373.1 Control word 1
- 8374.1 Control word 2
- 8375.1 Control word 3
- 8500.2 Current FCB bits

Array index of the recording channel (array index -> recording channel number)

8435.20 Recording channel – offset array

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 10

Resolution: 1

Value range: 0 to 4294967295

Value of the respective recording channel.

8435.30 Recording channel – debug address

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 10

Resolution: 1

Value range: 0 to 4294967295

Debug address of the recording channel, array (array index -> recording channel number).

8435.40 Recording channel – data type

Factory setting:

Data type: Enum (DataArray)

Data length: 10

Value range:

- 1 = UInt8
- 2 = UInt16
- 4 = UInt32
- 260 = Float
- 32769 = Int8
- 32770 = Int16
- **32772 = Int32**

Data type of the respective recording channel.

8435.50 Recording channel – description

Factory setting: 0

Unit:

Data type: UInt8 (DataArray)

Data length: 120

Resolution: 1

Value range: 0 to 255

Descriptions of the recording channel: 12 ASCII characters

8435.100 Trigger connection

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Trigger connection (AND/OR operation of several triggers)

8435.105 Trigger – delay mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = Dead time element
- 2 = Pulse width
- 3 = Pulse stretching

Trigger – delay mode

8435.106 Trigger – delay time

Factory setting: 0

Unit: µs

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Trigger – delay time

8435.110 Trigger type

Factory setting:

- 514
- 0

Unit:

Data type: Uint16 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 65535

Trigger type

8435.120 Trigger source

Factory setting:

- 10
- 0

Unit:

Data type: Uint16 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 10

Trigger source

8435.130 Trigger – additional description parameter 1

Factory setting:

- 65535
- 0

Unit:

Data type: Uint32 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 4294967295

Trigger – additional description parameter 1

8435.140 Trigger – additional description parameter 2

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 4294967295

Trigger – additional description parameter 2

1.1.109 8436 System time

System time

8436.1 System time

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 2

Resolution: 1

Value range: 0 to 4294967295

System time EtherCAT®/SBusPLUS format.

The low part is located at offset 0 of the fill level array, the high part at offset 1 as UINT32. Both parts are read out consistently using the array service.

8436.2 System time low part

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Low part of the system time to allow for scope recording.

8436.3 Time resolution

Factory setting: 1

Unit: ns

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Time resolution of the system time

8436.4 Time resolution in system time

Factory setting: 1

Unit: ns

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Time resolution tick

1.1.110 8437 Braking device diagnostics

These parameters inform about the state of the active braking device (brake or DynaStop®).

8437.2 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Brake/DynaStop® applied
- 1 = Brake/DynaStop® released
- 2 = Brake/DynaStop® motor not blocked

Status bits of the braking device in use (brake/DynaStop®)

1.1.111 8438 Function activation

Function activation

8438.1 Application level – activation key

Data type: String8Bit (fill level array)

Data length: 14

Resolution:

Value range:

Application level – activation key

8438.2 Application level – activated level

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 9

Application level – activated level

8438.3 Application level – required level

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 9

Application level – required level

8438.11 Technology level – activation key

Data type: String8Bit (fill level array)

Data length: 8

Resolution:

Value range:

Technology level – activation key

8438.12 Technology level – activated level

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 9

Technology level – activated level

8438.13 Technology level – required level

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 9

Technology level – required level

8438.20 SerialNumber.Instance

Data type: String8Bit (fill level array)

Data length: 34

Resolution:

Value range:

Serial number of the device extended by the communication instance to being able to obtain a unique identification also for the axis halves of a double axis.

1.1.112 8439 Thermal motor protection

Thermal motor protection of the active drive.

8439.1 Motor temperature – active drive train

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Motor temperature in the active drive train (temperature sensor)

8439.2 Motor utilization – active drive train

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Motor utilization in percent in the active drive train.

If no model is active, this value is set to "0". The error threshold is 100 %.

8439.3 Status bits – active drive train

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Prewarning
- 1 = Prewarning – sensor
- 2 = Prewarning – model

Status bits of the active drive train (copy of index 8442.55 or 8443.55)

8439.50 Thermal motor protection initialized

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Thermal motor protection initialized

1.1.113 8440 Thermal motor protection DT1

8440.1 Thermal motor monitoring used

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No monitoring
- **1 = Monitoring 1**
- 2 = Monitoring 2

Thermal motor monitoring used (TMU)

1.1.114 8441 Thermal motor protection DT2**8441.1 Thermal motor monitoring used**

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No monitoring
- 1 = Monitoring 1
- **2 = Monitoring 2**

Thermal motor monitoring used (TMU)

1.1.115 8442 General data – thermal motor protection 1

General data – thermal motor protection 1

8442.1 Temperature sensor type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No sensor**
- 1 = TF
- 2 = TH
- 3 = KTY
- 4 = PK

Type of temperature sensor of the motor.

8442.2 Connection

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No connection
- **1 = Connector**
- 2 = Terminal
- 3 = Connector option

Connection

8442.3 Sensor temperature error threshold

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 30000

A fault is triggered when this temperature is exceeded.

If this value is "0", no utilization is calculated from the sensor temperature.

8442.4 Prewarning threshold

Factory setting: 95000

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 101000

If a valid utilization exceeds the prewarning threshold, then "Prewarning threshold response" is triggered. The prewarning response refers to the relative utilization of temperature sensor and motor model.

8442.5 Prewarning threshold response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- **1 = Warning**
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Programs the response of the drive to an exceeded prewarning threshold.

8442.6 Evaluation sequence control

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = OK**
- 1 = Start of evaluation
- 11 = Signal – KTY sensor not connected
- 12 = Signal – motor overtemperature or TF/TH sensor not connected
- 13 = Signal – PK sensor not connected

Evaluation sequence control

8442.7 Enable sensor evaluation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Sensor evaluation enable

8442.51 Temperature sensor temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Measured temperature of the temperature sensor of the motor.

8442.52 Motor model temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Calculated motor temperature depending on the motor model.

8442.53 Temperature sensor evaluation

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Utilization of the motor temperature sensor in percent.

The following settings can be made:

- 0%: The temperature sensor of the motor is below 40 °C.
- 101%: Switch-off temperature reached.

8442.54 Motor model utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Utilization of the motor in percent.

If no model is active, this value is set to "0". The error threshold is 100 %.

8442.55 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Prewarning
- 1 = Prewarning – sensor
- 2 = Prewarning – model

Status bits

8442.100 - 8442.103 Array size 4 Backup due to device reset

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 4

Resolution: 1

Value range: 0 to 4294967295

Backup due to device reset

1.1.116 8443 General data – thermal motor protection 2

General data – thermal motor protection 2

8443.1 Temperature sensor type

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No sensor**
- 1 = TF
- 2 = TH
- 3 = KTY
- 4 = PK

Type of temperature sensor of the motor.

8443.2 Connection

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No connection
- **1 = Connector**
- 2 = Terminal
- 3 = Connector option

Connection

8443.3 Sensor temperature error threshold

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 30000

A fault is triggered when this temperature is exceeded.

If this value is "0", no utilization is calculated from the sensor temperature.

8443.4 Prewarning threshold

Factory setting: 95000

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 101000

If a valid utilization exceeds the prewarning threshold, then "Prewarning threshold response" is triggered. The prewarning response refers to the relative utilization of temperature sensor and motor model.

8443.5 Prewarning threshold response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- **1 = Warning**
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Programs the response of the drive to an exceeded prewarning threshold.

8443.6 Evaluation sequence control

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = OK**
- 1 = Start of evaluation
- 11 = Signal – KTY sensor not connected
- 12 = Signal – motor overtemperature or TF/TH sensor not connected
- 13 = Signal – PK sensor not connected

Evaluation sequence control

8443.7 Enable sensor evaluation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Sensor evaluation enable

8443.51 Temperature sensor temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Measured temperature of the temperature sensor of the motor.

8443.52 Motor model temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Calculated motor temperature depending on the motor model.

8443.53 Temperature sensor evaluation

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Utilization of the motor temperature sensor in percent.

The following settings can be made:

- 0 %: The temperature sensor of the motor is below 40 °C.
- 101%: Switch-off temperature reached.

8443.54 Motor model utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Utilization of the motor in percent.

If no model is active, this value is set to "0". The error threshold is 100 %.

8443.55 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Prewarning
- 1 = Prewarning – sensor
- 2 = Prewarning – model

Status bits

8443.100 - 8443.103 Array size 4 Backup due to device reset

Factory setting: 0

Unit:

Data type: UInt32 (array)

Data length: 4

Resolution: 1

Value range: 0 to 4294967295

Backup due to device reset.

1.1.117 8444 TMU model 1 for synchronous motor

8444.1 Version

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version of the model

8444.2 Model temperature error threshold

Factory setting: 4100

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 30000

Motor-dependent switch-off temperature of the model.

8444.3 Stator resistance

Factory setting: -1

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Value range: -1 to 1000

Stator resistance (phase value in star connection at 20 °C)

8444.4 Heat transfer resistance winding/iron – R_thWE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thWE (heat transfer resistance winding, iron)

8444.5 Heat transfer resistance iron/ambient – R_thEU

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thEU (heat transfer resistance iron, ambient)

8444.6 Heat transfer resistance windings U and V to KTY – R_thuK

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thuK (heat transfer resistance winding U to KTY, also applies to winding V to KTY)

8444.7 Heat transfer resistance KTY/iron – R_thKE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thKE (heat transfer resistance KTY, iron)

8444.8 Thermal capacitance windings U, V, W – C_thW

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

C_thW (thermal capacitance winding u, v, w)

8444.9 Thermal capacitance iron – C_thE

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

C_thE (thermal capacitance iron)

8444.10 Thermal capacitance KTY – C_thK

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

C_thK (thermal capacitance KTY)

8444.11 Power loss depending on speed – p_vfe0

Factory setting: 0

Unit: J

Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
p_vfe0 (power loss depending on speed)

8444.12 Power loss depending on square Speed – p_vfeq

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
p_vfeq (power loss depending on square speed)

8444.13 Luenberger coefficient L1

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Luenberger coefficient L1

8444.14 Luenberger coefficient L2 = L3

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Luenberger coefficient L2 = L3

8444.15 Luenberger coefficient L4

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Luenberger coefficient L4

8444.16 Luenberger coefficient L5

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Luenberger coefficient L5

1.1.118 8445 TMU model 2 for synchronous motor**8445.1 Version**

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Version of the model

8445.2 Model temperature error threshold

Factory setting: 4100

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 30000

Motor-dependent switch-off temperature of the model

8445.3 Stator resistance

Factory setting: -1

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Value range: -1 to 1000

Stator resistance (phase value in star connection at 20 °C)

8445.4 Heat transfer resistance winding/iron – R_thWE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thWE (heat transfer resistance winding, iron)

8445.5 Heat transfer resistance iron/ambient – R_thEU

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thEU (heat transfer resistance iron, ambient)

8445.6 Heat transfer resistance windings U and V to KTY – R_thuK

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thuK (heat transfer resistance winding U to KTY, also applies to winding V to KTY)

8445.7 Heat transfer resistance KTY/iron – R_thKE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

R_thKE (heat transfer resistance KTY, iron)

8445.8 Thermal capacitance windings U, V, W – C_thW

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

C_thW (thermal capacitance winding u, v, w)

8445.9 Thermal capacitance iron – C_thE

Factory setting: 0

Unit: J/K

Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
C_thE (thermal capacitance iron)

8445.10 Thermal capacitance KTY – C_thK

Factory setting: 0
Unit: J/K
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
C_thK (thermal capacitance KTY)

8445.11 Power loss depending on speed – p_vfe0

Factory setting: 0
Unit: J
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
p_vfe0 (power loss depending on speed)

8445.12 Power loss depending on square Speed – p_vfeq

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
p_vfeq (power loss depending on square speed)

8445.13 Luenberger coefficient L1

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Value range: -3.402823E+38 to Float32Max
Luenberger coefficient L1

8445.14 Luenberger coefficient L2 = L3

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Luenberger coefficient L2 = L3

8445.15 Luenberger coefficient L4

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Luenberger coefficient L4

8445.16 Luenberger coefficient L5

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Luenberger coefficient L5

1.1.119 8446 I2t model for TMU 1**8446.1 Nominal current**

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Nominal current (rms)

8446.2 Time constant

Factory setting: 0

Unit: s

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Time constant

8446.10 - 8446.17 Array size 8 Relative current characteristic

Factory setting: 0

Unit:

Data type: Float32 (Array)

Data length: 8

Resolution: -

Value range: -3.402823E+38 to Float32Max

Relative current characteristic

8446.20 - 8446.27 Array size 8 Stator frequency characteristic

Factory setting: 0

Unit: Hz

Data type: Float32 (Array)

Data length: 8

Resolution: -

Value range: -3.402823E+38 to Float32Max

Stator frequency characteristic

1.1.120 8447 I2t model for TMU 2

8447.1 Nominal current

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 10000

Nominal current (rms)

8447.2 Time constant

Factory setting: 0

Unit: s

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Time constant

8447.10 - 8447.17 Array size 8 Relative current characteristic

Factory setting: 0

Unit:

Data type: Float32 (Array)

Data length: 8

Resolution: -

Value range: -3.402823E+38 to Float32Max

Relative current characteristic

8447.20 - 8447.27 Array size 8 Stator frequency characteristic

Factory setting: 0

Unit: Hz

Data type: Float32 (Array)

Data length: 8

Resolution: -

Value range: -3.402823E+38 to Float32Max

Stator frequency characteristic

1.1.121 8448 Ex protection function category 2 – data DT1

The inverter allows for implementing monitoring for category 2.

This function can be activated in any operating mode with a motor (no group operation).

Five frequency points are defined for monitoring. A maximum current is assigned to each frequency point. The current must be permanently below the characteristic defined by the points. This area can be left briefly (lxt monitoring).

The inverter monitors the combination of motor and inverter for $IN_{inverter} \leq 2 \times IN_{motor}$. If the threshold is exceeded, fault 52.3 = "Error messages of the Ex protection function category 2". "Inverter too large" will be issued.

For SEW-EURODRIVE motors, the frequency points are loaded at startup. For third-party motors, these points must be entered manually.

The following conditions must be met:

- Frequency A smaller than frequency B smaller than frequency C smaller than frequency D smaller than frequency E
- Current limit A smaller than current limit B smaller than current limit C

Else fault 52.4 = "Error messages of the Ex protection function category 2". "Parameterization of the current limit characteristic" will be issued.

8448.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**

Activates frequency-dependent current monitoring.

8448.2 Frequency point A

Factory setting: 5000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 5000 to 60000

Minimum operating frequency f_A . The duration of operation with operating frequency A is 60 seconds regardless of the current value. Once this time has elapsed, the inverter switches off and issues fault 52.5 = "Error messages of the ex protection function category 2". Time duration exceeded $f < 5$ Hz".

8448.3 Current point A

Factory setting: 50000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 150000

Current limitation that is permitted with operating frequency f_A . There is a linear gradient between current limits A and B.

8448.4 Frequency point B

Factory setting: 10000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 5000 to 104000

Operating frequency f_B

8448.5 Current point B

Factory setting: 80000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 150000

Current limitation that is permitted with operating frequency f_B . There is a linear gradient between current limits B and C.

8448.6 Frequency point C

Factory setting: 25000

Unit: mHz

Data type: Int32
 Data length: 1
 Resolution: 1000
 Value range: 5000 to 104000
 Operating frequency fC

8448.7 Current point C

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1000
 Value range: 0 to 150000
 Current limitation that is permitted with operating frequency fC. There is a linear gradient between current limits C and D.

8448.8 Frequency point D

Factory setting: 50000
 Unit: mHz
 Data type: Int32
 Data length: 1
 Resolution: 1000
 Value range: 5000 to 104000
 Operating frequency fD

8448.9 Current point D

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1000
 Value range: 0 to 150000
 Current limitation that is permitted with operating frequency fD. There is a linear gradient between current limits D and E.

8448.10 Frequency point E

Factory setting: 87000
 Unit: mHz
 Data type: Int32
 Data length: 1
 Resolution: 1000
 Value range: 5000 to 104000
 Operating frequency fE

8448.11 Current point E

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 150000

Current limitation that is permitted with operating frequency fE.

8448.15 Motor assignment

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Motor 1**
- 1 = Motor 2

Specifies which motor model is calculated in drive train 1.

The following settings can be made:

- Motor 1: The motor of drive train 1 is monitored using the settings made in parameter group "Ex protection function category 2" (index 8848).
- Motor 2: The motor of drive train 1 is monitored using the settings made in parameter group "Ex protection function category 2" (index 8849).

8448.16 Motor started up

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Motor started up

8448.20 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Current limit of Ex protection function category 2 – active

If the motor is operated too long outside the operating range permitted for continuous duty, the current will be limited to the permitted value. Bit 0 indicates this limitation.

1.1.122 8449 Ex protection function category 2 – data DT2

The inverter allows for implementing monitoring for category 2.

This function can be activated in any operating mode with a motor (no group operation).

Five frequency points are defined for monitoring. A maximum current is assigned to each frequency point. The current must be permanently below the characteristic defined by the points. This area can be left briefly (lxt monitoring).

The inverter monitors the combination of motor and inverter for $IN_{inverter} \leq 2 \times IN_{motor}$. If the threshold is exceeded, fault 52.3 = "Error messages of the Ex protection function category 2". "Inverter too large" will be issued.

For SEW-EURODRIVE motors, the frequency points are loaded at startup. For third-party motors, these points must be entered manually.

The following conditions must be met:

- Frequency A smaller than frequency B smaller than frequency C smaller than frequency D smaller than frequency E
- Current limit A smaller than current limit B smaller than current limit C

Else fault 52.4 = "Error messages of the Ex protection function category 2". "Parameterization of the current limit characteristic" will be issued.

8449.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**

Activates frequency-dependent current monitoring.

8449.2 Frequency point A

Factory setting: 5000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 5000 to 60000

Minimum operating frequency f_A . The duration of operation with operating frequency A is 60 seconds regardless of the current value. Once this time has elapsed, the inverter switches off and issues fault 52.5 = "Error messages of the ex protection function category 2". Time duration exceeded $f < 5 \text{ Hz}$ ".

8449.3 Current point A

Factory setting: 50000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 150000

Current limitation that is permitted with operating frequency f_A . There is a linear gradient between current limits A and B.

8449.4 Frequency point B

Factory setting: 10000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 5000 to 104000

Operating frequency f_B

8449.5 Current point B

Factory setting: 80000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 150000

Current limitation that is permitted with operating frequency f_B . There is a linear gradient between current limits B and C.

8449.6 Frequency point C

Factory setting: 25000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 5000 to 104000

Operating frequency f_C

8449.7 Current point C

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 0 to 150000

Current limitation that is permitted with operating frequency f_C . There is a linear gradient between current limits C and D.

8449.8 Frequency point D

Factory setting: 50000

Unit: mHz
Data type: Int32
Data length: 1
Resolution: 1000
Value range: 5000 to 104000
Operating frequency fD

8449.9 Current point D

Factory setting: 100000
Unit: 1E-03%
Data type: Int32
Data length: 1
Resolution: 1000
Value range: 0 to 150000
Current limitation that is permitted with operating frequency fD. There is a linear gradient between current limits D and E.

8449.10 Frequency point E

Factory setting: 87000
Unit: mHz
Data type: Int32
Data length: 1
Resolution: 1000
Value range: 5000 to 104000
Operating frequency fE

8449.11 Current point E

Factory setting: 100000
Unit: 1E-03%
Data type: Int32
Data length: 1
Resolution: 1000
Value range: 0 to 150000
Current limitation that is permitted with operating frequency fE.

8449.15 Motor assignment

Factory setting:
Data type: Enum
Data length: 1
Value range:

- **0 = Motor 1**
- 1 = Motor 2

Specifies which motor model is to be calculated in drive train 2.

The following settings can be made:

- Motor 1: The motor of drive train 2 is monitored using the settings made in parameter group "Ex protection function category 2" (index 8848).
- Motor 1: The motor of drive train 2 is monitored using the settings made in parameter group "Ex protection function category 2" (index 8849).

8449.16 Motor started up

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Motor started up

8449.20 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Current limit of Ex protection function category 2 – active

If the motor is operated too long outside the operating range permitted for continuous duty, the current will be limited to the permitted value. Bit 0 indicates this limitation.

1.1.123 8450 Ex protection function category 2

Ex protection function category 2

8450.1 Status bits – current drive train

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Current limit of Ex protection function category 2 – active

Status bits of the current drive train

1.1.124 8455 EtherCAT®/SBusPLUS

EtherCAT®/SBusPLUS

8455.1 Baud rate

Factory setting: 0

Unit: Bd

Data type: Uint32

Data length: 1

Resolution: 1
Value range: 0 to 4294967295
Current EtherCAT®/SBusPLUS baud rate

8455.2 Address

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Current EtherCAT®/SBusPLUS address

8455.3 Timeout

Factory setting: 500
Unit: ms
Data type: Int32
Data length: 1
Resolution: 10
Value range: 0 to 650000
EtherCAT®/SBusPLUS timeout time

8455.4 Device identification

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 65535
Device identification can be set using rotary switches S1 and S2 on the front of the device

8455.5 Status

Factory setting:
Data type: Enum
Data length: 1
Value range:

- **0 = Startup**
- 1 = Not connected
- 2 = Connected
- 3 = Timeout

Status

1.1.125 8456 EtherCAT®/SBusPLUS diagnostics

EtherCAT®/SBusPLUS diagnostics

8456.1 Port A – Invalid frame counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 255

Port A – Invalid frame counter

8456.2 Port A – Rx error counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 255

Port A – Rx error counter

8456.3 Port B – Invalid frame counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 255

Port B – Invalid frame counter

8456.4 Port B – Rx error counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 255

Port B – Rx error counter

8456.5 Port A – Forwarded error counter

Factory setting: 0

Unit:

Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
Port A – Forwarded error counter

8456.6 Port B – Forwarded error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
Port B – Forwarded error counter

8456.7 Processing unit error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
Processing unit error counter

8456.8 Port A – Lost link count

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
Port A – Lost link count

8456.9 Port B – Lost link count

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
Port B – Lost link count

8456.10 Slave controller revision

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
Slave controller revision

8456.11 Slave controller build

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 65535
Slave controller build

8456.12 AI control

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
AI control

8456.13 AI status

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
AI status

8456.14 AI status code

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1

Value range: 0 to 4294967295

AI status code

8456.18 EEPROM status

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

EEPROM status

8456.19 "RUN" status LED

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 20

Resolution: 1

Value range: 0 to 4294967295

Reads the "RUN" status LED.

8456.20 "ERROR" status LED

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 20

Resolution: 1

Value range: 0 to 4294967295

Reads the "ERROR" status LED.

8456.21 1 ms task counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

1 ms task counter

8456.22 Current cycle time of main task

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1
Resolution: 1
Value range: 0 to 4294967295
Current cycle time of main task

8456.23 Maximum cycle time of main task

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 65535
Maximum cycle time of main task

8456.24 PDI error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 255
PDI error counter

8456.26 EEPROM vendor ID

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
EEPROM vendor ID

8456.27 EEPROM product code

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 4294967295
EEPROM product code

8456.28 EEPROM revision number

Factory setting: 0

Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 EEPROM revision number

8456.29 EEPROM station alias

Factory setting: 0
 Unit:
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 65535
 EEPROM station alias

1.1.126 8480 FPGA registers

FPGA register

8480.54 Power supply module – FPGA part number

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 FPGA part number of the power supply module

8480.57 Power supply module – FPGA compatibility ID

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 Compatibility ID of the FPGA of the power supply module

1.1.127 8495 Test module standby mode

Test module standby mode.

8495.1 Standby mode test flags

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DIIn 24 V
- 1 = DOut 24 V
- 2 = EncDriveSafety12 V
- 3 = EncResolverOne 24 V
- 4 = EncResolverTwo 24 V
- 5 = STOManCtrlDev 24 V
- 6 = NvSnt
- 7 = HvSnt

Standby mode test flags

1.1.128 8500 FCB selection

FCB selection

8500.1 Current FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

Currently active FCB (Function Control Block)

8500.2 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = FCB 00 Default
- 1 = FCB 01 Output stage inhibit
- 2 = FCB 02 Stop default
- 4 = FCB 04 Manual mode
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 22 = FCB 22 Output stage test
- 23 = FCB 23 Brake test safety card
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

Status bits

8500.3 Activate FCB

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = FCB 00 Default (-> FCB 02)**
- 1 = FCB 01 Output stage inhibit
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control

- 10 = FCB 10 Interpolated position control
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

Activate FCB.

8500.4 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = FCB 00 Default
- 1 = FCB 01 Output stage inhibit
- 5 = FCB 05 Speed control
- 6 = FCB 06 Interpolated speed control
- 7 = FCB 07 Torque control
- 8 = FCB 08 Interpolated torque control
- 9 = FCB 09 Position control
- 10 = FCB 10 Interpolated position control
- 12 = FCB 12 Reference travel
- 13 = FCB 13 Stop at application limits
- 14 = FCB 14 Emergency stop
- 18 = FCB 18 Rotor position identification
- 19 = FCB 19 Position hold control
- 20 = FCB 20 Jog mode
- 21 = FCB 21 Brake test
- 25 = FCB 25 Motor parameter measurement
- 26 = FCB 26 Stop at user-defined limits

Control bits

8500.5 Active FCB source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = DI 00

- **1 = Default FCB**
- 2 = Control words or DI 01 – DI 0x
- 3 = Activation via parameter
- 4 = Manual mode
- 5 = Drive train changeover
- 6 = Fixed setpoint processing
- 7 = Fault response
- 8 = Power supply monitoring
- 9 = Safety card
- 10 = Prepare restart
- 11 = State control
- 12 = Test manager

Function unit of the firmware that requested the current FCB.

1.1.129 8501 FCB 01 output stage inhibit

Activating FCB 01 immediately interrupts the power supply of the motor and applies the brake. If no brake is installed, the motor coasts to a stop.

8501.1 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Release brake/DynaStop® with inhibited output stage

Control bits

8501.2 Release brake/DynaStop® with FCB 01 – enable

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The following settings can be made:

– Yes: The control bit is evaluated. If FCB 01 is active, an edge from 0 to 1 releases the brake/DynaStop®. An edge from 1 to 0 applies the brake.

– No: The control bit is not evaluated. If the parameter is set to "No" when the output stage is inhibited, the brake/DynaStop® relay will apply.

8501.3 Apply brake/DynaStop® in STO state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = ON

The following settings can be made:

- Off: The state of the brake/DynaStop® relay is not changed in STO state (default setting).
- On: The brake/DynaStop® relay is applied in STO state. If the parameter is set to "On" when STO is active, the brake/DynaStop® relay will apply.

1.1.130 8504 FCB 04 manual mode

FCB 04 cannot be selected and activated directly using control words.

FCB 04 is selected and activated at startup using the "manual mode" function of the MOVISUITE® engineering software. Manual mode is used at startup or in setup mode without higher-level controller.

8504.1 Function status

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Function status

8504.2 Supported functions

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Speed controlled manual mode
- 1 = Position controlled manual mode
- 2 = Load cycling
- 3 = Cycle mode
- 4 = Emergency mode with defective external encoder
- 16 = Inhibit output stage
- 17 = Activation brake/DynaStop®
- 18 = Reference travel

Bit coding of the supported manual mode functions

8504.3 Timeout response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 2 = Application stop + output stage inhibit
- **3 = Emergency stop + output stage inhibit**
- 4 = Output stage inhibit

Response to a bus timeout in manual mode.

8504.4 Evaluation of digital inputs

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Specifies whether the programmable functions of digital inputs is taken account of in manual mode.

The following settings can be made:

- On: All programmable digital inputs (such as limit switches) are taken into account except for FCB activation.
- Off: All programmable digital inputs are ignored. The non-programmable digital input DI 00 must be set.

8504.5 Evaluation of control words

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Specifies whether the programmable functions of control words is taken account of in manual mode.

The following settings can be made:

- On: All control word functions (such as limit switches) are taken into account except for FCB activation.
- Off: All control word functions are ignored.

8504.6 Jerk limitation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- **1 = ON**

Activates jerk limitation in manual mode. The jerk time application limit (index 8367.14) is used.

8504.7 Control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Speed controlled manual mode
- 1 = Position controlled manual mode
- 2 = Load cycling
- 3 = Cycle mode
- 4 = Emergency mode with defective external encoder
- 16 = Inhibit output stage
- 17 = Activation brake/DynaStop®
- 18 = Reference travel

Activates the manual mode functions selected in the user interface. If no function is selected, the drive is at standstill in FCB 02 "Stop".

Each time the control word is sent, the timeout counter of the manual mode session is reset in the server (actuator).

8504.8 Setpoint speed DT1

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -3600000000 to 3600000000

Specifies the setpoint speed in user units in drive train 1.

This parameter is used in all manual mode functions.

Unlike the other manual mode functions positioning, load cycling, and cycle mode, the setpoint is signed in speed-controlled manual mode. If a negative value is set in speed-controlled manual mode, and then manual mode with positioning is selected, then the setpoint speed is overwritten with the value at the time when manual mode with positioning is initialized.

8504.9 Setpoint acceleration DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Specifies the setpoint acceleration in user units in drive train 1.

This parameter is used in all manual mode functions.

8504.10 Setpoint position DT1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the setpoint position in user units in drive train 1.

This parameter is used in the "positioning" manual mode function.

8504.11 Load cycling – position 1 DT1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies load cycling position 1 in user units in drive train 1.

This parameter is used in the "load cycling" manual mode function. This setting is only relevant when the actuator supports load cycling.

8504.12 Load cycling – position 2 DT1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies load cycling position 2 in user units in drive train 1.

This parameter is used in the "load cycling" manual mode function. This setting is only relevant when the actuator supports load cycling.

8504.13 Cycle function – travel distance DT1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the travel distance in user units in drive train 1.

This parameter is used in the "cycle mode" manual mode function.

8504.14 Cycle idle time

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 500 to 3000

Idle time once a target position has been reached in active load cycling or active cycle function.

The following settings can be made:

- For the load cycling function: Idle time at positions 1 and 2 before moving to the respective other position.
- For the cycle function: Idle time between two cycles.

8504.28 Setpoint speed DT2

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Specifies the setpoint speed in user units in drive train 2.

This parameter is used in all manual mode functions.

Unlike the other manual mode functions positioning, load cycling, and cycle mode, the setpoint is signed in speed-controlled manual mode. If a negative value is set in speed-controlled manual mode, and then manual mode with positioning is selected, then the setpoint speed is overwritten with the value at the time when manual mode with positioning is initialized.

8504.29 Setpoint acceleration DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Specifies the setpoint acceleration in user units in drive train 2.

This parameter is used in all manual mode functions.

8504.30 Setpoint position DT2

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the setpoint position in user units in drive train 2.

This parameter is used in the "positioning" manual mode function.

8504.31 Load cycling – position 1 DT2

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies load cycling position 1 in user units in drive train 2.

This parameter is used in the "load cycling" manual mode function. This setting is only relevant when the actuator supports load cycling.

8504.32 Load cycling – position 2 DT2

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies load cycling position 2 in user units in drive train 2.

This parameter is used in the "load cycling" manual mode function. This setting is only relevant when the actuator supports load cycling.

8504.33 Cycle function – travel distance DT2

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Specifies the travel distance in user units in drive train 2.

This parameter is used in the "cycle mode" manual mode function.

1.1.131 8506 FCB 06 Interpolated speed control

FCB 06 is used for cyclic speed setpoint input from from a higher-level controller.

In multi-axis applications, the higher-level controller calculates a path profile for several drive axes. The axis receives only setpoints (position, speed, torque, torque limits, precontrol values, mass moment of inertia) which it has to follow. The axis limits the setpoints using the application limits. The course of the path curve profile is controlled by the controller.

The cycle in which the controller sends the setpoints to the axes does not usually correspond to the setpoint processing cycle of the axis (500 µs). If Axis were to "see" the same controller setpoint for several cycles, a step-shaped actual speed value would result. To prevent this from happening, the axis interpolates intermediate values. To do so, the setpoint cycle of the controller has to be known. The axis can be set to different cycle times of the higher-level controller.

8506.1 Precontrol values via setpoint buffer

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The user additionally provides the acceleration precontrol value for the current speed setpoint. This allows for fast correction as precontrol knows the setpoint so it need not be calculated from previous values.

For this reason the precontrol value must exactly match the change of the setpoint in the path curve, and must be transferred with the same process data cycle as the setpoint.

The following settings can be made:

- Yes: The precontrol values are adapted from acceleration precontrol (index 8376.34).
- No: The precontrol values are calculated based on the change of the speed setpoint.

8506.2 Mass moment of inertia via setpoint buffer

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The user provides the mass moment of inertia and the torque precontrol in the setpoint buffer.

This setting can be used if the track is subject to a position-dependent mass moment of inertia (e.g. toggle mechanism) but the controller still has to be set stiffly

The following settings can be made:

- Yes: The mass moment of inertia and torque precontrol are read from the respective setpoint buffer (index 8376.44 and 8376.54).
- No: The mass moment of inertia, which has been taken into operation in the active drive train, is used. Torque precontrol is disabled.

8506.3 External position controller setpoint via setpoint buffer

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

The following settings can be made:

- Yes: The correcting value of a higher-level position controller is switched to the speed controller via "correcting value of external position controller" (index 8376.61).
- No: No additional correcting value is considered in the speed controller.

1.1.132 8509 FCB 09 Position control

FCB 09 is used for positioning to make it possible to use a position profile for reaching the target position. This position profile is parameterized by the profile generator.

The application inverter additionally provides the following positioning modes:

- Absolute positioning:

The position setpoint in user units is interpreted as an absolute target, is converted into system units, and is executed.

The travel range in system units is $\pm (2^{31} - 2)$. A fault is issued if this travel range is exceeded after the conversion.

- Relative positioning:

The position setpoint in user units is interpreted as offset to the latest setpoint and is added to the last setpoint after conversion into system units.

If the calculated target in system units is outside the travel range of $\pm (2^{32} - 2)$, an error is issued.

- Modulo in positive direction with absolute position input:

The position setpoint in user units is interpreted as the absolute position. It must be within the modulo range of the active drive:

Lower limit = "Modulo underflow"

Upper limit = "Modulo overflow"

If the position setpoint is outside this range, an error is issued. The drive always turns in positive direction to reach the target.

- Modulo in negative direction with absolute position input:

The position setpoint in user units is interpreted as the absolute position. It must be within the modulo range of the active drive:

Lower limit = "Modulo underflow"

Upper limit = "Modulo overflow"

If the position setpoint is outside this range, an error is issued. The drive always turns in negative direction to reach the new target.

- Modulo with shortest distance with absolute position input:

The position setpoint in user units is interpreted as the absolute position. It must be within the modulo range of the active drive:

Lower limit = "Modulo underflow"

Upper limit = "Modulo overflow"

If the position setpoint is outside this range, an error is issued.

The direction of rotation of the drive results from the last setpoint position (= current actual position after activation without "in position" signal) and the current setpoint position. From here, the shortest distance is determined and the direction of rotation for positioning is specified accordingly.

8509.1 Operating mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Absolute**
- 1 = Relative
- 2 = Modulo absolute – positive direction
- 3 = Modulo absolute – negative direction
- 4 = Modulo absolute – shortest distance
- 5 = Absolute without referencing

The following settings can be made:

– Absolute: The target position setpoint in user units is interpreted as absolute target and is converted into system units. The range of values in system units is -231 to +231-1. If the target position setpoint is outside this range, error 19.2 "Process data error" is issued. "Position setpoint violation" is generated and the drive is stopped.

– Relative: The target position setpoint in user units is considered as offset to the last saved target position value, is converted into system units, and is added to the last target position in system units. The range of values for this offset position in system units is -2^{31} to $+2^{31}-1$.

– Positioning modulo absolute – positive direction: The target position setpoint in user units is interpreted as absolute position and must be within the modulo range specified by the user parameters for modulo underflow and modulo overflow. If the target position setpoint is outside this range, error 19.2 "Process data error" is issued. "Position setpoint violation" is generated and the drive is stopped. The drive always turns in a positive direction to reach the target position, which means the actual position increases during positioning.

– Positioning modulo absolute – negative direction: The target position setpoint in user units is interpreted as absolute position and must be within the modulo range specified by the user parameters for modulo underflow and modulo overflow. If the target position setpoint is outside this range, error 19.2 "Process data error". "Position setpoint violation" is generated and the drive is stopped. The drive always turns in negative direction to reach the target position, which means the actual position decreases during positioning.

– Positioning modulo absolute – shortest distance: The target position setpoint in user units is interpreted as absolute position and must be within the modulo range specified by the user parameters for modulo underflow and modulo overflow. If the target position setpoint is outside this range, error 19.2 "Process data error" is issued. "Position setpoint violation" is generated and the drive is stopped.

– Absolute without referencing: The target position setpoint in user units is interpreted as absolute target and is converted into system units. The range of values in system units is -231 to +231-1. No checking whether the drive has been referenced.

8509.2 Use "feed enable" control bits

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- **1 = Yes**

Feed enable allows the drive to move. When feed enable is revoked, the ongoing travel process is aborted, and the drive moves up to speed "0" using the limit values set for deceleration and jerk time. The drive then enters position control.

The original positioning task is maintained.

The following settings can be made:

- Yes: Feed enable is used.
- No: Feed enable is not used.

8509.3 Use "accept position" control bits

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Specifies that positioning is started by the FCB under certain conditions only. The user parameter indicates whether a control signal "Accept position control bit" of the digital inputs or a control word of the process output data should accept the current position setpoint and start positioning or not.

The following settings can be made:

- Yes: A new travel job is only started and a new target position calculated when a rising edge of the control signal is detected. The position setpoint may change arbitrarily often between the edges even during ongoing positioning as this does not affect the target position.
- No: A new travel job is started and a new target position is calculated as soon as the position setpoint changes. If positioning is performed relative to the previous position, then repeated positioning with the same relative target position is not possible because the provided target position has not changed during the repeated positioning process.

8509.4 Lag error window DT1

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Specifies from which lag error the drive in drive train 1 signals a fault.

8509.5 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Feed enable
- 1 = Accept position
- 2 = Operating mode bit 0
- 3 = Operating mode bit 1
- 4 = Operating mode bit 2

Control bits

8509.7 Limited jerk time

Factory setting: 0

Unit: ms

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Limited jerk time

8509.8 Use only "maximum positive speed" parameter

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The FCB uses the value from "ProfileValueBuffer.Maximum positive speed" (index 8377.4) also as maximum negative speed. This means that only one channel of the profile value buffer has to be used. This setting is used for the general SEW process data profile.

8509.9 Use "operating mode" control bits

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The following settings can be made:

– Yes: The operating mode is set up of the setting "operating mode bit 0" – "operating mode bit 2" of the control bit (index 8509.5). The meaning of the numerical value corresponds to the enumeration in parameter "operating mode" (index 8509.1). The saved value of the parameter "operating mode" (index 8509.1) is overwritten in the RAM.

– No: The operating mode is set using the parameter "operating mode" (index 8509.1). The "operating mode bit x" control bits do not have any effect.

8509.10 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 2 = Operating mode bit 0
- 3 = Operating mode bit 1
- 4 = Operating mode bit 2

Status bits

8509.14 Lag error window DT2

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Specifies from which lag error the drive in drive train 2 signals a fault.

1.1.133 8510 FCB 10 Interpolated position control

FCB 10 is used for cyclic position setpoint input from a higher-level controller.

In multi-axis applications, the higher-level controller calculates a path profile for several drive axes. The axis receives only setpoints (position, speed, torque, torque limits, precontrol values, mass moment of inertia) which it has to follow. The axis limits the setpoints using the application limits. The course of the path curve profile is controlled by the controller.

The cycle in which the controller sends the setpoints to the axes does not usually correspond to the setpoint processing cycle of the axis (500 µs). If the axis were to "see" the same controller setpoint for several cycles, a step-shaped actual position value would result. To prevent this from happening, the axis interpolates intermediate values. To do so, the setpoint cycle of the controller has to be known. The axis can be set to different cycle times of the higher-level controller.

8510.1 Precontrol values via setpoint buffer

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The user additionally provides the acceleration precontrol value for the current speed setpoint. This allows for fast correction as precontrol knows the setpoint so it need not be calculated from previous values.

For this reason the precontrol value must exactly match the change of the setpoint in the path curve, and must be transferred with the same process data cycle as the setpoint.

The following settings can be made:

- Yes: The precontrol values are adapted from acceleration precontrol (index 8376.34).
- No: The precontrol values are calculated based on the change of the speed setpoint.

8510.2 Mass moment of inertia via setpoint buffer

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The user provides the mass moment of inertia and the torque precontrol in the setpoint buffer.

This setting can be used if the track is subject to a position-dependent mass moment of inertia (e.g. toggle mechanism) but the controller still has to be set stiffly

The following settings can be made:

- Yes: The mass moment of inertia and torque precontrol are read from the respective setpoint buffer (index 8376.44 and 8376.54).
- No: The mass moment of inertia, which has been taken into operation in the active drive train, is used. Torque precontrol is disabled.

8510.3 Mean value filter time

Factory setting: 500

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Value range: 500 to 30000

Filter time constant for interpolating position control.

8510.4 Lag error window DT1

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Specifies from which lag error the drive in drive train 1 signals a fault.

8510.14 Lag error window DT2

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Specifies from which lag error the drive in drive train 2 signals a fault.

1.1.134 8512 FCB 12 Reference travel

To perform positioning operations, a drive has to be referenced to a defined start or reference position within the permitted travel distance.

From this reference position, positions such as the machine zero can be specified and approached. When using position encoders without absolute position detection, referencing is mandatory with each restart of the drive. When using absolute encoders, the absolute position is immediately known when starting the system. An absolute encoder must be referenced nevertheless to compare the indicated position with the reference system of the machinery. Several reference travel types are available for referencing and for finding the reference point.

8512.1 Status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Requested
- 1 = Search reference point
- 2 = Go to home position
- 3 = Referencing finished
- **4 = Deactivated/not started**
- 5 = Fault

Status

8512.2 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 2 = Reference cam

Current state of reference travel.

8512.3 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Referencing finished

Status bits of FCB 12 Reference travel

1.1.135 8518 FCB 18 Rotor position identification

For an optimum operation of synchronous AC motors, the exact position information of the rotor is required for closed-loop control. The inverter uses this position information to generate the maximum motor torque.

FCB 18 is required for the commutation detection of rotary and linear synchronous motors.

The drive must be disconnected from the load, which means also from the gear unit. If this is not possible, or only with considerable effort, FCB 25 "Motor parameter measurement" must be used.

8518.1 Procedure

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No method
- **1 = With rotating motor**
- 2 = With stopped motor – hi-res
- 3 = With stopped motor – lo-res

Specifies the method used for rotor position identification.

The following settings can be made:

- No method: – FCB without function.
- With rotating motor: The rotor position is determined while the motor is rotating. This method can be used for all motors.
- With stopped motor: The rotor position is determined while the motor is at standstill. This method can only be used for certain motors from SEW-EURODRIVE.

8518.2 Operating mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Deactivated
- **1 = Manual**
- 2 = Automatic

Mode

8518.3 Storage location

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No storage
- **1 = Inverter**
- 2 = Encoder

Specifies where the determined offset between rotor position and encoder is saved.

The following settings can be made:

- No storage: The value is not stored.
- Inverter: The value is stored in the inverter (index 8518.52).
- Encoder: The value is written to the encoder. This setting can only be used for encoders with memory.

8518.4 Use fixed offset memory

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Use fixed offset memory

8518.5 Fixed offset

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Fixed offset

8518.6 Injected measurement current (with reference to nominal motor current)

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Injected measurement current with reference to nominal motor current

8518.7 Motor settling time

Factory setting: 5000000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1000 to 60000000

Wait time, until the angle monitor has settled.

8518.40 Write control

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Inactive**
- 1 = Write

Write control

8518.50 Write status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Not ready**
- 1 = Ready
- 2 = Saving in progress
- 3 = Saving finished

Write status

8518.51 Encoder adjustment status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Inactive**
- 1 = Current build-up
- 2 = Wait 1
- 3 = Rotate forward
- 4 = Wait 2
- 5 = Rotate reverse
- 6 = Wait 3
- 7 = Finished
- 8 = HW limit switch positive
- 9 = HW limit switch negative
- 10 = Fault

- 11 = Fault – encoder movement in wrong direction
- 12 = Fault – encoder movement too large
- 13 = Fault – encoder movement too small
- 14 = Fault – no encoder movement
- 15 = Fault – HW limit switch too close
- 16 = Fault 1 – HW limit switch
- 17 = Fault 2 – HW limit switch
- 18 = Fault 3 – HW limit switch

Status of encoder adjustment

8518.52 Measured encoder offset

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

Measured encoder offset

8518.53 Write position absolute encoder

Factory setting: 0

Unit: 1/65536 rev

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Write position for absolute encoder

8518.54 Delta Y/Y0

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 100000

Rotor position dependent part of the inverse complex inductance of the motor model

8518.55 Ldq

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 200000

Ratio of series inductance and shunt inductance of the motor model

8518.56 Y0

Factory setting: 0

Unit: 1E-03 A/Vs

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Rotor position dependent part of the inverse complex inductance of the motor model

8518.57 Measurement current

Factory setting: 0

Unit: mA

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Measurement current

8518.58 Measurement current (with reference to nominal motor current)

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 1000000

Measurement current with reference to nominal motor current

8518.59 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Incremental encoder calibrated

Status bits

1.1.136 8520 FCB 20 jog mode

FCB 20 is used for setup mode when a higher-level controller is used.

FCB 20 allows the user to move an axis in positive and negative direction.

Control is performed via control signals that are specified by means of control words, via digital inputs of a higher-level controller or via input terminals.

For startup or for teach mode without higher-level controller, use the manual mode of the MOVISUITE® engineering software, see FCB 04.

8520.1 Speed setpoint via setpoint buffer DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

The following settings can be made:

- Yes: The speed in drive train 1 is specified via setpoint buffer (index 8376.14). Another setpoint cannot be selected.
- No: Speed setpoint 1 (index 8520.2/.3) or speed setpoint 2 (index 8520.4/.5) is used.

8520.2 Speed setpoint 1 – positive DT1

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Positive speed setpoint 1 for jog mode in drive train 1.

8520.3 Speed setpoint 1 – negative DT1

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Negative speed setpoint 1 for jog mode in drive train 1.

8520.4 Speed setpoint 2 – positive DT1

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Positive speed setpoint 2 for jog mode in drive train 1.

8520.5 Speed setpoint 2 – negative DT1

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Negative speed setpoint 2 for jog mode in drive train 1.

8520.6 Profile values via profile value buffer DT1

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

The following settings can be made:

– Yes: The profile values for acceleration, deceleration, and jerk time used for jog mode in drive train 1 are retrieved from the respective setpoint buffer (index 8377.21/.31/.41).

– No: The profile values are retrieved from the parameters of FCB 20 (index 8520.7/.8/.9).

8520.7 Acceleration DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Acceleration setpoint for jog mode in drive train 1.

8520.8 Deceleration DT1

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Deceleration setpoint for jog mode in drive train 1.

8520.9 Jerk time DT1

Factory setting: 0

Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2000
 Jerk time for jog mode in drive train 1.

8520.10 Lag error window DT1

Factory setting: 65536
 Unit: 1/65536 rev user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2147483647
 Maximum lag error for jog mode in drive train 1.

8520.11 Control bits

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:

- 0 = Jog positive
- 1 = Jog negative
- 2 = Speed setpoint 2

 The control bits of these parameters are written by digital inputs and control words.

8520.21 Speed setpoint via setpoint buffer DT2

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **0 = No**
- 1 = Yes

 The following settings can be made:
 – Yes: The speed in drive train 2 is specified via setpoint buffer (index 8376.14). Another setpoint cannot be selected.
 – No: Speed setpoint 1 (index 8520.2/.3) or speed setpoint 2 (index 8520.4/.5) is used.

8520.22 Speed setpoint 1 – positive DT2

Factory setting: 2000000
 Unit: 1E-4/min user unit
 Data type: Int32
 Data length: 1

Resolution: 1

Value range: 0 to 360000000

Positive speed setpoint 1 for jog mode in drive train 2.

8520.23 Speed setpoint 1 – negative DT2

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Negative speed setpoint 1 for jog mode in drive train 2.

8520.24 Speed setpoint 2 – positive DT2

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Positive speed setpoint 2 for jog mode in drive train 2.

8520.25 Speed setpoint 2 – negative DT2

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Negative speed setpoint 2 for jog mode in drive train 2.

8520.26 Profile values via profile value buffer DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

The following settings can be made:

– Yes: The profile values for acceleration, deceleration, and jerk time used for jog mode in drive train 2 are retrieved from the respective setpoint buffer (index 8377.21/.31/.41).

– No: The profile values are retrieved from the parameters of FCB 20 (index 8520.7/.8/.9).

8520.27 Acceleration DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Acceleration setpoint for jog mode in drive train 2.

8520.28 Deceleration DT2

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Deceleration setpoint for jog mode in drive train 2.

8520.29 Jerk time DT2

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Jerk time for jog mode in drive train 2.

8520.30 Lag error window DT2

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Maximum lag error for jog mode in drive train 2.

1.1.137 8521 FCB 21 Brake test

FCB 21 is used to check the braking capability of a brake connected to the motor. A test torque is applied electrically via the motor when the brake is applied.

Even when the brake has passed the brake test, it does not take on any drive safety functions as far as machine safety is concerned in combination with the application inverter.

The brake is only tested in accordance with the set brake test torque. The actual brake breakaway torque is not measured.

A total of 4 test modes is available:

- A higher-level controller provides the setpoints and monitoring function for the test.
- The application inverter performs a check in both directions compared to the set limit torques.
- The application inverter performs a check only in positive direction compared to the set limit torques.
- The application inverter performs a check only in negative direction compared to the set limit torques.

The test torque, test time and the direction of rotation of the test can be set. If a test is not passed, the breakaway torque is documented.

The braking torque is limited by the set "Torque" application limit.

Notice: The application torque must be considered for calculating the test torque, e.g. hoist test "downward".

8521.1 Brake test mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **2 = Bipolar torque**
- 3 = Positive torque
- 4 = Negative torque

The following settings can be made:

- Bipolar torque: The motor specifies a torque in both directions for the brake test.
- Positive torque: The motor specifies a torque in positive direction for the brake test.
- Negative torque: The motor specifies a torque in negative direction for the brake test.

8521.3 Test torque

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Torque the inverter builds up at the applied brake during the brake test. Ideally, the brake holds this torque without slipping.

8521.6 Test time

Factory setting: 1000

Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 100 to 5000
 Duration of the brake test.

8521.8 Status

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:

- 0 = Measurement in progress
- 1 = Measurement interrupted
- 2 = Brake tested – not OK
- 3 = Brake tested – OK

 Status

8521.9 Logged torque

Factory setting: 0
 Unit: 1E-01% nominal motor torque
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 10000
 Torque at which the brake slips during the brake test. If the brake does not slip, the value remains "0".

1.1.138 8523 FCB 23 Brake test safety card

FCB 23 Brake test safety card

8523.1 Request test step

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **1 = Hold**
- 2 = Position
- 3 = Test

 Request test step

8523.2 Test duration

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 500 to 10000

Setting of the duration of the test torque used for the test step.

8523.3 Test torque

Factory setting: 0

Unit: 1E-03 Nm

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000000 to 10000000

The test torque is the torque the inverter builds up during the test at the applied brake. Ideally, the brake holds this torque without slipping.

8523.4 Relative position change

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Relative change of position when activating the "positioning" test step.

8523.5 Maximum positioning speed

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum speed value used in the "Positioning" test step.

8523.6 Maximum positioning acceleration

Factory setting: 0

Unit: 1E-02/(min*s)

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 1000000000

Maximum acceleration/deceleration value used in the "Positioning" test step

8523.7 Jerk time

Factory setting: 0
 Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2000
 Jerk time

8523.8 Positioning lag error window

Factory setting: 65536
 Unit: 1/65536 rev
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 2147483647
 Permitted lag error window during the "Positioning" test step.

8523.9 Active test step

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **0 = Inactive**
- 1 = Hold
- 2 = Position
- 3 = Test
- 4 = Fault

 Active test step

1.1.139 8525 FCB 25 motor parameter measurement

FCB 25 is used for determining the necessary motor values from the electric equivalent wiring diagram during startup.

The nameplate data of the connected motor is required for the motor parameter measurement.

After the motor parameter measurement has been completed, the motor is completely started up electrically. Values that are not yet final at this stage, such as maximum speed and maximum torque, are estimated. The values have to be corrected at a later time to reach the full performance of the motor.

8525.1 Control word

Factory setting:
 Data type: Bit field

Data length: 1

Value range:

- 3 = Also measure beta direction
- 4 = In steps of 30 °C
- 6 = Measurement with 4000 Hz
- 14 = No output voltage measurement
- 18 = Use encoder info
- 19 = q-axis is not measured

Control word

8525.2 Perform only balance measurement

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The following settings can be made:

- Yes: Only the winding resistances are measured and compared with one another. This measurement can be used to rule out an interruption in the line. The duration of the measurement is significantly shorter than a complete measurement.
- No: All motor parameters are measured.

8525.3 Motor temperature

Factory setting: 2000

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -5000 to 15000

Temperature of the motor. The more precise the entered value, the more accurate will be the parameter measurement.

8525.4 Record raw data

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

"Record raw data" = "Yes" disables standard scope.

8525.5 Use motor encoder

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Motor parameter measurement for synchronous machines evaluates the position of the motor encoder.

The motor encoder must have been commutated.

The motor can be blocked.

8525.49 Active control word

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Only stator resistance measurement
- 2 = Motor braked
- 3 = Also measure beta direction
- 4 = In steps of 30 °C
- 5 = Measurement with 2500 Hz
- 6 = Measurement with 4000 Hz
- 14 = No output voltage measurement
- 18 = Use encoder info
- 19 = q-axis is not measured

Control word that is applied when starting the measurement. The measurement is made with these settings.

8525.50 Measurement status

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **1 = Inactive**
- 2 = Active
- 4 = Completed successfully
- 8 = Completed unsuccessfully
- 9 = Measurement aborted (motor rotating)
- 16 = Measurement aborted
- 17 = Measurement is repeated
- 18 = Repetition aborted
- 512 = Completed successfully (motor rotating)

Indicates the parameter measurement status.

8525.51 Time remaining

Factory setting: 0

Unit: s

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Time remaining until end of measurement.

8525.52 Stator resistance phase U

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Value range: $-3.402823E+38$ to Float32Max

Resistance measured in phase U. If the motor is wired in star connection, the value will correspond to the physical winding resistance of phase U. If wired in delta connection, the value will correspond to one third of the resistance value.

8525.53 Stator resistance phase V

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Value range: $-3.402823E+38$ to Float32Max

Resistance measured in phase V. If the motor is wired in star connection, the value will correspond to the physical winding resistance of phase V. If wired in delta connection, the value will correspond to one third of the resistance value.

8525.54 Stator resistance phase W

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Value range: $-3.402823E+38$ to Float32Max

Resistance measured in phase W. If the motor is wired in star connection, the value will correspond to the physical winding resistance of phase W. If wired in delta connection, the value will correspond to one third of the resistance value.

8525.130 Rotor adjustment Kp

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Rotor adjustment Kp

8525.131 Rotor adjustment Ki

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Rotor adjustment Ki

8525.132 Rotor adjustment – current amplitude setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Rotor adjustment – current amplitude setting

8525.133 Rotor adjustment – current amplitude display value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Rotor adjustment – current amplitude display value

8525.134 Flux measurement Kp

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Value range: 10000 to 1000000

Flux measurement Kp

1.1.140 8526 FCB 26 Stop at user-defined limits

FCB 26 is used for stopping at user defined limits that initiate the deceleration ramp, either as a local setpoint or set via fieldbus.

You can choose between a speed-controlled ramp and a position-controlled ramp. Unlike other FCBs (FCB 13/FCB 14), the FCB 26 has a very low priority.

This allows you to select FCB 26 as standard (e.g. bit in the control word that selects this FCB is always set to TRUE). This means that FCB 26 is always active when all other FCBs are deactivated. This makes it possible to always stop with position control.

FCB 26 provides lag error monitoring in position-controlled mode.

8526.1 Position controlled

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

The following settings can be made:

- No: The drive controls the speed to "0".
- Yes: The drive is subject to position control.

8526.2 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Stop with position control

Control bits

8526.3 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Stop with position control – active

Status bits

1.1.141 8550 Speed monitoring DT1

The speed specified by the setpoint can only be achieved if there is sufficient torque available to meet the load requirements. When the torque limit is reached, the application inverter assumes that the desired speed cannot be reached. Speed monitoring responds if this condition persists for the duration specified in parameter "Delay time 1" (index 8550.2) or "Delay time 2" (index 8551.2). In V/f mode, slip is the value that is monitored.

Activate speed monitoring for hoists and set the delay time to a small value. Speed monitoring is not safety-relevant because an incorrect movement of the hoist does not necessarily mean operation in torque limitation.

8550.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = Motor mode
- 2 = Regenerator mode
- **3 = Motor/regenerator mode**

The following settings can be made:

- Off: No monitoring,
- Motor mode: Monitoring in motor operation.
- Regenerative operation: Monitoring in regenerative operation.
- Motor/generator mode: Monitoring is always active.

Note: In 2Q operation, braking is always performed at the torque limit. If you want to suppress speed monitoring, either activate the function only for motor mode, or set the monitoring time longer than the empirically determined braking time.

8550.2 Delay time

Factory setting: 50

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

The set current limit can be reached briefly during acceleration, deceleration, or load peaks. You can prevent speed monitoring from responding too sensitively by setting the delay time accordingly. The current limit must be reached permanently for the duration of the delay time before the monitoring function trips.

8550.3 Reset time factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 10000

When the setting limit of the speed controller is reached, a counter for the delay time is incremented each millisecond. If the speed controller leaves its setting limit before the delay time expires, the counter is decremented until "0" is reached. This parameter specifies how fast the counter decrements when leaving the control output limit compared to incrementing. This factor is usually set to "1", which means the counter is decremented every millisecond. If the factor is set to "2", the counter is decremented by 2 every millisecond, etc.

1.1.142 8551 Speed monitoring DT2

The speed specified by the setpoint can only be achieved if there is sufficient torque available to meet the load requirements. When the torque limit is reached, the application inverter assumes that the desired speed cannot be reached. Speed monitoring responds if this condition persists for the duration specified in parameter "Delay time 1" (index 8550.2) or "Delay time 2" (index 8551.2). In V/f mode, slip is the value that is monitored.

Activate speed monitoring for hoists and set the delay time to a small value. Speed monitoring is not safety-relevant because an incorrect movement of the hoist does not necessarily mean operation in torque limitation.

8551.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Off
- 1 = Motor mode
- 2 = Regenerator mode
- **3 = Motor/regenerator mode**

The following settings can be made:

- Off: No monitoring,
- Motor mode: Monitoring in motor operation.
- Regenerative operation: Monitoring in regenerative operation.
- Motor/generator mode: Monitoring is always active.

Note: In 2Q operation, braking is always performed at the torque limit. If you want to suppress speed monitoring, either activate the function only for motor mode, or set the monitoring time longer than the empirically determined braking time.

8551.2 Delay time

Factory setting: 50

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

The set current limit can be reached briefly during acceleration, deceleration, or load peaks. You can prevent speed monitoring from responding too sensitively by setting the delay time accordingly. The current limit must be reached permanently for the duration of the delay time before the monitoring function trips.

8551.3 Reset time factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 10000

When the setting limit of the speed controller is reached, a counter for the delay time is incremented each millisecond. If the speed controller leaves its setting limit before the delay time expires, the counter is decremented until "0" is reached. This parameter specifies how fast the counter decrements when leaving the control output limit compared to incrementing. This factor is usually set to "1", which means the counter is decremented every millisecond. If the factor is set to "2", the counter is decremented by 2 every millisecond, etc.

1.1.143 8552 FCB 12 Reference travel data DT1

General information about reference travel:

The reference point (machine zero) has to be defined for applications with absolute positioning commands. When using absolute encoders, the reference point must be defined once at initial startup. With all other encoder types, machine zero must be defined each time the machine is switched on.

The application inverter supports 10 different reference travel types that can be set using the "Type" parameter (index 8552.1).

For referencing to hardware limit switches and/or reference cams, these must be set in the control word/in the digital inputs.

If a hardware limit switch is hit during reference travel and the reference point has not yet been found, the drive reverses and continues reference travel in the other direction.

Machine zero = reference position + reference offset.

The "referenced" status is reset when the application inverter is switched off, or in the event of error messages concerning the distance measuring system.

An exception are absolute encoders, see below section. For HIPERFACE® and SSI absolute encoders, the "referenced" status is always set and is only reset during reference travel. If reference travel is aborted, the "not referenced" status remains set.

Bear the following points in mind when deciding whether to perform reference travel to reference cam or zero pulse:

- The zero pulse shifts when the motor is replaced.
- The reference cam could become inaccurate as a result of age, wear or switching hysteresis.

- If the reference point is determined using the zero pulse and reference cam, and the zero pulse is located exactly at the end of the reference cam, then the switching transition of the reference cam might be detected before or after the zero pulse (switching hysteresis). This might result in a reference point that varies by one motor rotation from one time to the next. The situation can be remedied by shifting the reference cam by about half a motor revolution.
- Unidirectional drives can only be referenced using a reference cam. Also note that there is no defined distance between the reference cam and zero pulse of the encoder for non-integer ratios. This means that in this case only the end of the reference cam should be selected as the reference point.
- The length of the reference cam and the reference speeds must be selected so the drive can reliably decelerate to the slower reference speed (reference speed 2) on the reference cam. The end of the reference cam or the closest zero pulse of the encoder system can be used as the reference point.
- The zero pulse can only be used as a reference point when the encoder has a zero pulse and the zero track is connected to the application inverter.

For each reference travel type, a movement to a home position after the reference travel can be selected with the parameter "Go to home position" (index 8552.3). This allows you to freely define the drive position regardless of the reference point using FCB 12 "Reference travel". This means the controller need not perform positioning travel. The home position is set using the "Home position" parameter (index 8552.7). The speed for moving to the home position is set in the "Homing speed" parameter (index 8552.10).

Note: When selecting "Reference to zero pulse", the C track of the encoder is monitored. If no zero pulse is obtained within 2.5 encoder revolutions, an error is issued and the drive is stopped (emergency stop).

8552.1 Type

Factory setting:

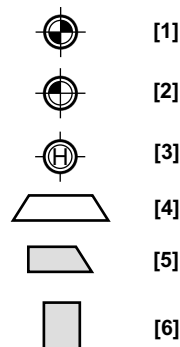
Data type: Enum

Data length: 1

Value range:

- 0 = Deactivated
- 1 = Zero pulse – negative direction
- 2 = Reference cam – negative end
- 3 = Reference cam – positive end
- 4 = Positive limit switch
- 5 = Negative limit switch
- 7 = Reference cam flush – positive limit switch
- 8 = Reference cam flush – negative limit switch
- **9 = Referencing without reference travel**
- 10 = Fixed stop positive
- 11 = Fixed stop negative

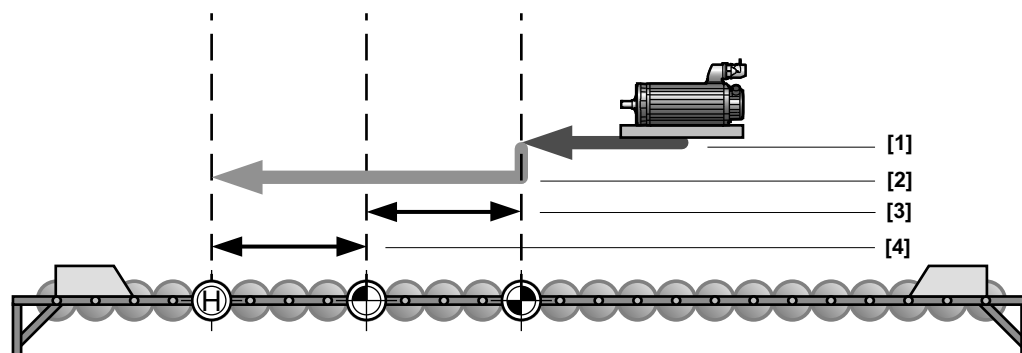
Reference travel type used for referencing.



1240575627

- [1] Reference point
- [2] Machine zero
- [3] Stop position after homing (optional)
- [4] Reference cam
- [5] Hardware limit switch
- [6] Fixed stop
- Left zero pulse

Parameter "Reference to zero pulse" (index 8552.2) must be set to "Yes" for this type of reference travel.



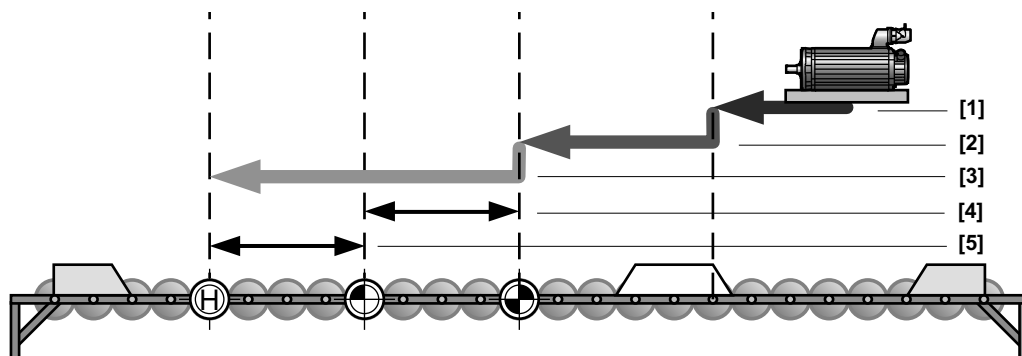
1240733707

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the first zero pulse left of the start position for reference travel. A reference cam is not required. Only the "Retraction speed" parameter (index 8552.9) is used for reference travel.

- Negative end of reference cam

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240736139

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the negative end of the reference cam or the first negative zero pulse after the end of the reference cam.

A bit in control word 0 – 3 must be set to "Reference cam".

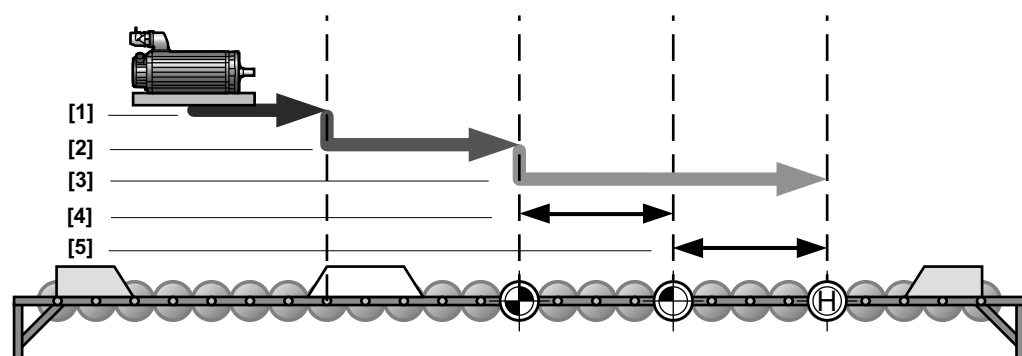
Reference travel starts with search speed in negative direction of rotation up to the first rising edge of the reference cam. As soon as the reference cam is detected, the speed changes to retraction speed.

Without "referencing to zero pulse", the reference point will be the falling edge (negative end) of the reference cam. With "referencing to zero pulse = yes", the reference point will be the first zero pulse after the falling edge of the reference cam.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Positive end of reference cam

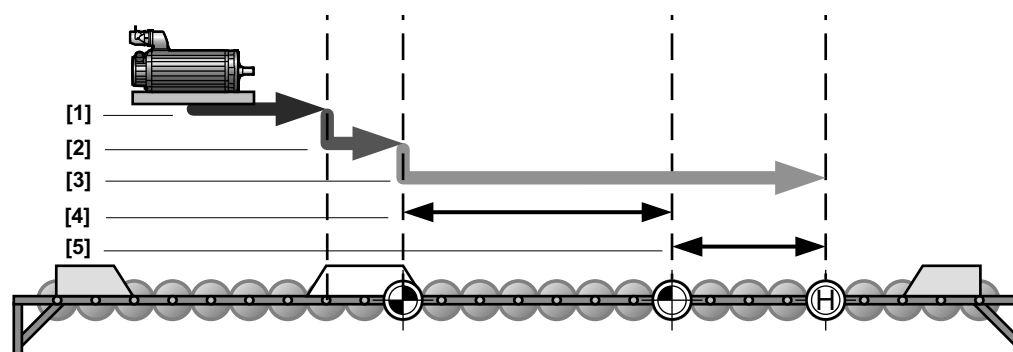
The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240741387

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240743819

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the positive end of the reference cam or the first positive zero pulse after the end of the reference cam.

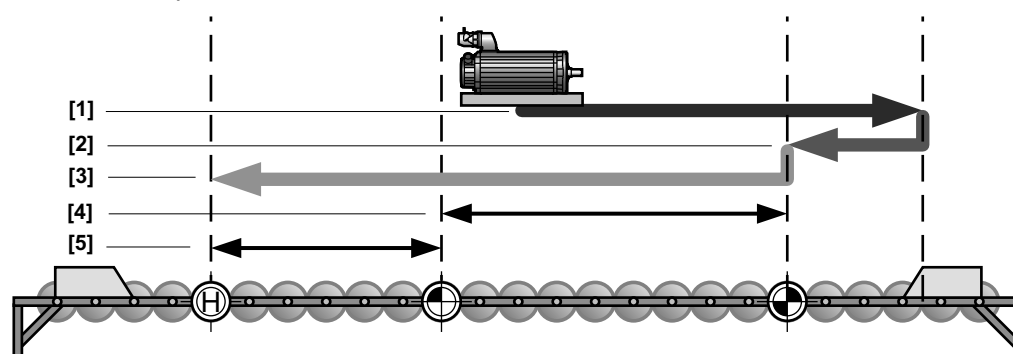
A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in positive direction of rotation. Search speed is used up to the first rising edge of the reference cam. As soon as the reference cam is detected, the speed changes to retraction speed.

Without "referencing to zero pulse", the reference point will be the falling edge (negative end) of the reference cam. With "referencing to zero pulse = yes", the reference point will be the first zero pulse after the falling edge of the reference cam.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Limit switch positive



1240746251

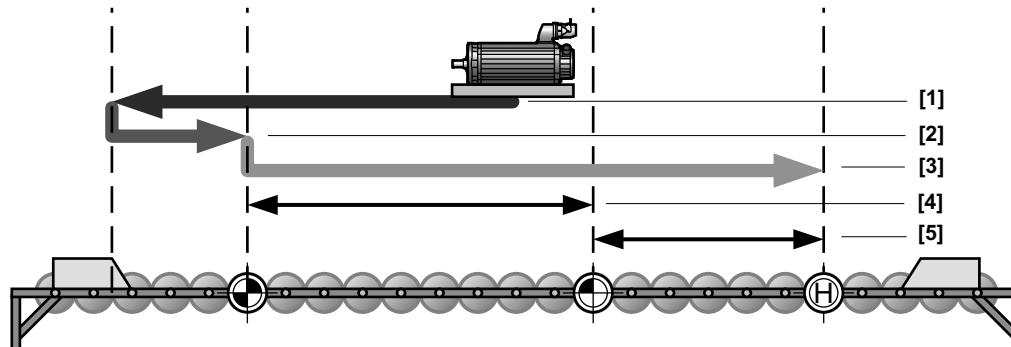
- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the first zero pulse to the left of the positive limit switch.

Reference travel starts in positive direction of rotation. Search speed is used up to the falling edge of the positive limit switch, then retraction speed is used.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Limit switch negative



1240966283

[1] Search speed (index 8552.8)

[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

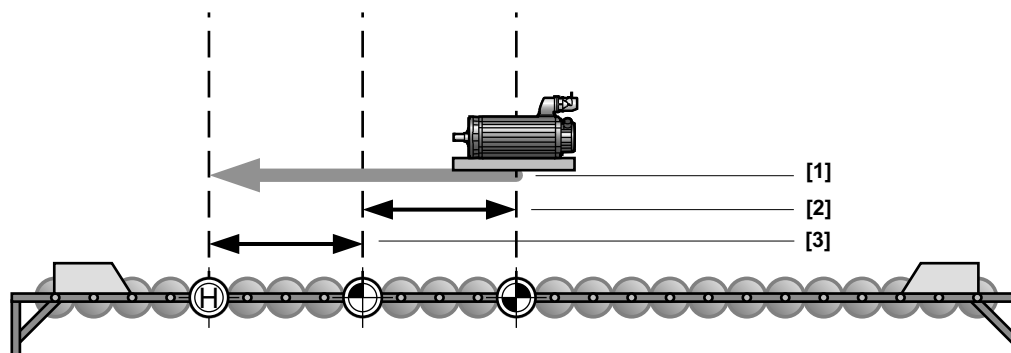
[5] Home position (index 8552.7)

The reference point is the first zero pulse to the right of the negative limit switch.

Reference travel starts in negative direction of rotation. Search speed is used up to the falling edge of the negative limit switch, then retraction speed is used.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– No reference travel



1240968715

[1] Homing speed (index 8552.10)

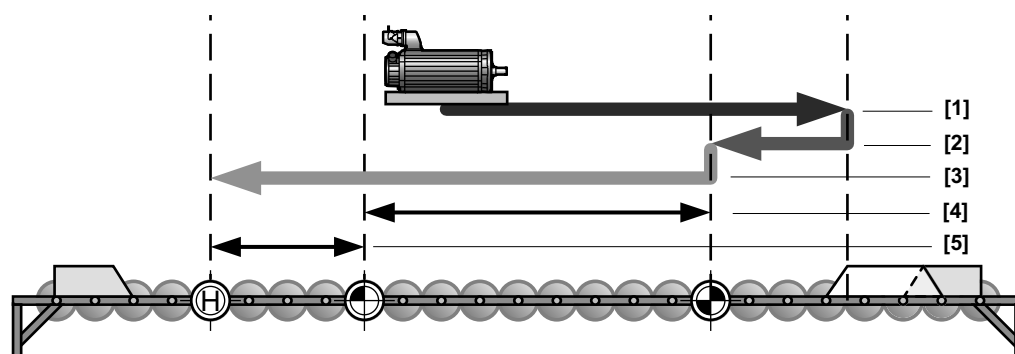
[2] Reference offset (index 8552.5)

[3] Home position (index 8552.7)

The reference point is the current position. This type of reference travel is useful with absolute encoders and for drives that are to be referenced at standstill. For example, the position of a feed axis can be set to "0" when the drive is at standstill. In this way, the machine operator to know where exactly the drive is located.

– Reference cam overlaps with positive limit switch

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240971147

[1] Search speed (index 8552.8)

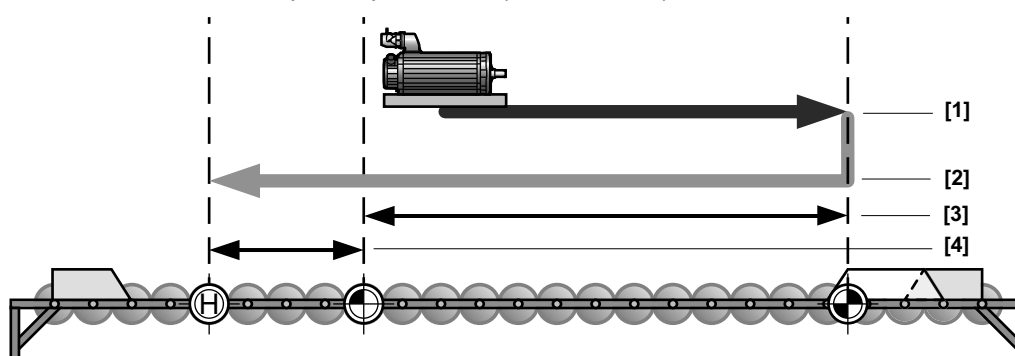
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Reference to zero pulse" parameter (index 8552.2) is set to "No".



1240973579

[1] Search speed (index 8552.8)

[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The reference position is the negative end of the reference cam or the first zero pulse to the left after the end of the reference cam.

A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in positive direction of rotation. Search speed is used up to the first rising edge of the reference cam, then retraction speed is used. Unlike the type "Negative end of reference cam", the drive starts to the right and turns on the reference cam.

Depending on the setting of "reference to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

The reference cam must start just before or in line with the positive hardware limit switch and must project into the limit switch. This ensures that no hardware limit switch is hit during reference travel.

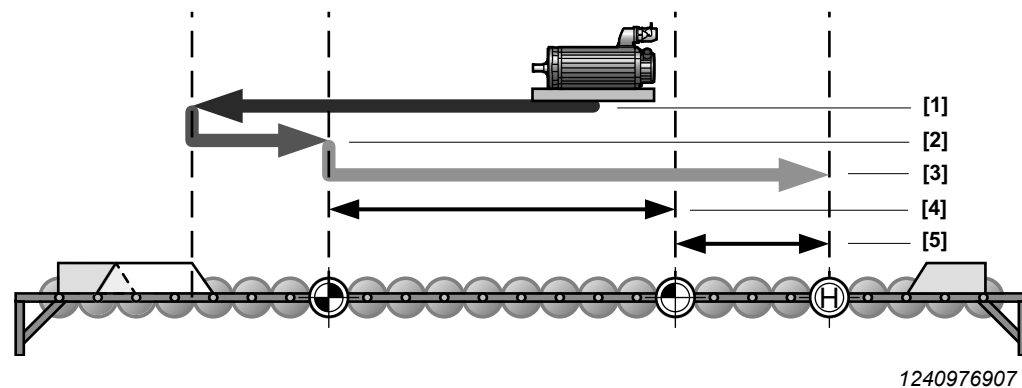
1 Parameter description

Basic device

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Reference cam overlaps with negative limit switch

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



[1] Search speed (index 8552.8)

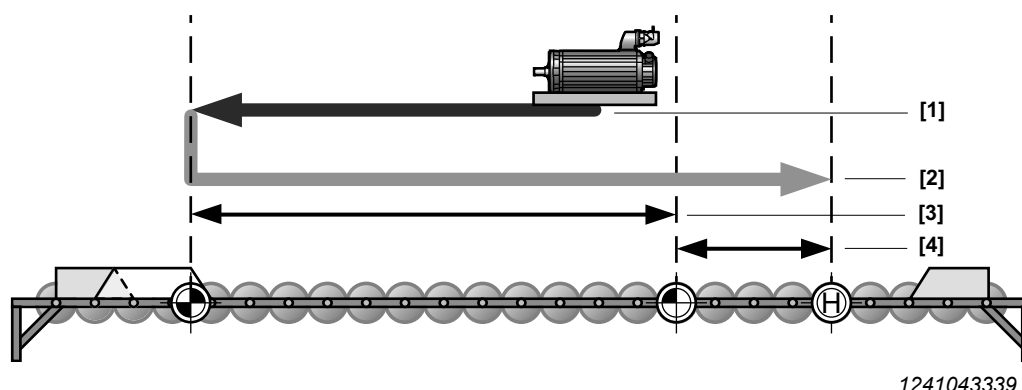
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Reference to zero pulse" parameter (index 8552.2) is set to "No".



[1] Search speed (index 8552.8)

[2] Homing speed (index 8552.10)

[3] Reference offset (index 8552.5)

[4] Home position (index 8552.7)

The reference position is the right end of the reference cam or the first zero pulse to the right after the end of the reference cam.

A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in negative direction of rotation. Search speed is used up to the first rising edge of the reference cam, then retraction speed is used. Unlike the type "Positive end of reference cam", the drive starts to the left and turns on the reference cam.

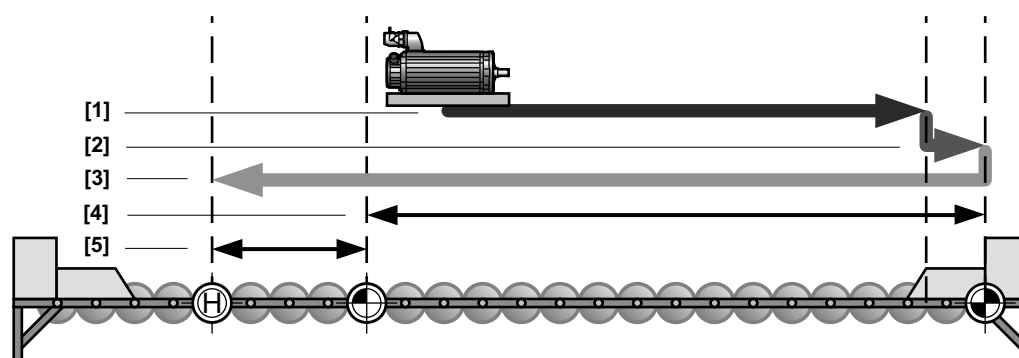
Depending on the setting of "reference to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

The reference cam must start just before or in line with the positive hardware limit switch and must project into the limit switch. This ensures that no hardware limit switch is hit during reference travel.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Fixed stop positive

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Hardware limit switch".



1241045771

[1] Search speed (index 8552.8)

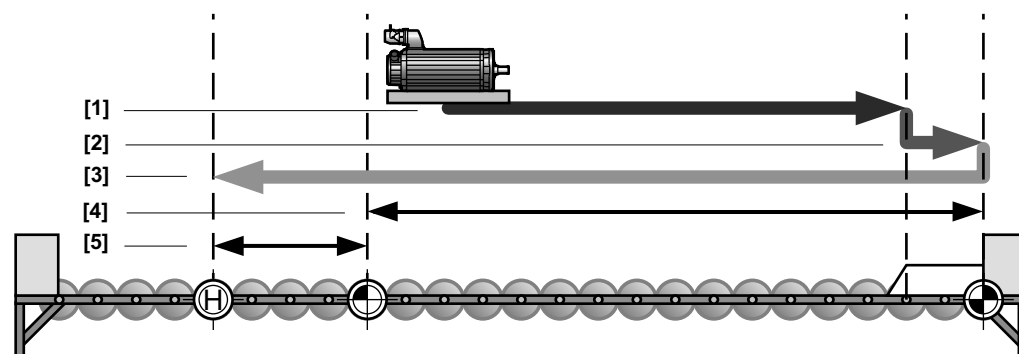
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Reference cam".



1241048203

[1] Search speed (index 8552.8)

[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

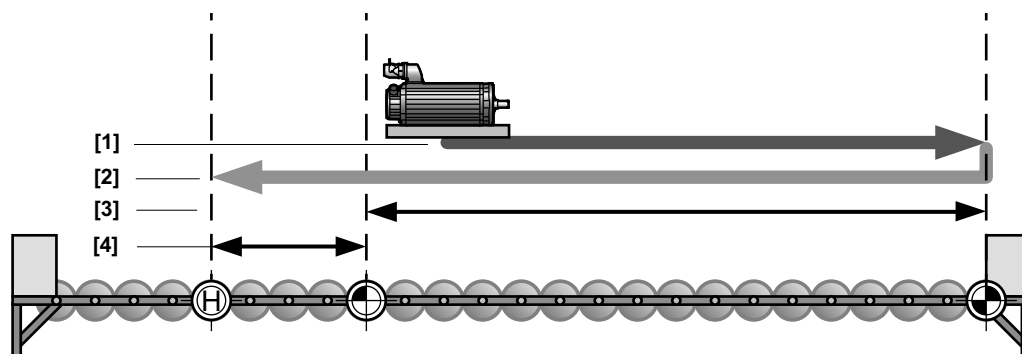
[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

1 Parameter description

Basic device

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None".



1242546699

[1] Retraction speed (index 8552.9)

[2] Homing speed (index 8552.10)

[3] Reference offset (index 8552.5)

[4] Home position (index 8552.7)

The reference position is the positive fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective speed without any damage.

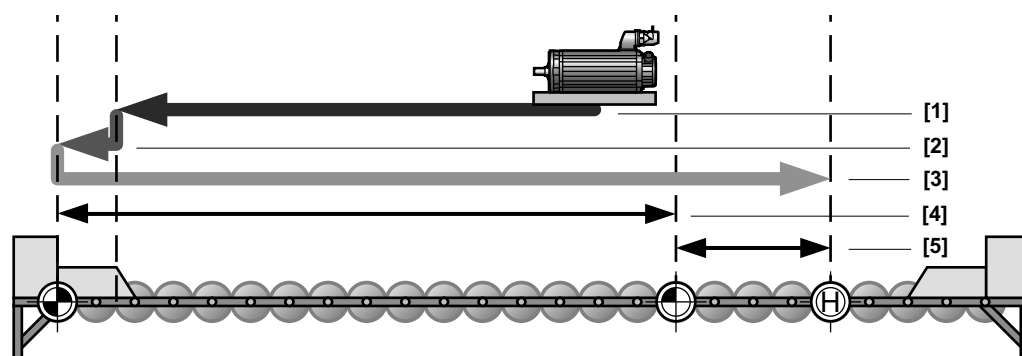
Reference travel starts in positive direction of rotation. If the "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None", reference travel will start with retraction speed.

With the setting "Hardware limit switch" or "Reference cam", reference travel starts with the search speed and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter "Dwell time at fixed stop" (index 8552.15) can be used to set the duration for which the torque (index 8552.14) is maintained on the fixed stop until referencing.

– Fixed stop negative

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Hardware limit switch".



1242549131

[1] Search speed (index 8552.8)

[2] Retraction speed (index 8552.9)

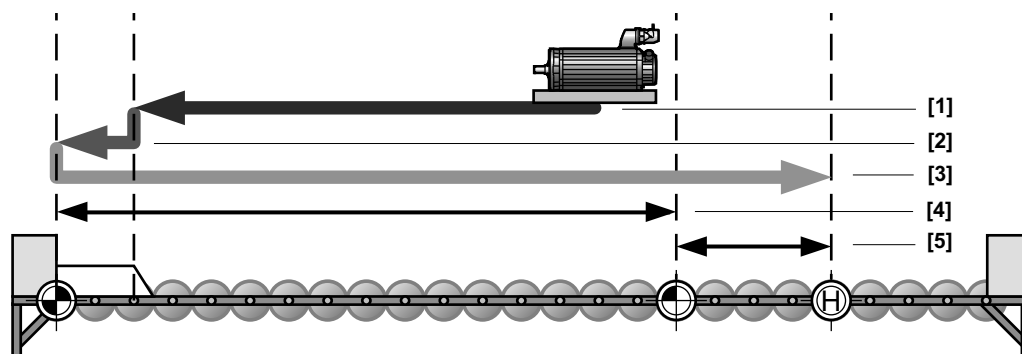
[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

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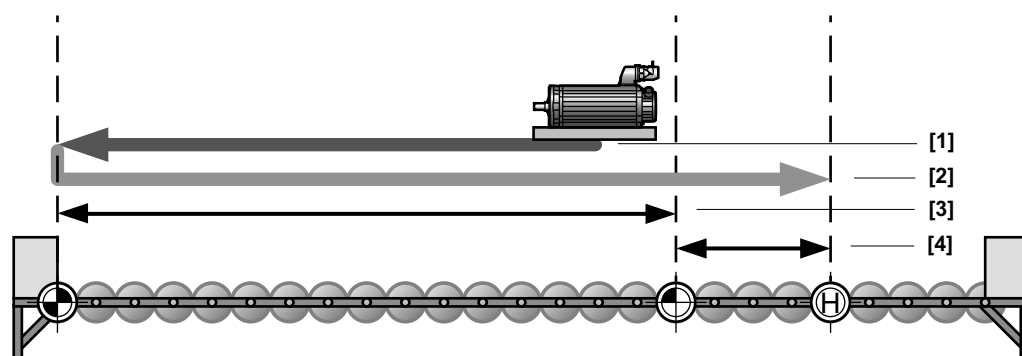
The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Reference cam".



1242551819

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None".



1242554251

- [1] Retraction speed (index 8552.9)
- [2] Homing speed (index 8552.10)
- [3] Reference offset (index 8552.5)
- [4] Home position (index 8552.7)

The reference position is the negative fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective speed without any damage.

Reference travel starts in negative direction of rotation. If the "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None", reference travel will start with retraction speed.

With the setting "Hardware limit switch" or "Reference cam", reference travel starts with the search speed and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter "Dwell time at fixed stop" (index 8552.15) can be used to set the duration for which the torque (index 8552.14) is maintained on the fixed stop until referencing.

8552.2 Reference to zero pulse

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Specifies whether the zero pulse of the encoder is used as the reference point. Doing so allows for compensating wear or inaccuracy of the reference cam.

8552.3 Travel to home position

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Specifies the position to be approached after referencing.

The following settings can be made:

- Yes: The position set in the "Home position" parameter is approached.
- No: The drive stops at the reference point.

8552.4 Speed changeover before fixed stop

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = None**
- 1 = HW limit switch
- 2 = Reference cam

Specifies the event at which the search speed (index 8552.8/ 8553.8) changes to retraction speed (index 8552.9 / 8552.9) when "referencing to fixed stop".

8552.5 Reference offset

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

This parameter is used to define the reference offset. The offset is required when the cam is not located at the machine zero.

8552.7 Home position

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position that is approached automatically after referencing when parameter "Go to home position" (index 8552.3) is active.

8552.8 Search speed

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed used for searching for reference cams or limit switches.

8552.9 Retraction speed

Factory setting: 500000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

The retraction speed is used when leaving the reference mark to exactly determine the end of the reference mark through reduced speed.

8552.10 Homing speed

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed for approaching the home position after referencing.

8552.11 Acceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Acceleration of reference travel

8552.12 Deceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Deceleration of reference travel

8552.13 Jerk time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Jerk time for reference travel.

8552.14 Torque limit fixed stop

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Limits the torque when referencing to fixed stop.

8552.15 Dwell time at fixed stop

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 10000

Specifies how long the fixed stop (torque limit reached) remains hit until the drive signals "referenced".

1.1.144 8553 FCB 12 Reference travel data DT2

General information about reference travel:

The reference point (machine zero) has to be defined for applications with absolute positioning commands. When using absolute encoders, the reference point must be defined once at initial startup. With all other encoder types, machine zero must be defined each time the machine is switched on.

The application inverter supports 10 different reference travel types that can be set using the "Type" parameter (index 8552.1).

For referencing to hardware limit switches and/or reference cams, these must be set in the control word/in the digital inputs.

If a hardware limit switch is hit during reference travel and the reference point has not yet been found, the drive reverses and continues reference travel in the other direction.

Machine zero = reference position + reference offset.

The "referenced" status is reset when the application inverter is switched off, or in the event of error messages concerning the distance measuring system.

An exception are absolute encoders, see below section. For HIPERFACE® and SSI absolute encoders, the "referenced" status is always set and is only reset during reference travel. If reference travel is aborted, the "not referenced" status remains set.

Bear the following points in mind when deciding whether to perform reference travel to reference cam or zero pulse:

- The zero pulse shifts when the motor is replaced.
- The reference cam could become inaccurate as a result of age, wear or switching hysteresis.
- If the reference point is determined using the zero pulse and reference cam, and the zero pulse is located exactly at the end of the reference cam, then the switching transition of the reference cam might be detected before or after the zero pulse (switching hysteresis). This might result in a reference point that varies by one motor rotation from one time to the next. The situation can be remedied by shifting the reference cam by about half a motor revolution.
- Unidirectional drives can only be referenced using a reference cam. Also note that there is no defined distance between the reference cam and zero pulse of the encoder for non-integer ratios. This means that in this case only the end of the reference cam should be selected as the reference point.
- The length of the reference cam and the reference speeds must be selected so the drive can reliably decelerate to the slower reference speed (reference speed 2) on the reference cam. The end of the reference cam or the closest zero pulse of the encoder system can be used as the reference point.
- The zero pulse can only be used as a reference point when the encoder has a zero pulse and the zero track is connected to the application inverter.

For each reference travel type, a movement to a home position after the reference travel can be selected with the parameter "Go to home position" (index 8552.3). This allows you to freely define the drive position regardless of the reference point using FCB 12 "Reference travel". This means the controller need not perform positioning travel. The home position is set using the "Home position" parameter (index 8552.7). The speed for moving to the home position is set in the "Homing speed" parameter (index 8552.10).

Note: When selecting "Reference to zero pulse", the C track of the encoder is monitored. If no zero pulse is obtained within 2.5 encoder revolutions, an error is issued and the drive is stopped (emergency stop).

8553.1 Type

Factory setting:

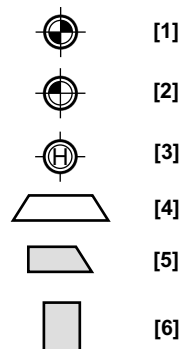
Data type: Enum

Data length: 1

Value range:

- 0 = Deactivated
- 1 = Zero pulse – negative direction
- 2 = Reference cam – negative end
- 3 = Reference cam – positive end
- 4 = Positive limit switch
- 5 = Negative limit switch
- 7 = Reference cam flush – positive limit switch
- 8 = Reference cam flush – negative limit switch
- **9 = Referencing without reference travel**
- 10 = Fixed stop positive
- 11 = Fixed stop negative

Reference travel type used for referencing.

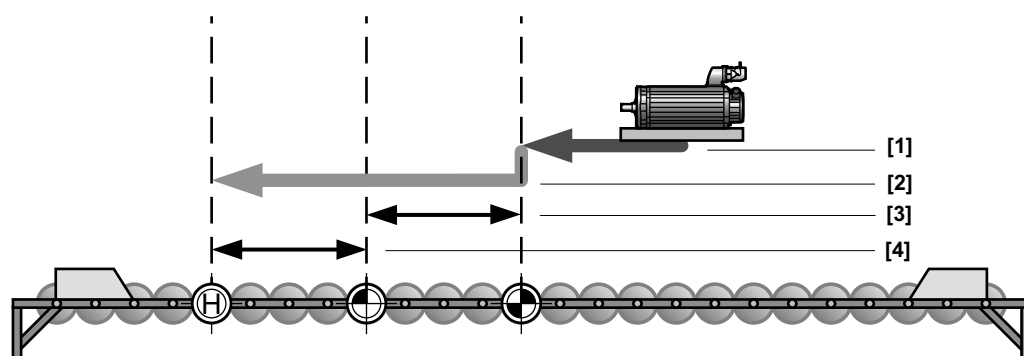


1240575627

- [1] Reference point
- [2] Machine zero
- [3] Stop position after homing (optional)
- [4] Reference cam
- [5] Hardware limit switch
- [6] Fixed stop

– Left zero pulse

Parameter "Reference to zero pulse" (index 8552.2) must be set to "Yes" for this type of reference travel.



1240733707

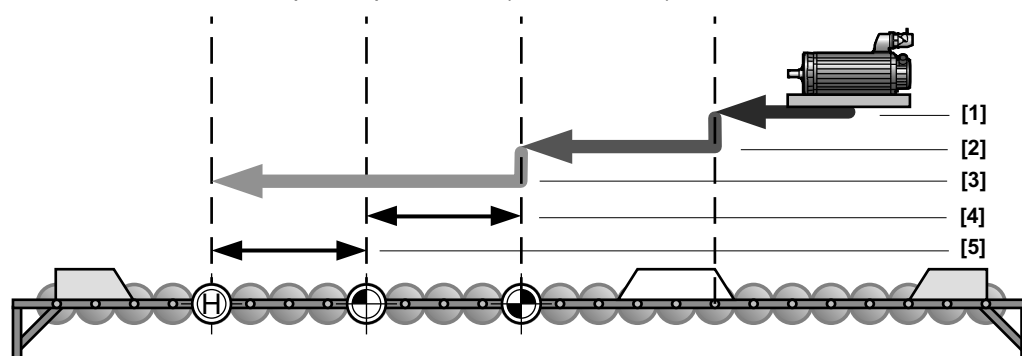
24752533/EN – 02/2019

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the first zero pulse left of the start position for reference travel. A reference cam is not required. Only the "Retraction speed" parameter (index 8552.9) is used for reference travel.

– Negative end of reference cam

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240736139

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the negative end of the reference cam or the first negative zero pulse after the end of the reference cam.

A bit in control word 0 – 3 must be set to "Reference cam".

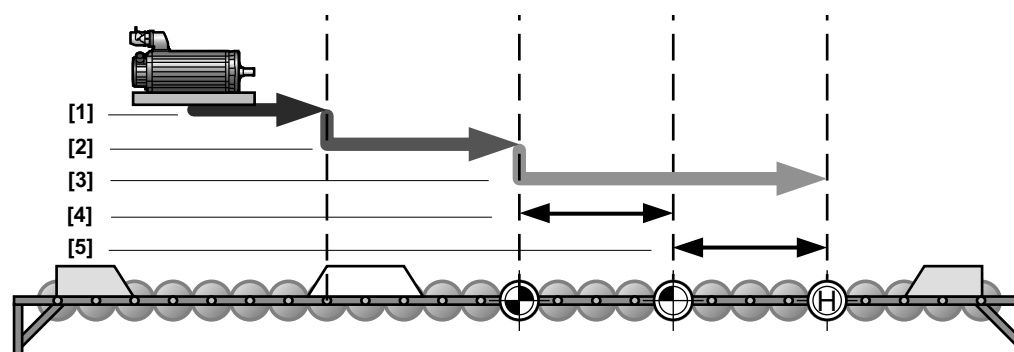
Reference travel starts with search speed in negative direction of rotation up to the first rising edge of the reference cam. As soon as the reference cam is detected, the speed changes to retraction speed.

Without "referencing to zero pulse", the reference point will be the falling edge (negative end) of the reference cam. With "referencing to zero pulse = yes", the reference point will be the first zero pulse after the falling edge of the reference cam.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Positive end of reference cam

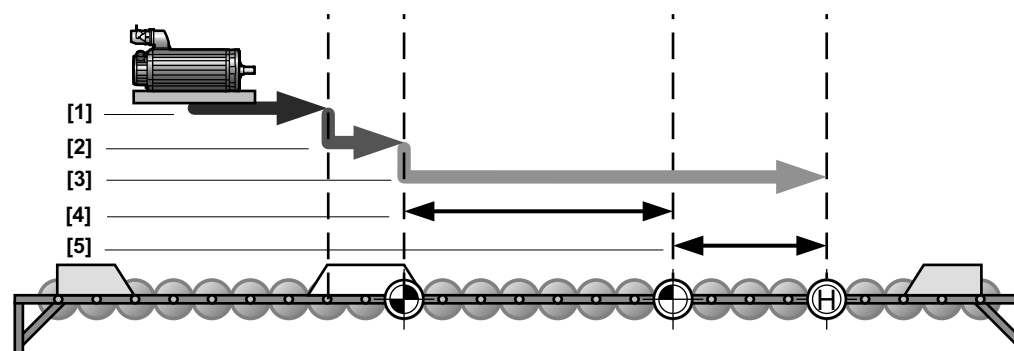
The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240741387

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240743819

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the positive end of the reference cam or the first positive zero pulse after the end of the reference cam.

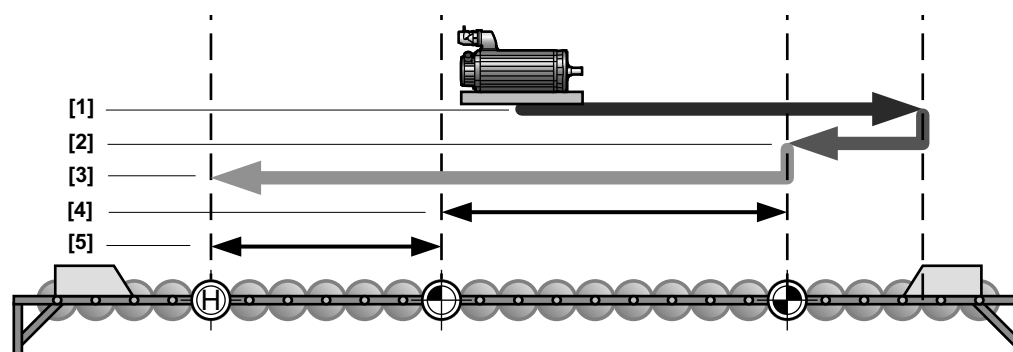
A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in positive direction of rotation. Search speed is used up to the first rising edge of the reference cam. As soon as the reference cam is detected, the speed changes to retraction speed.

Without "referencing to zero pulse", the reference point will be the falling edge (negative end) of the reference cam. With "referencing to zero pulse = yes", the reference point will be the first zero pulse after the falling edge of the reference cam.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Limit switch positive



1240746251

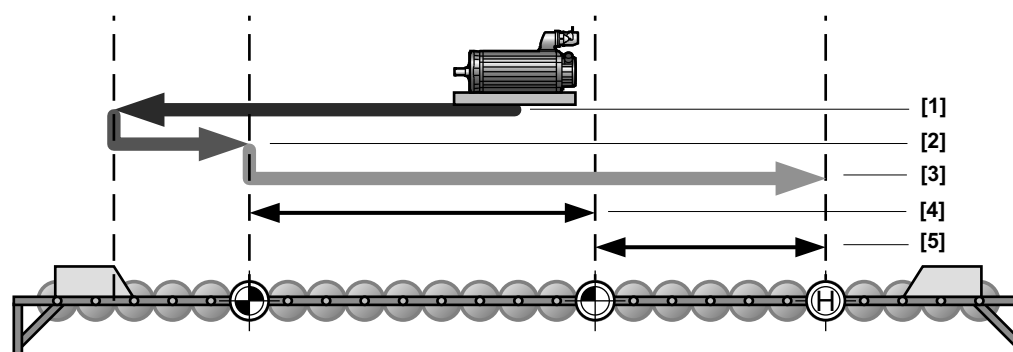
- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference position is the first zero pulse to the left of the positive limit switch.

Reference travel starts in positive direction of rotation. Search speed is used up to the falling edge of the positive limit switch, then retraction speed is used.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Limit switch negative



1240966283

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The reference point is the first zero pulse to the right of the negative limit switch.

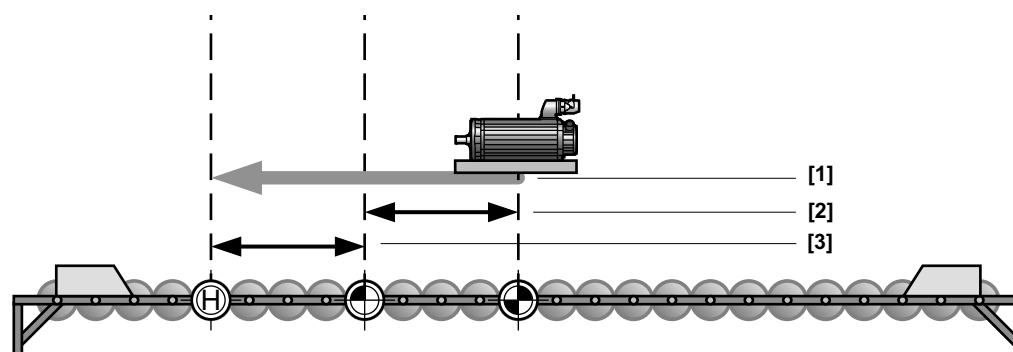
Reference travel starts in negative direction of rotation. Search speed is used up to the falling edge of the negative limit switch, then retraction speed is used.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

1 Parameter description

Basic device

– No reference travel



1240968715

[1] Homing speed (index 8552.10)

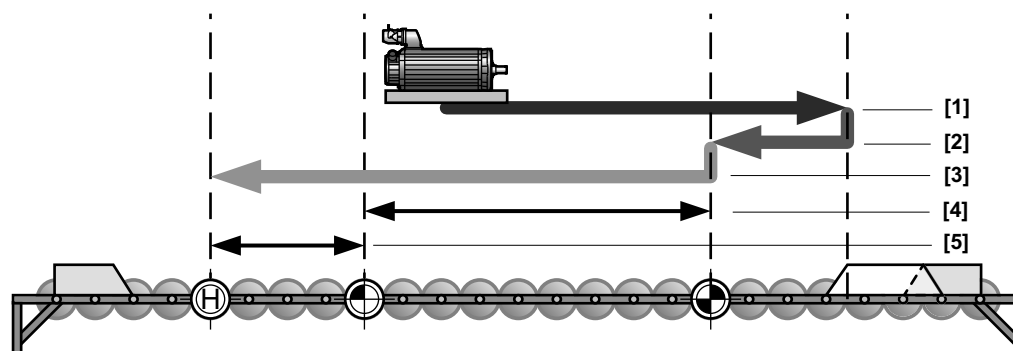
[2] Reference offset (index 8552.5)

[3] Home position (index 8552.7)

The reference point is the current position. This type of reference travel is useful with absolute encoders and for drives that are to be referenced at standstill. For example, the position of a feed axis can be set to "0" when the drive is at standstill. In this way, the machine operator to know where exactly the drive is located.

– Reference cam overlaps with positive limit switch

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240971147

[1] Search speed (index 8552.8)

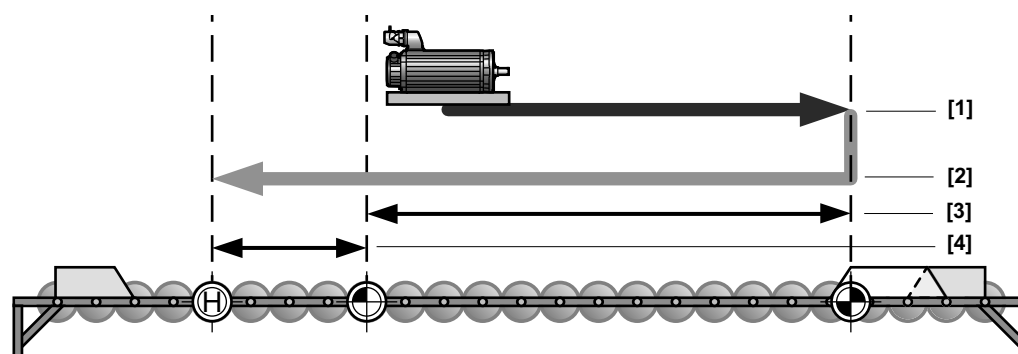
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Reference to zero pulse" parameter (index 8552.2) is set to "No".



1240973579

[1] Search speed (index 8552.8)

[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The reference position is the negative end of the reference cam or the first zero pulse to the left after the end of the reference cam.

A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in positive direction of rotation. Search speed is used up to the first rising edge of the reference cam, then retraction speed is used. Unlike the type "Negative end of reference cam", the drive starts to the right and turns on the reference cam.

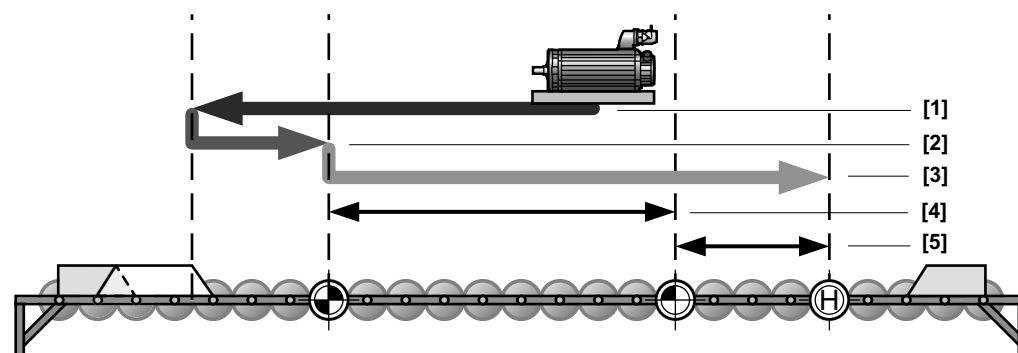
Depending on the setting of "reference to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

The reference cam must start just before or in line with the positive hardware limit switch and must project into the limit switch. This ensures that no hardware limit switch is hit during reference travel.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Reference cam overlaps with negative limit switch

The "Reference to zero pulse" parameter (index 8552.2) is set to "Yes".



1240976907

[1] Search speed (index 8552.8)

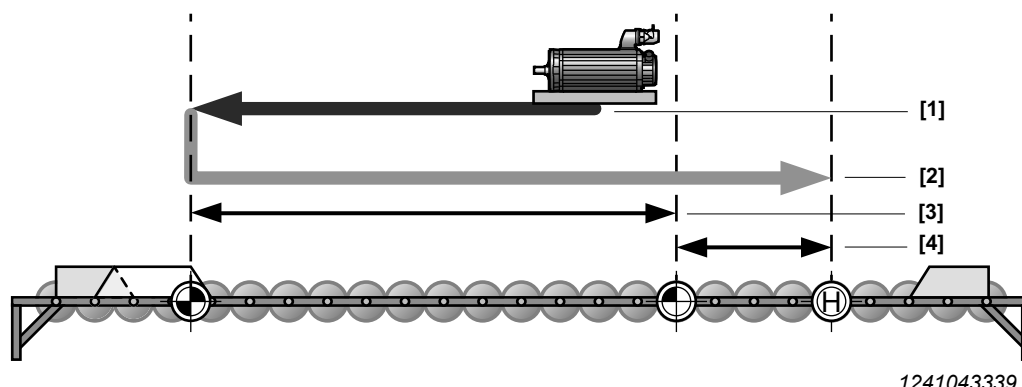
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Reference to zero pulse" parameter (index 8552.2) is set to "No".



[1] Search speed (index 8552.8)

[2] Homing speed (index 8552.10)

[3] Reference offset (index 8552.5)

[4] Home position (index 8552.7)

The reference position is the right end of the reference cam or the first zero pulse to the right after the end of the reference cam.

A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in negative direction of rotation. Search speed is used up to the first rising edge of the reference cam, then retraction speed is used. Unlike the type "Positive end of reference cam", the drive starts to the left and turns on the reference cam.

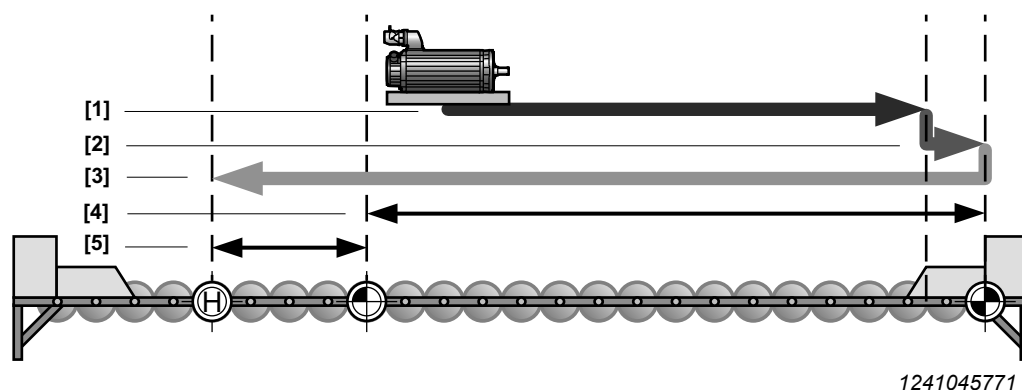
Depending on the setting of "reference to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

The reference cam must start just before or in line with the positive hardware limit switch and must project into the limit switch. This ensures that no hardware limit switch is hit during reference travel.

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is irrelevant for this type of reference travel.

– Fixed stop positive

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Hardware limit switch".



[1] Search speed (index 8552.8)

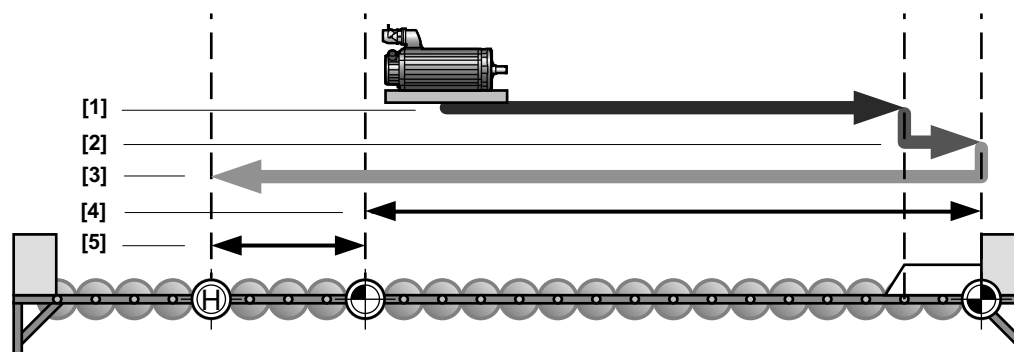
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Reference cam".



1241048203

[1] Search speed (index 8552.8)

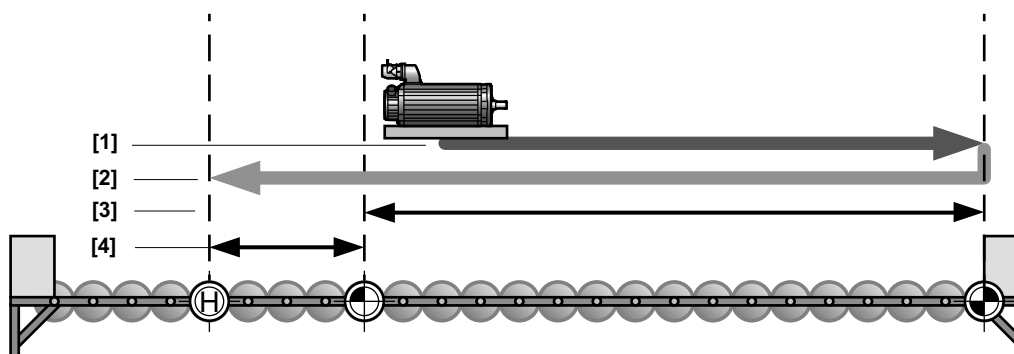
[2] Retraction speed (index 8552.9)

[3] Homing speed (index 8552.10)

[4] Reference offset (index 8552.5)

[5] Home position (index 8552.7)

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None".



1242546699

[1] Retraction speed (index 8552.9)

[2] Homing speed (index 8552.10)

[3] Reference offset (index 8552.5)

[4] Home position (index 8552.7)

The reference position is the positive fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective speed without any damage.

Reference travel starts in positive direction of rotation. If the "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None", reference travel will start with retraction speed.

With the setting "Hardware limit switch" or "Reference cam", reference travel starts with the search speed and reduces to retraction speed when hitting the hardware switch or reference cam.

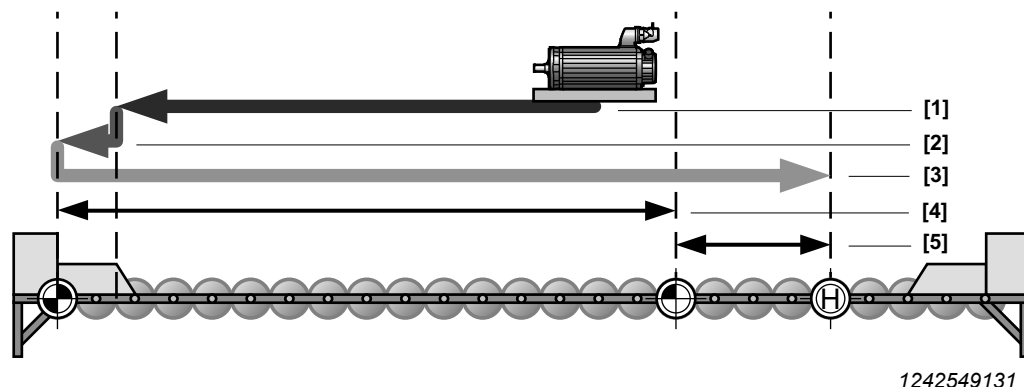
1 Parameter description

Basic device

Parameter "Dwell time at fixed stop" (index 8552.15) can be used to set the duration for which the torque (index 8552.14) is maintained on the fixed stop until referencing.

– Fixed stop negative

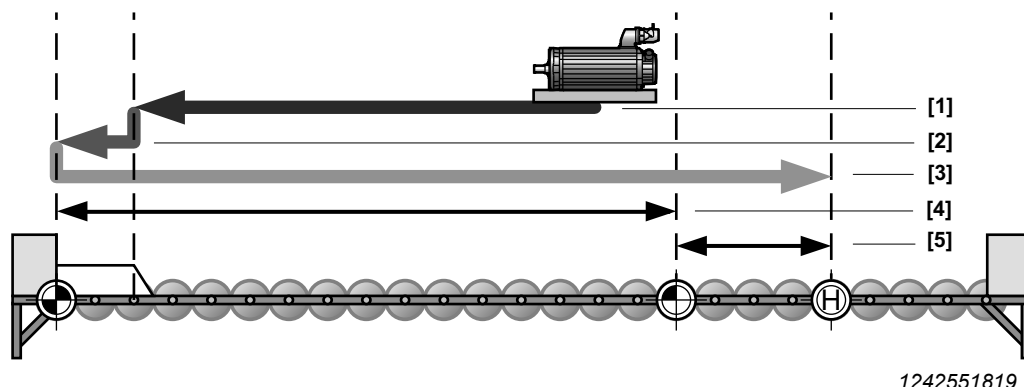
The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Hardware limit switch".



1242549131

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

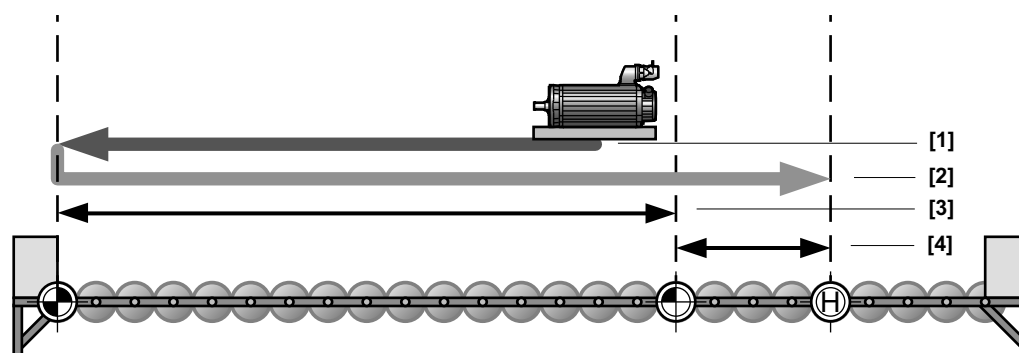
The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "Reference cam".



1242551819

- [1] Search speed (index 8552.8)
- [2] Retraction speed (index 8552.9)
- [3] Homing speed (index 8552.10)
- [4] Reference offset (index 8552.5)
- [5] Home position (index 8552.7)

The "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None".



1242554251

[1] Retraction speed (index 8552.9)

[2] Homing speed (index 8552.10)

[3] Reference offset (index 8552.5)

[4] Home position (index 8552.7)

The reference position is the negative fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective speed without any damage.

Reference travel starts in negative direction of rotation. If the "Hardware limit switch for speed changeover" parameter (index 8552.4) is set to "None", reference travel will start with retraction speed.

With the setting "Hardware limit switch" or "Reference cam", reference travel starts with the search speed and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter "Dwell time at fixed stop" (index 8552.15) can be used to set the duration for which the torque (index 8552.14) is maintained on the fixed stop until referencing.

8553.2 Reference to zero pulse

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Specifies whether the zero pulse of the encoder is used as the reference point. Doing so allows for compensating wear or inaccuracy of the reference cam.

8553.3 Travel to home position

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Specifies the position to be approached after referencing.

The following settings can be made:

- Yes: The position set in the "Home position" parameter is approached.
- No: The drive stops at the reference point.

8553.4 Speed changeover before fixed stop

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = None**
- 1 = HW limit switch
- 2 = Reference cam

Specifies the event at which the search speed (index 8552.8/ 8553.8) changes to retraction speed (index 8552.9 / 8552.9) when "referencing to fixed stop".

8553.5 Reference offset

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

This parameter is used to define the reference offset. The offset is required when the cam is not located at the machine zero.

8553.7 Home position

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position that is approached automatically after referencing when parameter "Go to home position" (index 8552.3) is active.

8553.8 Search speed

Factory setting: 2000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed used for searching for reference cams or limit switches.

8553.9 Retraction speed

Factory setting: 500000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

The retraction speed is used when leaving the reference mark to exactly determine the end of the reference mark through reduced speed.

8553.10 Homing speed

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed for approaching the home position after referencing.

8553.11 Acceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Acceleration of reference travel

8553.12 Deceleration

Factory setting: 300000

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Deceleration of reference travel

8553.13 Jerk time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 2000
Jerk time for reference travel

8553.14 Torque limit fixed stop

Factory setting: 1000
Unit: 1E-01% nominal motor torque
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 10000
Limits the torque when referencing to fixed stop.

8553.15 Dwell time at fixed stop

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Value range: 0 to 10000
Specifies how long the fixed stop (torque limit reached) remains hit until the drive signals "referenced".

1.1.145 8554 User unit position DT1

These parameters specify the properties of the user unit for the position of drive train 1.

8554.1 Numerator

Factory setting: 65536
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: 1 to 2147483647
Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8554.2 Denominator

Factory setting: 100
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8554.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- **2 = 2**
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8554.4 Unit

Factory setting: Rev

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and under "Process values".

1.1.146 8555 User unit position DT2

These parameters specify the properties of the user unit for the position of drive train 2.

8555.1 Numerator

Factory setting: 65536

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8555.2 Denominator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8555.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- **2 = 2**
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8555.4 Unit

Factory setting: Rev

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also displayed in the PO configuration and under the process values.

1.1.147 8556 User unit position active

These parameters specify the properties of the user unit for the position of the active drive train.

8556.1 Numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8556.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8556.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8556.4 Unit

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also displayed in the PO configuration and under the process values.

1.1.148 8557 User unit speed DT1

These parameters specify the properties of the user unit for the speed of drive train 1.

8557.1 Numerator

Factory setting: 10000

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8557.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8557.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8557.4 Unit

Factory setting: Rev/min

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and under "Process values".

1.1.149 8558 User unit speed DT2

These parameters specify the properties of the user unit for the speed of drive train 2.

8558.1 Numerator

Factory setting: 10000

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8558.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8558.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7

- 8 = 8
- 9 = 9

Number of decimal places

8558.4 Unit

Factory setting: Rev/min

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also displayed in the PO configuration and under the process values.

1.1.150 8559 User unit speed active

These parameters specify the properties of the user unit for the speed of the active drive train.

8559.1 Numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8559.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8559.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0

- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8559.4 Unit

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also displayed in the PO configuration and under the process values.

1.1.151 8560 User unit acceleration DT1

These parameters specify the properties of the user unit for the acceleration of drive train 1.

8560.1 Numerator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8560.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8560.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8560.4 Unit

Factory setting: rev/(min*s)

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and under "Process values".

1.1.152 8561 User unit acceleration DT2

These parameters specify the properties of the user unit for the acceleration of drive train 2.

8561.1 Numerator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8561.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8561.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8561.4 Unit

Factory setting: rev/(min*s)

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also displayed in the PO configuration and under the process values.

1.1.153 8562 User unit acceleration active

These parameters specify the properties of the user unit for the acceleration of the active drive train.

8562.1 Numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8562.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 2147483647

Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

8562.3 Number of decimal places

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = 0
- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4
- 5 = 5
- 6 = 6
- 7 = 7
- 8 = 8
- 9 = 9

Number of decimal places

8562.4 Unit

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Value range:

Arbitrary unit defined by the user. This unit is also displayed in the PO configuration and under the process values.

1.1.154 8563 Stop functions DT1

This parameter group specifies the global behavior of the stop functions of drive train 1.

8563.1 Behavior at standstill

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Brake released/drive energized
- **1 = Brake applied/drive not energized**
- 2 = No brake installed/drive not energized

Determines the behavior of the drive when standstill ($n = 0$) is detected in stop functions.

The parameter is used for the following FCBs:

FCB 00, FCB 02, FCB 13, FCB 14, FCB 05: Stop by setpoint function

Notice:

The value set for this parameter is without effect in operating modes without encoder.

At standstill, the brake is always applied and the output stage is inhibited.

1.1.155 8564 Stop functions DT2

This parameter group specifies the global behavior of the stop functions of drive train 2.

8564.1 Behavior at standstill

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = Brake released/drive energized
- **1 = Brake applied/drive not energized**
- 2 = No brake installed/drive not energized

Determines the behavior of the drive when standstill ($n = 0$) is detected in stop functions.

The parameter is used for the following FCBs:

FCB 00, FCB 02, FCB 13, FCB 14, FCB 05: Stop by setpoint function

Notice:

The value set for this parameter is without effect in operating modes without encoder.

At standstill, the brake is always applied and the output stage is inhibited.

1.1.156 8565 Encoder assignment DT1

Encoder assignment for drive train 1

8565.1 Connected encoders

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 1 = Encoder 1
- 1 = Encoder 1

Specifies the encoders connected to the inverter. Startup sets the parameter to the correct value.

8565.2 Source actual speed

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No encoder
- **1 = Encoder 1**
- 2 = Encoder 2

Specifies the encoder that acts as the source for generating the actual speed. Startup sets the parameter to the correct value.

8565.3 Actual position source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No encoder
- **1 = Encoder 1**
- 2 = Encoder 2

Specifies the encoder that acts as the source for generating the actual position. Startup sets the parameter to the correct value.

1.1.157 8566 Encoder assignment DT2

Encoder assignment for drive train 2

8566.1 Connected encoders

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 1 = Encoder 1
- 1 = Encoder 1

Specifies the encoders connected to the inverter. Startup sets the parameter to the correct value.

8566.2 Source actual speed

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No encoder**
- 1 = Encoder 1
- 2 = Encoder 2

Specifies the encoder that acts as the source for generating the actual speed. Startup sets the parameter to the correct value.

8566.3 Actual position source

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No encoder**
- 1 = Encoder 1
- 2 = Encoder 2

Specifies the encoder that acts as the source for generating the actual position. Startup sets the parameter to the correct value.

1.1.158 8567 "Motor at standstill" signal data DT1

"Motor at standstill" signal data drive train 1

8567.1 Speed threshold

Factory setting: 100000

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 20000 to 2000000

Speed value at the motor shaft from which the inverter signals that the motor is at standstill.

8567.2 Filter time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 25

A filter time can be defined to suppress interference. The filter acts like a delay time. During this time, the speed must be kept over or under the threshold to effect a change of the signal.

1.1.159 8568 "Motor at standstill" signal data DT2

"Motor at standstill" signal data drive train 2

8568.1 Speed threshold

Factory setting: 100000

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: 20000 to 2000000

Speed value at the motor shaft from which the inverter signals that the motor is at standstill.

8568.2 Filter time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 25

A filter time can be defined to suppress interference. The filter acts like a delay time. During this time, the speed must be kept over or under the threshold to effect a change of the signal.

1.1.160 8569 "Motor at standstill" signal

8569.1 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Motor at standstill – unfiltered
- 1 = Motor at standstill – filtered

This parameter provides the "Motor at standstill" state as bits for output at the digital outputs and status words.

1.1.161 8570 FCB 05 Speed control data DT1

The application inverter can be operated as speed-controlled axis.

You can specify limit values for acceleration, deceleration, and jerk as the basic conditions for speed control. The actual speed setpoint for the drive controller is generated in the controller cycle by a profile generator integrated in the inverter using the specified limit values.

8570.1 Activation of stop by setpoint function

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

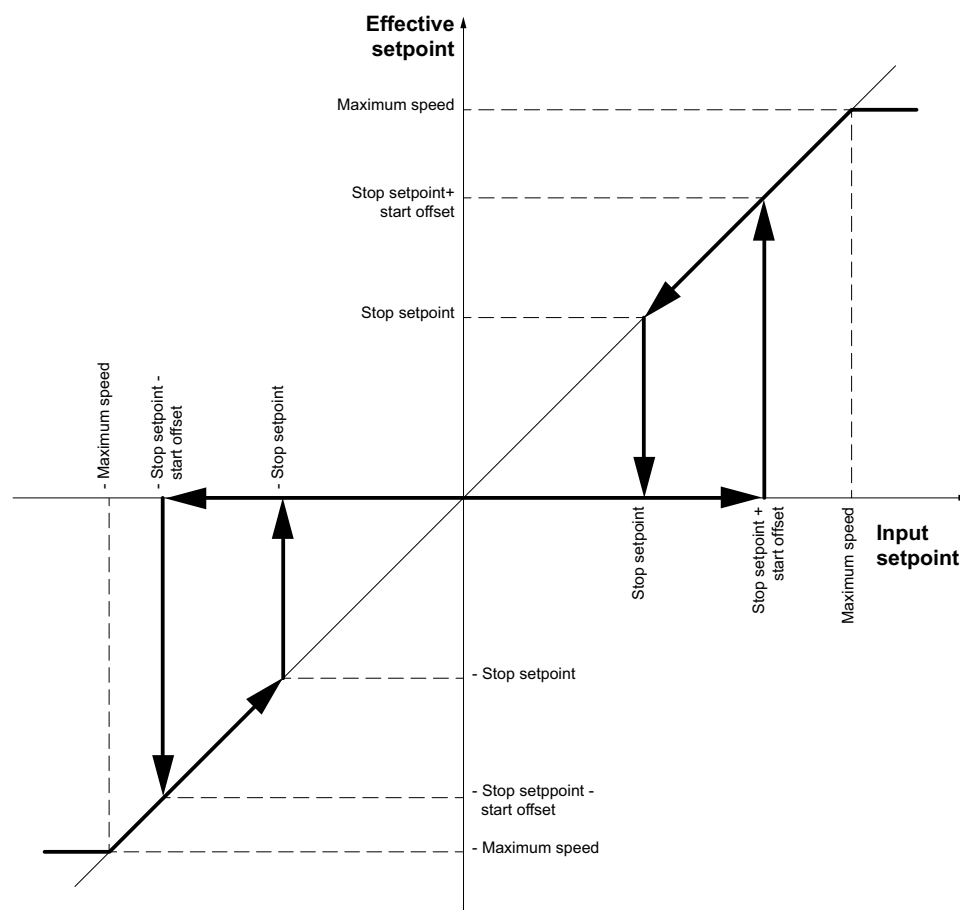
If the stop by setpoint function is enabled, the drive will only be enabled when the speed setpoint is greater than the parameterized enable limit.

The following applies: Enable setpoint = stop setpoint + start offset.

If the speed setpoint falls below the stop setpoint, the drive will be stopped with the deceleration set in FCB "Speed control". If the brake function is active, the brake will be applied at motor standstill and the output stage will be inhibited.

Observe the following special cases:

- If the speed setpoint is smaller than the enable setpoint, the drive will also be stopped when it has previously been enabled by another FCB.
- If FCB "Speed control" is already active when the stop by setpoint function is activated, the drive will remain enabled even when the speed setpoint is greater than the stop setpoint.



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8570.2 Stop setpoint

Factory setting: 1600000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5000000

Setpoint of the stop by setpoint function.

The drive is stopped when the speed setpoint drops below the stop setpoint.

8570.3 Start offset

Factory setting: 300000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5000000

Start offset of the stop by setpoint function.

The drive is only enabled when the speed setpoint exceeds the enable setpoint.

The following applies: Enable setpoint = stop setpoint + start offset

8570.10 Activation of speed skip function

Factory setting:

Data type: Enum

Data length: 1

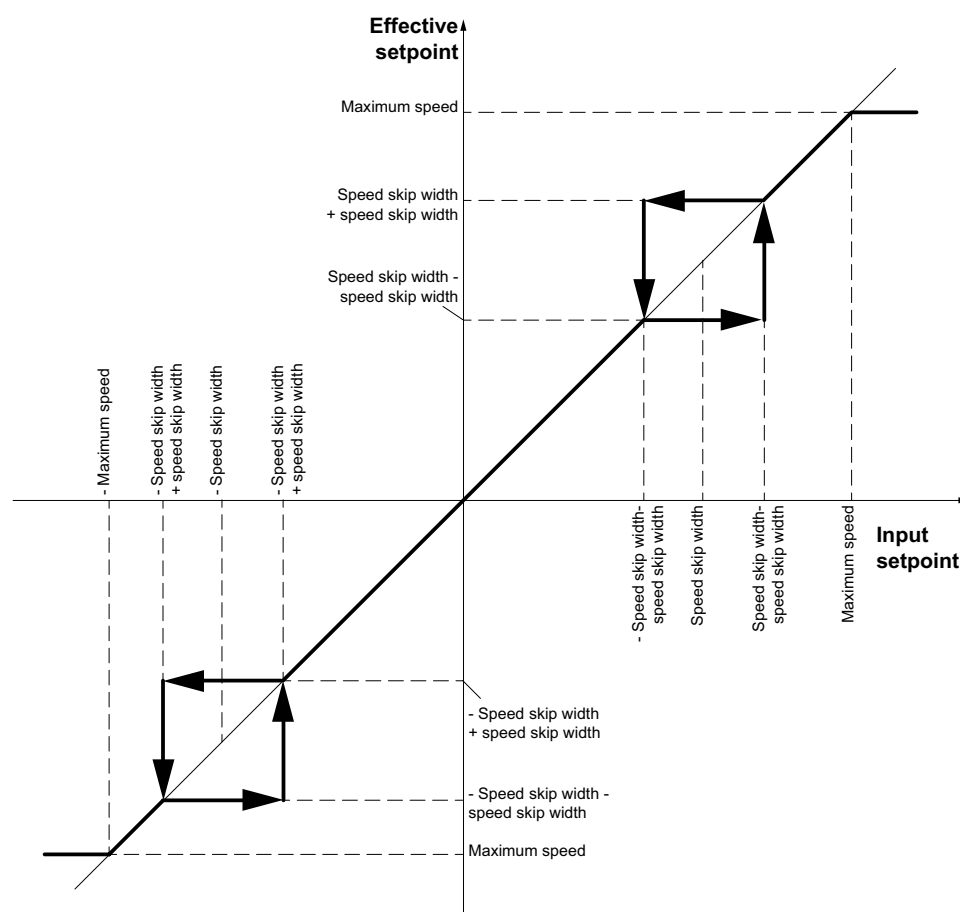
Value range:

- 0 = Off
- 1 = ON

The speed skip function prevents the motor speed from remaining within a certain speed window. This function is particularly useful for machines with strong mechanical resonance because the skip function helps suppress vibrations and noise.

The following settings can be made:

- Off: No speed range is skipped.
- On: The speed skip center +/- speed skip bandwidth is skipped.



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8570.11 Speed – skip center

Factory setting: 15000000
 Unit: 1E-4/min user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 360000000
 Speed skip function – resonance speed

8570.12 Speed – skip width

Factory setting: 0
 Unit: 1E-4/min user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 3000000
 Speed skip function – skip hysteresis

1.1.162 8571 FCB 05 Speed control data DT2

The application inverter can be operated as speed-controlled axis.

You can specify limit values for acceleration, deceleration, and jerk as the basic conditions for speed control. The actual speed setpoint for the drive controller is generated in the controller cycle by a profile generator integrated in the inverter using the specified limit values.

8571.1 Activation of stop by setpoint function

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- **0 = Off**
- **1 = ON**

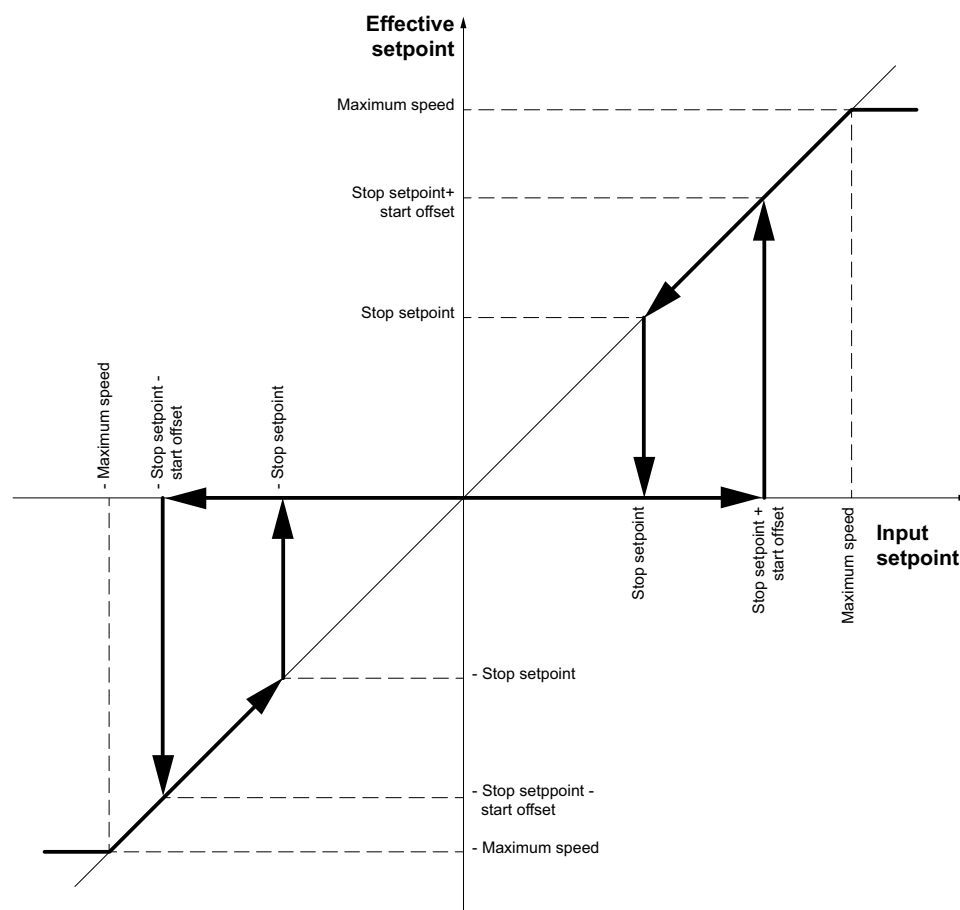
If the stop by setpoint function is enabled, the drive will only be enabled when the speed setpoint is greater than the parameterized enable limit.

The following applies: Enable setpoint = stop setpoint + start offset.

If the speed setpoint falls below the stop setpoint, the drive will be stopped with the deceleration set in FCB "Speed control". If the brake function is active, the brake will be applied at motor standstill and the output stage will be inhibited.

Observe the following special cases:

- If the speed setpoint is smaller than the enable setpoint, the drive will also be stopped when it has previously been enabled by another FCB.
- If FCB "Speed control" is already active when the stop by setpoint function is activated, the drive will remain enabled even when the speed setpoint is greater than the stop setpoint.



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8571.2 Stop setpoint

Factory setting: 1600000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5000000

Setpoint of the stop by setpoint function.

The drive is stopped when the speed setpoint drops below the stop setpoint.

8571.3 Start offset

Factory setting: 300000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 5000000

Start offset of the stop by setpoint function.

The drive is only enabled when the speed setpoint exceeds the enable setpoint.

The following applies: Enable setpoint = stop setpoint + start offset

8571.10 Activation of speed skip function

Factory setting:

Data type: Enum

Data length: 1

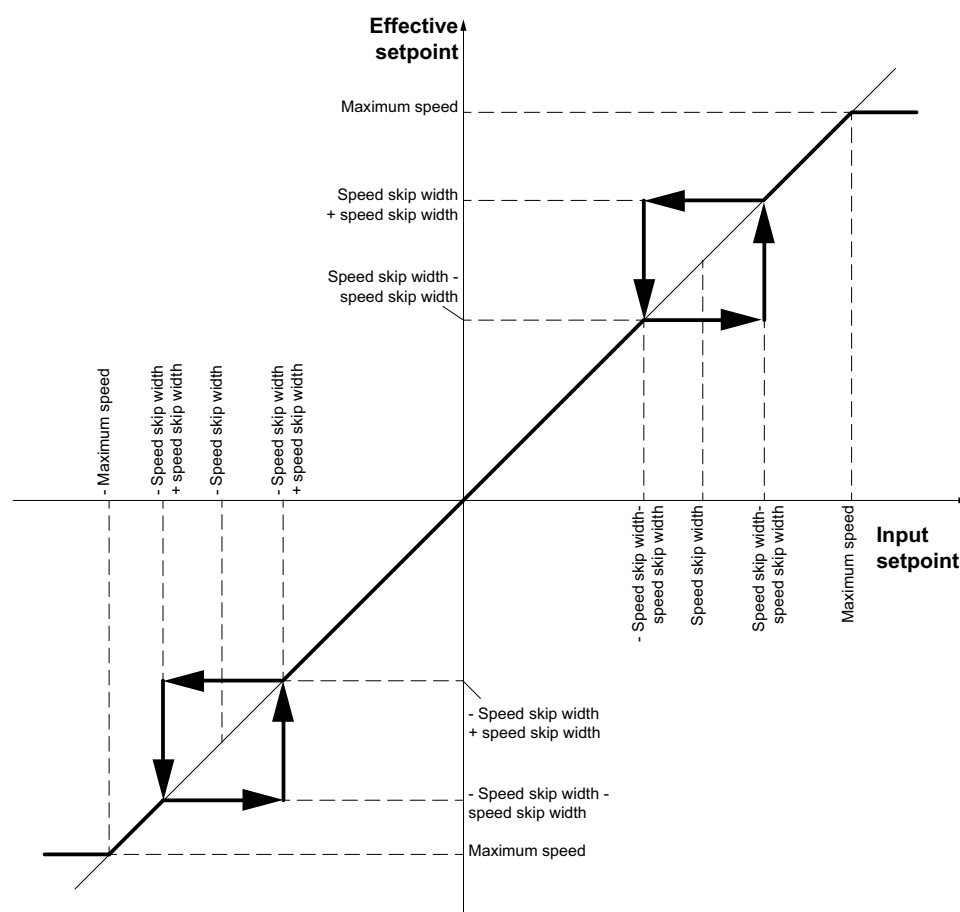
Value range:

- **0 = Off**
- **1 = ON**

The speed skip function prevents the motor speed from remaining within a certain speed window. This function is particularly useful for machines with strong mechanical resonance because the skip function helps suppress vibrations and noise.

The following settings can be made:

- Off: No speed range is skipped.
- On: The speed skip center +/- speed skip bandwidth is skipped.



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8571.11 Speed – skip center

Factory setting: 15000000
 Unit: 1E-4/min user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 360000000
 Speed skip function – resonance speed

8571.12 Speed – skip width

Factory setting: 0
 Unit: 1E-4/min user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: 0 to 3000000
 Speed skip function – skip hysteresis

1.1.163 8572 Limit switch data DT1

MOVI-C® allows for monitoring hardware limit switches depending on the drive train. When a hardware limit switch is hit, a programmable response is triggered. To move clear of the limit switch, movement is only permitted in opposite direction.

8572.1 HW limit switch hit response

Factory setting:
 Data type: Enum
 Data length: 1
 Value range:

- 0 = No response
- **3 = Emergency stop + output stage inhibit**
- 53 = Emergency stop + output stage inhibit with self reset

Response to a hit hardware limit switch.

The following settings can be made:

- No response
- Emergency stop + output stage inhibit: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop + output stage inhibit with self reset: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited. When a setpoint is applied in the opposite direction, the fault is acknowledged automatically and the drive moves clear of the hardware limit switch.

8572.2 SW limit switch hit response

Factory setting:
 Data type: Enum

Data length: 1

Value range:

- 0 = No response
- **3 = Emergency stop + output stage inhibit**
- 53 = Emergency stop + output stage inhibit with self reset

Response to a hit software limit switch.

The following settings can be made:

- No response
- Emergency stop + output stage inhibit: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop + output stage inhibit with self reset: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited. When a setpoint is applied in the opposite direction, the fault is acknowledged automatically and the drive moves clear of the software limit switch.

8572.3 Monitoring SW limit switch negative

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Specifies that the position between two software limit switches is monitored. If you specify a position outside the limit switches, the drive will not move but the set response will be performed.

8572.4 SW limit switch negative

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position of the negative software limit switch.

8572.5 Monitoring SW limit switch positive

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Specifies that the position between two software limit switches is monitored. If you specify a position outside the limit switches, the drive will not move but the set response will be performed.

8572.6 SW limit switch positive

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position of the positive software limit switch.

1.1.164 8573 Limit switch data DT2

MOVI-C® allows for monitoring hardware limit switches depending on the drive train. When a hardware limit switch is hit, a programmable response is triggered. To move clear of the limit switch, movement is only permitted in opposite direction.

8573.1 HW limit switch hit response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- **3 = Emergency stop + output stage inhibit**
- 53 = Emergency stop + output stage inhibit with self reset

Response to a hit hardware limit switch.

The following settings can be made:

- No response
- Emergency stop + output stage inhibit: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop + output stage inhibit with self reset: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited. When a setpoint is applied in the opposite direction, the fault is acknowledged automatically and the drive moves clear of the hardware limit switch.

8573.2 SW limit switch hit response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- **3 = Emergency stop + output stage inhibit**
- 53 = Emergency stop + output stage inhibit with self reset

Response to a hit software limit switch.

The following settings can be made:

- No response
- Emergency stop + output stage inhibit: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop + output stage inhibit with self reset: The drive is decelerated at the emergency stop ramp, then the output stage is inhibited. When a setpoint is applied in the opposite direction, the fault is acknowledged automatically and the drive moves clear of the software limit switch.

8573.3 Monitoring SW limit switch negative

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Specifies that the position between two software limit switches is monitored. If you specify a position outside the limit switches, the drive will not move but the set response will be performed.

8573.4 SW limit switch negative

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position of the negative software limit switch.

8573.5 Monitoring SW limit switch positive

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Off**
- 1 = ON

Specifies that the position between two software limit switches is monitored. If you specify a position outside the limit switches, the drive will not move but the set response will be performed.

8573.6 SW limit switch positive

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Position of the positive software limit switch.

8573.7 Use HW limit switches DT1 also in DT2

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

For monitoring the hardware limit switches, the hardware limit switches of drive train 1 are also used for drive train 2. The setting is useful when the same drive is used with different control odes or encoder configurations in both drive trains.

1.1.165 8576 Primary frequency input

Primary frequency input

8576.1 Input level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Primary frequency input

Input level

8576.2 Maximum frequency

Factory setting: 10000000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Value range: 100000 to 120000000

Maximum input frequency at which the maximum speed is reached.

8576.3 Determined frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 100

Value range: 0 to 2147483647

Frequency determined at the frequency input.

8576.4 Maximum speed DT1

Factory setting: 200000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum speed in drive train 1 at which the maximum frequency is reached.

8576.5 Determined speed setpoint

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Speed setpoint calculated from the determined frequency.

8576.14 Maximum speed DT2

Factory setting: 200000000

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 360000000

Maximum speed in drive train 2 at which the maximum frequency is reached.

1.1.166 8577 Cam switch

The purpose of a cam switch is to control actuators during a motion sequence or to control machine processes.

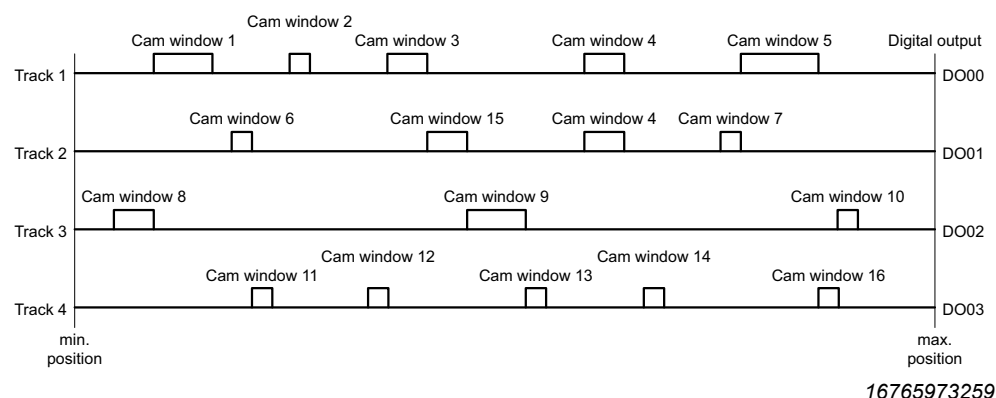
A cam switch consists of several cam tracks. Each cam track is assigned a binary switching signal. A cam track is divided into cam windows.

A cam window is a value range within which the switching signal of the cam track assumes a certain, defined value.

A total of 16 cam windows can be defined, and 4 cam tracks can be assigned to each cam window. Each cam track generates a binary switching signal that is set as soon as the actual position is within one of the assigned cam windows.

The switching signal can be output at a digital output or on a process data bit.

The following figure shows an example of how cam windows and digital outputs can be assigned to the individual tracks.



16765973259

All cam tracks are processed with a cycle time of 500 μ s.

8577.1 Activate

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Activates the cam switch function.

8577.2 Result

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Track 1
- 1 = Track 2
- 2 = Track 3
- 3 = Track 4

Indicates in a bit-wise coded manner whether the drive is located at least on one cam of the respective track.

The following settings can be made:

- Bit 0: At least one cam in track 1 is approached.
- Bit 1: At least one cam in track 2 is approached.
- Bit 2: At least one cam in track 3 is approached.
- Bit 3: At least one cam in track 4 is approached.

8577.3 Data source

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function
- 8364.25 Actual position in system units
- 8364.26 Actual position in user units
- 8364.27 Actual position in user unit – modulo
- 8367.10 PO data word
- 8367.11 PO data word
- 8367.12 PO data word
- 8367.13 PO data word
- 8367.14 PO data word
- 8367.15 PO data word
- 8367.16 PO data word
- 8367.17 PO data word
- 8367.18 PO data word
- 8367.19 PO data word
- 8367.20 PO data word
- 8367.21 PO data word
- 8367.22 PO data word
- 8367.23 PO data word
- 8367.24 PO data word
- 8367.25 PO data word

Source from which the cam switch function obtains its actual position.

8577.4 PO data format

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = 16 bits**
- 1 = 32 bit – big endian
- 2 = 32 bit – little endian

Specifies the file format when accessing process output data words. The process output data words with a word width of 16 bits can be combined to a 32-bit value using the data format. This parameter has no effect for data sources with a word width of 32 bits.

8577.5 Modulo – minimum interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

For the "actual position in user units – modulo" data source, the modulo value ranges of the encoder apply.

For other data sources (in particular with PO data), the cam switch cannot automatically determine the modulo range of the source. In this case, you can set the modulo limits using the parameters "Modulo – minimum interpretation" and "Modulo – maximum interpretation".

These parameters will only be evaluated if different values are entered.

8577.6 Modulo – maximum interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -1073741824 to 1073741823

For the "Actual position in user unit – modulo" data source, the modulo value ranges of the encoder apply.

For other data sources (in particular with PO data), the cam switch cannot automatically determine the modulo range of the source. In this case, you can set the modulo limits using the parameters "Modulo – minimum interpretation" and "Modulo – maximum interpretation".

These parameters will only be evaluated if different values are entered.

8577.7 Force-on mask

Factory setting:

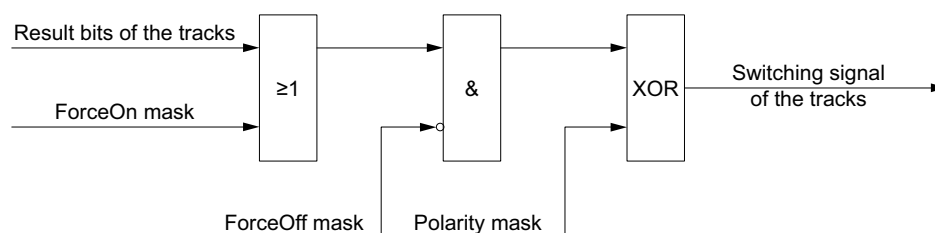
Data type: Bit field

Data length: 1

Value range:

- 0 = Track 1
- 1 = Track 2
- 2 = Track 3
- 3 = Track 4

The switching signals for all 4 cam tracks can be influenced by means of various forcing settings. You can use a force-on mask to permanently activate certain cam tracks.



16765970827

The following settings can be made:

- Bit 0 = 1: Cam track 1 is forced to "on".

- Bit 1 = 1: Cam track 2 is forced to "on".
- Bit 2 = 1: Cam track 3 is forced to "on".
- Bit 3 = 1: Cam track 4 is forced to "on".

8577.8 Force-off mask

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Track 1
- 1 = Track 2
- 2 = Track 3
- 3 = Track 4

Disables the cam track permanently. The force-off mask has a higher priority than the force-on mask.

The following settings can be made:

- Bit 0 = 1: Cam track 1 is forced to "off".
- Bit 1 = 1: Cam track 2 is forced to "off".
- Bit 2 = 1: Cam track 3 is forced to "off".
- Bit 3 = 1: Cam track 4 is forced to "off".

8577.9 Polarity mask

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Track 1
- 1 = Track 2
- 2 = Track 3
- 3 = Track 4

Specifies whether a cam track is 0-active or 1-active.

The following settings can be made:

- Bit 0 = 1: Cam track 1 is negated.
- Bit 1 = 1: Cam track 2 is negated.
- Bit 2 = 1: Cam track 3 is negated.
- Bit 3 = 1: Cam track 4 is negated.

8577.10 Cam track 1 – activate

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Activation of cam track 1.

The following settings can be made:

- Yes: The cam signals are active.
- No: The cam signals remain permanently set to "0".

8577.11 Cam track 1 – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 100

Value range: -500000 to 500000

A dead time compensation of -500 to +500 ms can be specified for the input values of the cam switch. The purpose is that not the actual value is used for comparison but the value that was calculated linearly forwards or backwards by the dead time. This procedure might result in incorrect values due to mixed-up actual values. To achieve smoothing, you can specify a time base for the prediction. This time specifies the age of the predecessor value for linear extrapolation. The direction of this straight line equals the direction of movement with which the activation direction of the cam window is compared.

8577.12 Cam track 1 – time window

Factory setting: 10000

Unit: μ s

Data type: UInt32

Data length: 1

Resolution: 1000

Value range: 1000 to 64000

A noisy actual value in connection with parameter "Cam track 1 – dead time" might result in incorrectly calculated values. To achieve smoothing, you can specify a time base for the prediction. This parameter determines the age of the previous value for the linear extrapolation.

This time window is also the basis for the parameter "CAM direction", i.e. the time base also smoothens the direction definition of the cam source.

8577.13 Cam track 1 – hysteresis

Factory setting: 0

Unit:

Data type: UInt32

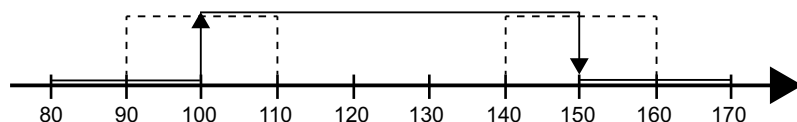
Data length: 1

Resolution: 1

Value range: 0 to 2147483647

If an input value fluctuates around the limit of a cam window, then also the switching result and consequently the state of the cam will jitter. To eliminate this usually undesired behavior, each cam track has a hysteresis value. This value defines a hysteresis window around the limits of the cam window (limit value $\pm$ hysteresis value). As soon as the switching result of a track changes, the hysteresis becomes active. The track is not re-evaluated as long as the value is within the hysteresis window.

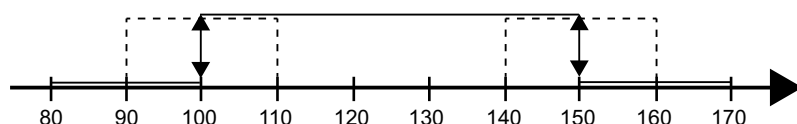
Example of only one activation direction:



16728285835

Value	State of the cam	Description
80	0	Value outside cam window.
90	0	Value outside cam window.
100	1	Limit belongs to cam window, direction correct (from left), hysteresis becomes active.
90	1	Value still within hysteresis window → no new evaluation.
120	1	Value within cam window.
150	1	Limit belongs to cam window.
151	0	Cam window is left, hysteresis becomes active.
140	0	Value still within hysteresis window → no new evaluation.
139	0	Value within cam window, outside hysteresis, wrong direction (from right).

Example of two activation directions:



16728283403

Value	State of the cam	Description
80	0	Value outside cam window.
90	0	Value outside cam window.
100	1	Limit belongs to cam window, direction irrelevant, hysteresis becomes active
90	1	Value still within hysteresis window → no new evaluation.
120	1	Value within cam window.
150	1	Limit belongs to cam window.
151	0	Cam window is left, hysteresis becomes active.
140	0	Value still within hysteresis window → no new evaluation.

Value	State of the cam	Description
139	1	Value within cam window, outside hysteresis, direction irrelevant
151	0	Cam window is left, hysteresis becomes active.
161	0	Value outside cam window, outside hysteresis,
150	1	Limit belongs to cam window, direction irrelevant, hysteresis becomes active

8577.14 Cam track 1 – cam window assignment

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Cam window 1
- 1 = Cam window 2
- 2 = Cam window 3
- 3 = Cam window 4
- 4 = Cam window 5
- 5 = Cam window 6
- 6 = Cam window 7
- 7 = Cam window 8
- 8 = Cam window 9
- 9 = Cam window 10
- 10 = Cam window 11
- 11 = Cam window 12
- 12 = Cam window 13
- 13 = Cam window 14
- 14 = Cam window 15
- 15 = Cam window 16

Bits 0 to 15 can be used to assign cam windows 0 to 15 to the cam track.

Bit = 1: Cam window is assigned.

8577.20 Cam track 2 – activate

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Activation of cam track 2

8577.21 Cam track 2 – dead time

Factory setting: 0

Unit: μs

Data type: Int32

Data length: 1

Resolution: 100

Value range: -500000 to 500000

Dead time of cam track 2.

8577.22 Cam track 2 – time window

Factory setting: 10000

Unit: μs

Data type: Uint32

Data length: 1

Resolution: 1000

Value range: 1000 to 64000

Time window of cam track 2.

8577.23 Cam track 2 – hysteresis

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Hysteresis of cam track 2.

8577.24 Cam track 2 – cam window assignment

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Cam window 1
- 1 = Cam window 2
- 2 = Cam window 3
- 3 = Cam window 4
- 4 = Cam window 5
- 5 = Cam window 6
- 6 = Cam window 7
- 7 = Cam window 8
- 8 = Cam window 9
- 9 = Cam window 10

- 10 = Cam window 11
- 11 = Cam window 12
- 12 = Cam window 13
- 13 = Cam window 14
- 14 = Cam window 15
- 15 = Cam window 16

Assignment of the cam window to cam track 2.

8577.30 Cam track 3 – activate

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Activation of cam track 3

8577.31 Cam track 3 – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 100

Value range: -500000 to 500000

Dead time of cam track 3.

8577.32 Cam track 3 – time window

Factory setting: 10000

Unit: μ s

Data type: UInt32

Data length: 1

Resolution: 1000

Value range: 1000 to 64000

Time window of cam track 3.

8577.33 Cam track 3 – hysteresis

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 2147483647

Hysteresis of cam track 3.

8577.34 Cam track 3 – cam window assignment

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Cam window 1
- 1 = Cam window 2
- 2 = Cam window 3
- 3 = Cam window 4
- 4 = Cam window 5
- 5 = Cam window 6
- 6 = Cam window 7
- 7 = Cam window 8
- 8 = Cam window 9
- 9 = Cam window 10
- 10 = Cam window 11
- 11 = Cam window 12
- 12 = Cam window 13
- 13 = Cam window 14
- 14 = Cam window 15
- 15 = Cam window 16

Assignment of the cam window to cam track 3.

8577.40 Cam track 4 – activate

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Activation of cam track 4

8577.41 Cam track 4 – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 100

Value range: -500000 to 500000

Dead time of cam track 4.

8577.42 Cam track 4 – time window

Factory setting: 10000
Unit: μ s
Data type: Uint32
Data length: 1
Resolution: 1000
Value range: 1000 to 64000
Time window of cam track 4.

8577.43 Cam track 4 – hysteresis

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Value range: 0 to 2147483647
Hysteresis of cam track 4.

8577.44 Cam track 4 – cam window assignment

Factory setting:
Data type: Bit field
Data length: 1
Value range:

- 0 = Cam window 1
- 1 = Cam window 2
- 2 = Cam window 3
- 3 = Cam window 4
- 4 = Cam window 5
- 5 = Cam window 6
- 6 = Cam window 7
- 7 = Cam window 8
- 8 = Cam window 9
- 9 = Cam window 10
- 10 = Cam window 11
- 11 = Cam window 12
- 12 = Cam window 13
- 13 = Cam window 14
- 14 = Cam window 15
- 15 = Cam window 16

Assignment of the cam window to cam track 4.

8577.50 Cam window 1 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 1.

8577.51 Cam window 1 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 1.

8577.52 Cam window 1 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

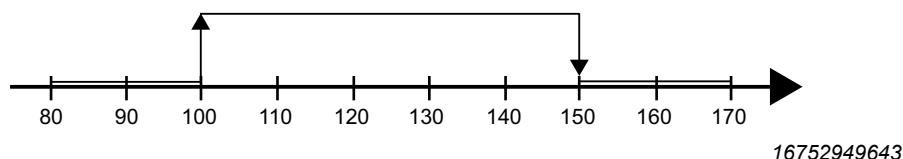
For each cam window you can specify the direction from which the window is to be approached so that the switching signal becomes active. This means the values must correspond to the activation direction.

Not only the direction of travel is decisive for a direction-dependent cam but also whether this window is approached from outside. If a cam is approached from the wrong direction and the direction is changed within the window, then the switching signal remains inactive although the travel direction is now correct.

To deactivate the cam, the value must be outside the cam window. The direction is not relevant in this case.

The direction is only relevant for activation. The result is that the cam state is maintained when returning to a direction-dependent cam and is not reset immediately when the direction is reversed.

Example:



8577.60 Cam window 2 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 2.

8577.61 Cam window 2 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 2.

8577.62 Cam window 2 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 2.

8577.70 Cam window 3 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 3.

8577.71 Cam window 3 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 3.

8577.72 Cam window 3 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 3.

8577.80 Cam window 4 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 4.

8577.81 Cam window 4 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 4.

8577.82 Cam window 4 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 4.

8577.90 Cam window 5 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 5.

8577.91 Cam window 5 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 5.

8577.92 Cam window 5 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 5.

8577.100 Cam window 6 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 6.

8577.101 Cam window 6 – right limit

Factory setting: 0

Unit:

Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Right limit of cam window 6.

8577.102 Cam window 6 – activation direction

Factory setting:
Data type: Enum
Data length: 1
Value range:
• **0 = Deactivated**
• 1 = From left
• 2 = From right
• 3 = From both directions
Activation direction of cam window 6.

8577.110 Cam window 7 – left limit

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Left limit of cam window 7.

8577.111 Cam window 7 – right limit

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Value range: -2147483648 to 2147483647
Right limit of cam window 7.

8577.112 Cam window 7 – activation direction

Factory setting:
Data type: Enum
Data length: 1
Value range:
• **0 = Deactivated**
• 1 = From left

- 2 = From right
- 3 = From both directions

Activation direction of cam window 7.

8577.120 Cam window 8 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 8.

8577.121 Cam window 8 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 8.

8577.122 Cam window 8 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 8.

8577.130 Cam window 9 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 9.

8577.131 Cam window 9 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 9.

8577.132 Cam window 9 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 9.

8577.140 Cam window 10 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 10.

8577.141 Cam window 10 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 10.

8577.142 Cam window 10 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 10.

8577.150 Cam window 11 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 11.

8577.151 Cam window 11 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 11.

8577.152 Cam window 11 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 11.

8577.160 Cam window 12 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 12.

8577.161 Cam window 12 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 12.

8577.162 Cam window 12 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 12.

8577.170 Cam window 13 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 13.

8577.171 Cam window 13 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 13.

8577.172 Cam window 13 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 13.

8577.180 Cam window 14 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 14.

8577.181 Cam window 14 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 14.

8577.182 Cam window 14 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 14.

8577.190 Cam window 15 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 15.

8577.191 Cam window 15 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 15.

8577.192 Cam window 15 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 15.

8577.200 Cam window 16 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Left limit of cam window 16.

8577.201 Cam window 16 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Right limit of cam window 16.

8577.202 Cam window 16 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Deactivated**
- 1 = From left
- 2 = From right
- 3 = From both directions

Activation direction of cam window 16.

1.1.167 8579 Counter function

Counter function

8579.1 Input level

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Counter input

Input level

8579.2 Edge detection

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Rising edge**
- 1 = Falling edge
- 2 = Rising and falling edge

Specifies at which edges the counter is modified.

8579.3 Counting direction

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Up**
- 1 = Down

Counting direction of the counter.

8579.4 Error behavior

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Continue counting**
- 1 = Stop
- 2 = Set to zero
- 3 = Restart

Behavior of the counter in the event of a device fault.

8579.5 Counter value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 65535

Current value of the counter.

8579.6 Counter mode

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Permanent counting**
- 1 = Stop counting

Defines the behavior of the counter when reaching the counter limit.

1.1.168 8580 Digital inputs I/O card

This parameter specifies the assignment of the digital inputs of the I/O card.

8580.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10
- 1 = DI 11
- 2 = DI 12
- 3 = DI 13

Current states of the digital inputs of the I/O card.

Bit x represents the state of input DI 1x.

8580.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10
- 1 = DI 11
- 2 = DI 12
- 3 = DI 13

Indicates whether the function programmed for the digital input is "0-active" (e. g. limit switch).

Bit x = 1: Digital input DI 1x is "0-active".

8580.3 Function state

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10
- 1 = DI 11
- 2 = DI 12
- 3 = DI 13

Indicates whether the programmed function is active on the digital input taking into account the negation mask (index 8580.2).

Bit x = 1: The function programmed for digital input DI 1x is active.

8580.6 Available inputs

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DI 10
- 1 = DI 11
- 2 = DI 12
- 3 = DI 13

Indicates the digital inputs that are actually present on the I/O card.

Is used by the user interface to hide parameters that are not effective in the current hardware configuration.

8580.10 Function DI 10

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"

- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O card"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 10 of the I/O card.

8580.11 Function DI 11

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"

- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O card"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 11 of the I/O card.

8580.12 Function DI 12

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8349.18 Bit 0 "Data Flexibility input"
- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"

- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O card"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 12 of the I/O card.

8580.13 Function DI 13

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive DT1"
- 8314.2 Bit 1 "HW limit switch negative DT1"
- 8314.2 Bit 2 "HW limit switch positive DT2"
- 8314.2 Bit 3 "HW limit switch negative DT2"
- 8322.3 Bit 0 "Activate drive train 1"
- 8322.3 Bit 1 "Activate drive train 2"
- 8349.18 Bit 0 "Data Flexibility input"

- 8354.21 Bit 0 "Fixed speed setpoint bit 0"
- 8354.21 Bit 1 "Fixed speed setpoint bit 1"
- 8354.21 Bit 2 "Fixed speed setpoint bit 2"
- 8354.23 Bit 0 "Fixed setpoints – positive direction of rotation"
- 8354.23 Bit 1 "Fixed setpoints – negative direction of rotation"
- 8354.24 Bit 0 "Activate ramp set 2"
- 8365.6 Bit 0 "Fault reset"
- 8365.6 Bit 1 "External fault – active"
- 8365.6 Bit 2 "External braking resistor fault"
- 8500.4 Bit 1 "FCB 01 Output stage inhibited"
- 8500.4 Bit 5 "FCB 05 Speed control"
- 8500.4 Bit 6 "FCB 06 Interpolated speed control"
- 8500.4 Bit 7 "FCB 07 Torque control"
- 8500.4 Bit 8 "FCB 08 Interpolated torque control"
- 8500.4 Bit 9 "FCB 09 Position control"
- 8500.4 Bit 10 "FCB 10 Interpolated position control"
- 8500.4 Bit 12 "FCB 12 Reference travel "
- 8500.4 Bit 13 "FCB 13 Stop at application limits"
- 8500.4 Bit 14 "FCB 14 Emergency stop"
- 8500.4 Bit 18 "FCB 18 Rotor position identification"
- 8500.4 Bit 19 "FCB 19 Position hold control"
- 8500.4 Bit 20 "FCB 20 Jog mode"
- 8500.4 Bit 21 "FCB 21 Brake test"
- 8500.4 Bit 25 "FCB 25 Motor parameter measurement"
- 8500.4 bit 26" FCB 26 Stop at user-defined limits"
- 8501.1 Bit 0 "Release brake/DynaStop® with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 8509.5 Bit 2 "FCB 09 Position control – operating mode bit 0"
- 8509.5 Bit 3 "FCB 09 Position control – operating mode bit 1"
- 8509.5 Bit 4 "FCB 09 Position control – operating mode bit 2"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8520.11 Bit 0 "FCB 20 Jog mode – positive"
- 8520.11 Bit 1 "FCB 20 Jog mode – negative"
- 8520.11 Bit 2 "FCB 20 Jog mode – fixed speed setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user-defined limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O card"
- 8703.6 Bit 0 "Activate SBT"

Assignment of digital input DI 13 of the I/O card.

1.1.169 8581 Digital outputs I/O card

These parameters specify the assignment of the digital outputs of the I/O card.

8581.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

Current states of the digital outputs of the I/O card.

Bit x represents the state of digital output DO 1x.

8581.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

Indicates whether the programmed function of the digital output is "0-active".

Bit x = 1: Digital output DO 1x is "0-active".

8581.3 Function state

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

Indicates whether the programmed function is active on the digital output taking into account the negation mask (index 8581.2).

Bit x = 1: The function programmed for digital output DO 1x is active.

8581.6 Available outputs

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = DO 10
- 1 = DO 11
- 2 = DO 12
- 3 = DO 13

Indicates the digital outputs that are actually present on the hardware of the I/O card.

Is used by the user interface to hide parameters that are not effective in the current hardware configuration.

8581.10 Function DO 10

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"

- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"

- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 10 of the I/O card.

8581.11 Function DO 11

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"

- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"

- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"

- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 11 of the I/O card.

8581.12 Function DO 12

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"
- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"

- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"
- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"

- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"
- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 12 of the I/O card.

8581.13 Function DO 13

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Value range:

- 0.0 Bit 0 "No function"
- 8312.8 Bit 1 "Heat sink temperature prewarning"
- 8312.8 Bit 2 "Electromechanical utilization prewarning"
- 8314.1 Bit 0 "HW limit switch positive – active"
- 8314.1 Bit 1 "HW limit switch negative – active"
- 8314.1 Bit 4 "SW limit switch positive – active"
- 8314.1 Bit 5 "SW limit switch negative – active"

- 8322.1 Bit 0 "Drive train 1 active"
- 8322.1 Bit 1 "Drive train 2 active"
- 8323.1 Bit 0 "Speed reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual speed comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Speed window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation application limit – speed"
- 8327.1 Bit 1 "Setpoint limitation application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation drive train – maximum torque"
- 8331.7 Bit 1 "In position" signal active"
- 8332.1 Bit 0 "Ready for operation"
- 8332.1 Bit 1 "Output stage enable"
- 8332.1 Bit 2 "Setpoints active"
- 8332.1 Bit 5 "Limits active"
- 8332.1 Bit 6 "Active drive referenced"
- 8332.1 Bit 7 "Safety card "RUN" active"
- 8332.1 Bit 8 "Manual mode active"
- 8332.1 Bit 9 "Configuration state"
- 8332.1 Bit 10 "Power ON"
- 8332.1 Bit 11 "Current FCB activated by safety card"
- 8332.1 Bit 13 "Manual mode/local mode active"
- 8332.7 Bit 0 "DC 24 V backup mode"
- 8332.7 Bit 1 "Internal supply faulty"
- 8332.7 Bit 2 "STO active"
- 8332.7 Bit 3 "Power section not ready"
- 8332.7 Bit 5 "External device not ready – active"
- 8332.7 Bit 6 "Data Flexibility not ready"
- 8332.7 Bit 7 "Encoder system(s) not ready"
- 8332.7 Bit 8 "Motor management not ready"
- 8332.7 Bit 9 "Task system not synchronized"
- 8332.7 Bit 11 "Startup state"
- 8332.7 Bit 15 "Module bus not ready"
- 8334.1 Bit 0 "DI 00"
- 8334.1 Bit 1 "DI 01"
- 8334.1 Bit 2 "DI 02"
- 8334.1 Bit 3 "DI 03"
- 8334.1 Bit 4 "DI 04"
- 8334.1 Bit 5 "DI 05"

- 8339.1 Bit 0 "Setpoint/actual torque comparison" signal active"
- 8364.13 Bit 0 "User-defined current limit reached"
- 8364.13 Bit 8 "User-defined torque limit reached"
- 8365.7 Bit 0 "Warning"
- 8365.7 Bit 1 "Fault"
- 8365.7 Bit 2 "Fault with output stage inhibit"
- 8365.7 Bit 3 "Fault acknowledgement with CPU reset"
- 8381.130 Bit 7 "Encoder 1 referenced"
- 8382.130 Bit 7 "Encoder 2 referenced"
- 8439.3 Bit 0 "Current motor protection – prewarning"
- 8442.55 Bit 0 "Motor protection 1 – prewarning"
- 8443.55 Bit 0 "Motor protection 2 – prewarning"
- 8450.1 Bit 0 "Current limit of Ex protection function category 2 – active"
- 8500.2 Bit 1 "FCB 01 Output stage inhibit – active"
- 8500.2 Bit 2 "FCB 02 Stop default – active"
- 8500.2 Bit 4 "FCB 04 Manual mode – active"
- 8500.2 Bit 5 "FCB 05 Speed control – active"
- 8500.2 Bit 6 "FCB 06 Interpolated speed control – active"
- 8500.2 Bit 7 "FCB 07 Torque control – active"
- 8500.2 Bit 8 "FCB 08 Interpolated torque control – active"
- 8500.2 Bit 9 "FCB 09 Position control – active"
- 8500.2 Bit 10 "FCB 10 Interpolated position control – active"
- 8500.2 Bit 12 "FCB 12 Reference travel – active"
- 8500.2 Bit 13 "FCB 13 Stop at application limits – active"
- 8500.2 Bit 14 "FCB 14 Emergency stop – active"
- 8500.2 Bit 18 "FCB 18 Rotor position identification – active"
- 8500.2 Bit 19 "FCB 19 Position hold control – active"
- 8500.2 Bit 20 "FCB 20 Jog mode – active"
- 8500.2 Bit 21 "FCB 21 Brake test – active"
- 8500.2 Bit 25 "FCB 25 Motor parameter measurement – active"
- 8500.2 Bit 26 "FCB 26 Stop at user-defined limits – active"
- 8509.10 Bit 2 "FCB 09 Position control – operating mode bit 0 – active"
- 8509.10 Bit 3 "FCB 09 Position control – operating mode bit 1 – active"
- 8509.10 Bit 4 "FCB 09 Position control – operating mode bit 2 – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 8512.3 Bit 0 "FCB 12 Reference travel – reference travel finished"
- 8518.59 Bit 0 "FCB 18 Rotor position identification – rotor position identified"
- 8521.8 Bit 2 "FCB 21 Brake test – brake tested: not OK"
- 8521.8 Bit 3 "FCB 21 Brake test – brake tested: OK"
- 8569.1 Bit 1 "Motor at standstill – filtered"
- 8577.2 Bit 0 "Cam switch – track 1"
- 8577.2 Bit 1 "Cam switch – track 2"

- 8577.2 Bit 2 "Cam switch – track 3"
- 8577.2 Bit 3 "Cam switch – track 4"
- 8580.1 Bit 0 "DI 10"
- 8580.1 Bit 1 "DI 11"
- 8580.1 Bit 2 "DI 12"
- 8580.1 Bit 3 "DI 13"
- 8703.7 Bit 0 "SBT active"

Assignment of digital output DO 13 of the I/O card.

1.1.170 8582 Analog inputs I/O card

These parameters specify the assignment of the analog inputs of the I/O card.

8582.1 AI 2 voltage offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Voltage offset of analog input AI 2 of the I/O card.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

8582.2 AI 2 current offset

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Value range: -20000 to 20000

Current offset of analog input AI 2 of the I/O card.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

8582.3 AI 2 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the numerator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint ± 3000 1/min or $\pm n_{\max}$ is defined when the scaling of denominator/numerator = 1 and the input voltage is ± 10 V.

8582.4 AI 2 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the denominator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8582.5 AI 2 function

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No function**
- 1 = +/-10 V input
- 2 = 0 – 10 V input
- 3 = 0 – 20 mA input
- 4 = 4 – 20 mA input

Changeover between voltage/current at analog input AI 2 of the I/O card.

8582.11 AI 2 input voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Input voltage of analog input AI 2 of the I/O card.

8582.12 AI 2 input current

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 20000

Input current of analog input AI 2 of the I/O card.

8582.13 AI 2 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Scaled value of analog input AI 2 of the I/O card.

8582.14 AI 2 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Unfiltered scaled value of analog input AI 2 of the I/O card.

8582.19 AI 2 available

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Indicates that analog input AI 2 is present on the hardware of the I/O card.

Is used by the user interface to hide parameters that are not effective in the current hardware configuration.

8582.21 AI 3 voltage offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Voltage offset of analog input AI 3 of the I/O card.

The zero crossing of the setpoint characteristic can be shifted along the input voltage axis.

8582.22 AI 3 current offset

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Value range: -20000 to 20000

Current offset of analog input AI 3 of the I/O card.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

8582.23 AI 3 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the numerator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8582.24 AI 3 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the denominator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8582.25 AI 3 function

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No function**
- 1 = +/-10 V input
- 2 = 0 – 10 V input
- 3 = 0 – 20 mA input
- 4 = 4 – 20 mA input

Distinguishes between voltage/current at analog input AI 3 of the I/O card.

8582.31 AI 3 input voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Input voltage of analog input AI 3 of the I/O card.

8582.32 AI 3 input current

Factory setting: 0

Unit: μA

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 20000

Input current of analog input AI 3 of the I/O card.

8582.33 AI 3 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Scaled value of analog input AI 3 of the I/O card.

8582.34 AI 3 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Unfiltered scaled value of analog input AI 3 of the I/O card.

8582.39 AI 3 available

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- **1 = Yes**

Indicates that analog input AI 3 is present on the hardware of the I/O card.

Is used by the user interface to hide parameters that are not effective in the current hardware configuration.

8582.80 Sum of AI 2 + AI 3

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Sum of the scaled values of analog inputs AI 2 + AI 3 of the I/O card.

8582.81 Sum of AI 2 + AI 3 unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Sum of the unscaled values of analog inputs AI 2 + AI 3 of the I/O card.

1.1.171 8583 Analog outputs I/O card

These parameters specify the assignment of the analog outputs of the I/O card.

8583.1 AO 2 voltage offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Voltage offset of analog output AO 2 of the I/O card.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

8583.2 AO 2 current offset

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Value range: -20000 to 20000

Current offset of analog output AO 2 of the I/O card.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

8583.3 AO 2 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the numerator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8583.4 AO 2 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the denominator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8583.5 AO 2 function

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No function**
- 1 = +/-10 V output
- 3 = 0 – 20 mA output
- 4 = 4 – 20 mA output

Distinguishes between voltage/current at analog output AO 2 of the I/O card.

8583.10 AO 2 data source raw value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Raw value of the set data source of analog output AO 2 of the I/O card.

8583.11 AO 2 output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Output voltage of analog output AO 2 of the I/O card.

8583.12 AO 2 output current

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 20000

Output current of analog output AO 2 of the I/O card.

8583.13 AO 2 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Scaled value of analog output AO 2 of the I/O card.

8583.14 AO 2 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Unscaled value of analog output AO 2 of the I/O card.

8583.16 AO 2 data source

Factory setting: 8364.46 Actual speed in user units

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function

- 8312.6 Output stage – total utilization
- 8364.46 Actual speed in user units
- 8364.61 Stator frequency
- 8364.95 Actual torque in communication units
- 8364.128 Absolute apparent current – rms value

Data source of analog output AO 2 of the I/O card.

8583.19 AO 2 available

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Indicates that analog output AO 2 is present on the hardware of the I/O card.

Is used by the user interface to hide parameters that are not effective in the current hardware configuration.

8583.21 AO 3 voltage offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Voltage offset of analog output AO 3 of the I/O card.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

8583.22 AO 3 current offset

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Value range: -20000 to 20000

Current offset of analog output AO 3 of the I/O card.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

8583.23 AO 3 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the numerator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8583.24 AO 3 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: 1 to 1048575

Changing the denominator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint +/-3000 1/min or +/-nmax is defined when the scaling of denominator/numerator = 1 and the input voltage is +/-10 V.

8583.25 AO 3 function

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No function**
- 1 = +/-10 V output
- 3 = 0 – 20 mA output
- 4 = 4 – 20 mA output

Distinguishes between voltage/current at analog output AO 3 of the I/O card.

8583.30 AO 3 data source raw value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Raw value of the set data source of analog output AO 3 of the I/O card.

8583.31 AO 3 output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Value range: -10000 to 10000

Output voltage of analog output AO 3 of the I/O card.

8583.32 AO 3 output current

Factory setting: 0

Unit: μA

Data type: Int32

Data length: 1

Resolution: 1

Value range: 0 to 20000

Output current of analog output AO 3 of the I/O card.

8583.33 AO 3 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Scaled value of analog output AO 3 of the I/O card.

8583.34 AO 3 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Unscaled value of analog output AO 3 of the I/O card.

8583.36 AO 3 data source

Factory setting: 8364.128 Absolute apparent current – rms value

Data type: Parameter pointer

Data length: 1

Value range:

- 0.0 No function
- 8312.6 Output stage – total utilization
- 8364.46 Actual speed in user units
- 8364.61 Stator frequency
- 8364.95 Actual torque in communication units
- 8364.128 Absolute apparent current – rms value

Data source of analog output AO 3 of the I/O card.

8583.39 AO 3 available

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Indicates that analog output AO 3 is present on the hardware of the I/O card.

Is used by the user interface to hide parameters that are not effective in the current hardware configuration.

1.1.172 8584 Hardware diagnostics

Hardware diagnostics

8584.41 Heat sink temperature unfiltered

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Unfiltered absolute heat sink temperature

1.1.173 8585 I/O card

I/O card

8585.1 Operating state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Initial state**
- 1 = Plugged detection
- 2 = Initialization state
- 3 = Idle
- 4 = Cyclic processing

Operating state of the I/O card.

8585.2 Error bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = CRC error FPGA
- 1 = CRC error I/O card
- 2 = Timeout error I/O card
- 3 = Watchdog error I/O card
- 4 = Frame error I/O card

Error bits of the I/O card.

8585.3 Configuration ID

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 255

Hardware ID of the I/O card that the microcontroller provides to the option card.

8585.4 Configuration

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Number of digital inputs/digital outputs of the I/O card.

Is coded as follows:

- Number of digital inputs on the lower byte
- Number of digital outputs on the second byte
- Number of analog inputs on the third byte
- Number of analog outputs on the fourth byte

1.1.174 8586 Standby mode

By activating standby mode, all the following energy consumers are switched off in the following sequence. This condition is maintained as long as standby mode is active:

1. High-voltage switched-mode power supply in the power section of control unit devices
2. Supply voltage for local bus consumers of control unit devices
3. When using an inverter with 7-segment display: all segments except for the decimal point at the bottom right
4. When using compact units: voltage supply for a plugged-in keypad
5. Encoder supplies activated by the user.

8586.1 Activate standby mode

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Control word
- 1 = Digital inputs basic unit
- 2 = Digital inputs I/O card
- 3 = Fieldbus

Specifies the channels used to enable and disable standby mode.

8586.2 Request disconnection of encoder/safety card supply

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Specifies whether the encoder or safety card is to be disabled when activating standby mode.

8586.3 Disconnection of encoder/safety card supply effective

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

The requested disconnection of the encoder/safety card supply is effective. With double-axis modules, supply is disconnected as soon as it is requested on one of the two axis instances.

1.1.175 8587 Scope data channels

Scope data channels

8587.1 Data channel 1

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Value range: 0 to 4294967295

Scope data channel 1

8587.2 Data channel 2

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Value range: 0 to 4294967295
Scope data channel 2

8587.3 Data channel 3

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Value range: 0 to 4294967295
Scope data channel 3

8587.4 Data channel 4

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Value range: 0 to 4294967295
Scope data channel 4

8587.5 Data channel 5

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Value range: 0 to 4294967295
Scope data channel 5

8587.6 Data channel 6

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1

Value range: 0 to 4294967295

Scope data channel 6

8587.7 Data channel 7

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Value range: 0 to 4294967295

Scope data channel 7

8587.8 Data channel 8

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Value range: 0 to 4294967295

Scope data channel 8

8587.9 Data channel 9

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Value range: 0 to 4294967295

Scope data channel 9

8587.10 Data channel 10

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Value range: 0 to 4294967295

Scope data channel 10

8587.100 Timestamp channel

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Value range: 0 to 4294967295

Scope timestamp channel

8587.101 Data status

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 255

The data status informs about the validity and fill level of the scope data buffer.

1.1.176 8603 General engineering data

These parameters specify the general engineering data.

8603.1 General DT1

Factory setting: 0

Unit:

Data type: Uint8 (fill level array)

Data length: 100

Resolution: 1

Value range: 0 to 255

General drive train 1

8603.3 General DT2

Factory setting: 0

Unit:

Data type: Uint8 (fill level array)

Data length: 100

Resolution: 1

Value range: 0 to 255

General drive train 2

1.1.177 8610 EU 400 V/50 Hz

These parameters specify country-specific configuration data for EU 400 V/50 Hz.

8610.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1
Resolution: -
Value range: 0 to 2000
Nominal motor voltage

8610.2 Nominal motor frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Rated motor frequency

8610.3 Maximum rotational speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 36000
Maximum rotational speed

8610.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 1

8610.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -360000000 to 360000000
Fixed speed setpoint 2

8610.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -360000000 to 360000000
 Fixed speed setpoint 3

8610.7 Fixed setpoint 4

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -360000000 to 360000000
 Fixed speed setpoint 4

8610.8 Fixed setpoint 5

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -360000000 to 360000000
 Fixed speed setpoint 5

8610.9 Fixed setpoint 6

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -360000000 to 360000000
 Fixed speed setpoint 6

1.1.178 8611 USA/CAN 460 V/60 Hz

These parameters specify country-specific configuration data for USA/
 CAN 460 V/60 Hz.

8611.1 Nominal motor voltage

Factory setting: 0
 Unit: V
 Data type: Float32
 Data length: 1

Resolution: -
Value range: 0 to 2000
Nominal motor voltage

8611.2 Nominal motor frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Rated motor frequency

8611.3 Maximum rotational speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 36000
Maximum rotational speed

8611.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 1

8611.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 2

8611.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min

Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 3

8611.7 Fixed setpoint 4

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 4

8611.8 Fixed setpoint 5

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 5

8611.9 Fixed setpoint 6

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 6

1.1.179 8612 Configuration data BR/KR 380 V/60 Hz

These parameters specify country-specific configuration data for Brazil/Korea for 380 V/60 Hz.

8612.1 Nominal motor voltage

Factory setting: 0
 Unit: V
 Data type: Float32
 Data length: 1
 Resolution: -

Value range: 0 to 2000

Nominal motor voltage

8612.2 Nominal motor frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 20000

Rated motor frequency

8612.3 Maximum rotational speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Maximum permitted rotational speed.

8612.4 Fixed setpoint 1

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 1

8612.5 Fixed setpoint 2

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 2

8612.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 3

8612.7 Fixed setpoint 4

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 4

8612.8 Fixed setpoint 5

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 5

8612.9 Fixed setpoint 6

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 6

1.1.180 8613 Configuration data BR/KR 440 V/60 Hz

These parameters specify country-specific configuration data for Brazil/Korea for 440V/60 Hz.

8613.1 Nominal motor voltage

Factory setting: 0
 Unit: V
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: 0 to 2000

Nominal motor voltage

8613.2 Nominal motor frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 20000

Rated motor frequency

8613.3 Maximum rotational speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 36000

Maximum permitted rotational speed.

8613.4 Fixed setpoint 1

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 1

8613.5 Fixed setpoint 2

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 2

8613.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 3

8613.7 Fixed setpoint 4

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 4

8613.8 Fixed setpoint 5

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 5

8613.9 Fixed setpoint 6

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -3600000000 to 3600000000
 Fixed speed setpoint 6

1.1.181 8614 EU 230 V/50 Hz

These parameters specify country-specific configuration data for EU 230 V/50 Hz.

8614.1 Nominal motor voltage

Factory setting: 0
 Unit: V
 Data type: Float32
 Data length: 1
 Resolution: -
 Value range: 0 to 2000
 Nominal motor voltage

8614.2 Nominal motor frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Rated motor frequency

8614.3 Maximum rotational speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 36000
Maximum rotational speed

8614.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 1

8614.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 2

8614.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 3

8614.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 4

8614.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 5

8614.9 Fixed setpoint 6

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 6

1.1.182 8615 USA/CAN 230 V/60 Hz

These parameters specify country-specific configuration data for USA/CAN 230 V/60 Hz.

8615.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 2000

Nominal motor voltage

8615.2 Nominal motor frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Rated motor frequency

8615.3 Maximum rotational speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 36000
Maximum rotational speed

8615.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 1

8615.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 2

8615.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 3

8615.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 4

8615.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 5

8615.9 Fixed setpoint 6

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 6

1.1.183 8616 Configuration data BR/KR 220 V/60 Hz

These parameters specify country-specific configuration data for Brazil/Korea for 220V/60 Hz.

8616.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: 0 to 2000

Nominal motor voltage

8616.2 Nominal motor frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 20000
Rated motor frequency

8616.3 Maximum rotational speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Value range: 0 to 36000
Maximum permitted rotational speed.

8616.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 1

8616.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Value range: -3600000000 to 3600000000
Fixed speed setpoint 2

8616.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 3

8616.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 4

8616.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 5

8616.9 Fixed setpoint 6

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -360000000 to 360000000

Fixed speed setpoint 6

1.1.184 8622 Programmable fault response

These parameters can be used to set parameterizable fault responses.

8622.2 Response to heat sink utilization – prewarning

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No response**
- **1 = Warning**

Specifies how the device responds to an exceeded prewarning threshold of heat sink utilization.

8622.3 Positioning lag error response

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- 1 = Warning
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- **4 = Output stage inhibit**

Specifies how the device responds to a lag error (lag error window exceeded).

8622.4 Response to line phase failure

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- 1 = Warning
- **2 = Application stop + output stage inhibit**
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to line phase failure (threshold specified by the user is exceeded).

8622.5 Response to external fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- 1 = Warning
- **2 = Application stop + output stage inhibit**
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to an external fault (triggered by digital inputs or control word, for example).

8622.6 Response to process data timeout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 1 = Warning
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit
- 51 = Warning with self reset
- **52 = Application stop + output stage inhibit with self reset**
- 53 = Emergency stop + output stage inhibit with self reset
- 54 = Output stage inhibit with self-reset

Specifies how the device responds to a process data timeout on the bus system (timeout time).

8622.7 Response to external synchronization

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- 1 = Warning
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit
- **51 = Warning with self reset**
- 52 = Application stop + output stage inhibit with self reset
- 53 = Emergency stop + output stage inhibit with self reset
- 54 = Output stage inhibit with self-reset

Specifies how the device responds to a loss of external synchronization.

8622.10 Response to electromechanical utilization – prewarning

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No response**
- 1 = Warning
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to an exceeded prewarning threshold of electromechanical utilization.

8622.13 Response to encoder warning

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **1 = Warning**
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to an encoder warning.

8622.14 Response to encoder fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **2 = Application stop + output stage inhibit**
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to an encoder fault.

8622.15 Response to additional encoder

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **1 = Warning**
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to a fault of an encoder that is neither used for speed control nor for position control.

8622.16 Response to encoder 1 latest fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No response**
- 216 = Encoder – fault
- 217 = Additional encoder

Specifies how the device responds to the current standard fault of encoder 1.

8622.17 Response to encoder 2 latest fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No response**
- 216 = Encoder – fault
- 217 = Additional encoder

Specifies how the device responds to the current standard fault of encoder 2.

8622.18 Response to encoder 1 latest critical fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No response**
- 4 = Output stage inhibit
- 216 = Encoder – fault
- 217 = Additional encoder

Specifies how the device responds to the current critical fault of encoder 1.

8622.19 Response to encoder 2 latest critical fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No response**
- 4 = Output stage inhibit
- 216 = Encoder – fault
- 217 = Additional encoder

Specifies how the device responds to the current critical fault of encoder 2.

8622.20 Response to external braking resistor fault

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No response
- 1 = Warning
- 2 = Application stop + output stage inhibit
- 3 = Emergency stop + output stage inhibit
- **4 = Output stage inhibit**

Response to external braking resistor fault

8622.21 Response to application heartbeat timeout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 1 = Warning
- **2 = Application stop + output stage inhibit**
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit

Specifies how the device responds to a timeout of the application heartbeat.

8622.22 Response to user timeout

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 1 = Warning
- **2 = Application stop + output stage inhibit**
- 3 = Emergency stop + output stage inhibit
- 4 = Output stage inhibit
- 51 = Warning with self reset
- 52 = Application stop + output stage inhibit with self reset
- 53 = Emergency stop + output stage inhibit with self reset
- 54 = Output stage inhibit with self-reset

Specifies how the device responds to a timeout of the user timeout function.

1.1.185 8630 Digital motor integration 1

Digital motor integration 1

8630.20 Frequency inverter output voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Value range: -3.402823E+38 to Float32Max

Output voltage at DMI connection.

1.1.186 8700 Safety card – status values

These parameters specify the general status values of the safety card that can be recorded with the Scope function.

8700.1 SDI drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the SDI drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the SDI drive safety function is active and that limit values have not been violated.

8700.2 SLA drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the SLA drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the SLA drive safety function is active and that limit values have not been violated.

8700.3 SLI drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Status instance 1
- 11 = Status instance 2
- 12 = Status instance 3
- 13 = Status instance 4
- 14 = Status instance 5
- 15 = Status instance 6
- 16 = Status instance 7
- 17 = Status instance 8
- 18 = Status instance 9
- 19 = Status instance 10
- 20 = Increment enable instance 1
- 21 = Increment enable instance 2
- 22 = Increment enable instance 3
- 23 = Increment enable instance 4
- 24 = Increment enable instance 5
- 25 = Increment enable instance 6
- 26 = Increment enable instance 7
- 27 = Increment enable instance 8
- 28 = Increment enable instance 9
- 29 = Increment enable instance 10

The activation bits indicate that the SLI drive safety function has been activated via F-DI or F-PO.

The status bits indicate that the SLI drive safety function is active and that limit values have not been violated.

8700.4 SLS drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the SLS drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the SLS drive safety function is active and that limit values have not been violated.

8700.5 SOS drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the SOS drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the SOS drive safety function is active and that limit values have not been violated.

8700.6 SSM drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The status bits indicate that the SSM drive safety function is active and that limit values have not been violated.

8700.7 SSR drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1

- 1 = Activation instance 2
- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the SSR drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the SSR drive safety function is active and that limit values have not been violated.

8700.8 SSx drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2

- 2 = Activation instance 3
- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the SSx drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the SSx drive safety function is active and that limit values have not been violated.

8700.9 STO drive safety function – status

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Activation instance 1
- 1 = Activation instance 2
- 2 = Activation instance 3

- 3 = Activation instance 4
- 4 = Activation instance 5
- 5 = Activation instance 6
- 6 = Activation instance 7
- 7 = Activation instance 8
- 8 = Activation instance 9
- 9 = Activation instance 10
- 10 = Activation instance 11
- 11 = Activation instance 12
- 12 = Activation instance 13
- 13 = Activation instance 14
- 14 = Activation instance 15
- 15 = Activation instance 16
- 16 = Status instance 1
- 17 = Status instance 2
- 18 = Status instance 3
- 19 = Status instance 4
- 20 = Status instance 5
- 21 = Status instance 6
- 22 = Status instance 7
- 23 = Status instance 8
- 24 = Status instance 9
- 25 = Status instance 10
- 26 = Status instance 11
- 27 = Status instance 12
- 28 = Status instance 13
- 29 = Status instance 14
- 30 = Status instance 15
- 31 = Status instance 16

The activation bits indicate that the STO drive safety function has been activated via safe digital input F-DI or safe process output data F-PO.

The status bits indicate that the STO drive safety function is active.

8700.10 Limit speed in positive direction of movement of all drive safety functions

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed in positive direction of movement of all drive safety functions

8700.11 Limit speed in negative direction of movement of all drive safety functions

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed in negative direction of movement of all drive safety functions

8700.12 Limit acceleration in positive direction of movement of all drive safety functions

Factory setting: 0

Unit: 1E-02/(min*s)

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit acceleration in positive direction of movement of all drive safety functions

8700.13 Limit acceleration in negative direction of movement of all drive safety functions

Factory setting: 0

Unit: 1E-02/(min*s)

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit acceleration in negative direction of movement of all drive safety functions

8700.14 Limit speed in positive direction of movement of all drive safety functions in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed in positive direction of movement of all drive safety functions in user units

8700.15 Limit speed in negative direction of movement of all drive safety functions in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed in negative direction of movement of all drive safety functions in user units

8700.16 Limit acceleration in positive direction of movement of all drive safety functions in user units

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit acceleration in positive direction of movement of all drive safety functions in user units

8700.17 Limit acceleration in negative direction of movement of all drive safety functions in user units

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit acceleration in negative direction of movement of all drive safety functions in user units

8700.18 Limit position SDI drive safety function – blocked direction of movement in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SDI drive safety function blocked direction of movement in user units

8700.19 Limit acceleration SLA drive safety function – positive direction of movement in user units

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit acceleration SLA drive safety function positive direction of movement in user units

8700.20 Limit acceleration SLA drive safety function – negative direction of movement in user units

Factory setting: 0

Unit: 1E-02/(min*s) user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit acceleration SLA drive safety function negative direction of movement in user units

8700.21 Limit position SLI drive safety function – positive direction of movement in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SLI drive safety function positive direction of movement in user units

8700.22 Limit position SLI drive safety function – negative direction of movement in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SLI drive safety function negative direction of movement in user units

8700.25 Limit speed SLS drive safety function – positive direction of movement in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SLS drive safety function positive direction of movement in user units

8700.26 Limit speed SLS drive safety function – negative direction of movement in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SLS drive safety function negative direction of movement in user units

8700.27 Limit position SOS drive safety function – positive direction of movement in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SOS drive safety function positive direction of movement in user units

8700.28 Limit position SOS safety function – negative direction of movement in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SOS safety function negative direction of movement in user units

8700.29 Limit speed SSM drive safety function – positive direction of movement in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSM drive safety function positive direction of movement in user units

8700.30 Limit speed SSM drive safety function – negative direction of movement in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSM drive safety function negative direction of movement in user units

8700.31 Upper limit speed SSR drive safety function in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Upper limit speed SSR drive safety function in user units

8700.32 Lower limit speed SSR drive safety function in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Lower limit speed SSR drive safety function in user units

8700.33 Limit speed SSx drive safety function – positive direction of movement in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSx drive safety function positive direction of movement in user units

8700.34 Limit speed SSx drive safety function – negative direction of movement in user units

Factory setting: 0

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSx drive safety function negative direction of movement in user units

8700.35 Limit position SDI drive safety function – blocked direction of movement

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SDI drive safety function blocked direction of movement

8700.36 Limit acceleration SLA drive safety function – positive direction of movement

Factory setting: 0

Unit: 1E-02/(min*s)
 Data type: Int32 (DataArray)
 Data length: 2
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Limit acceleration SLA drive safety function positive direction of movement

8700.37 Limit acceleration SLA drive safety function – negative direction of movement

Factory setting: 0
 Unit: 1E-02/(min*s)
 Data type: Int32 (DataArray)
 Data length: 2
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Limit acceleration SLA drive safety function negative direction of movement

8700.38 Limit position SLI drive safety function – positive direction of movement

Factory setting: 0
 Unit: 1/65536 rev
 Data type: Int32 (DataArray)
 Data length: 2
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Limit position SLI drive safety function positive direction of movement

8700.39 Limit position SLI drive safety function – negative direction of movement

Factory setting: 0
 Unit: 1/65536 rev
 Data type: Int32 (DataArray)
 Data length: 2
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Limit position SLI drive safety function negative direction of movement

8700.42 Limit speed SLS drive safety function – positive direction of movement

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32 (DataArray)
 Data length: 4
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Limit speed SLS drive safety function positive direction of movement

8700.43 Limit speed SLS drive safety function – negative direction of movement

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SLS drive safety function negative direction of movement

8700.44 Limit position SOS drive safety function – positive direction of movement

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SOS drive safety function – positive direction of movement

8700.45 Limit position SOS drive safety function – negative direction of movement

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Limit position SOS drive safety function – negative direction of movement

8700.46 Limit speed SSM drive safety function – positive direction of movement

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSM drive safety function positive direction of movement

8700.47 Limit speed SSM drive safety function – negative direction of movement

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSM drive safety function negative direction of movement

8700.48 Upper limit speed SSR drive safety function

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Upper limit speed SSR drive safety function

8700.49 Upper limit speed SSR drive safety function

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Lower limit speed SSR drive safety function

8700.50 Limit speed SSx drive safety function – positive direction of movement

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSx drive safety function positive direction of movement

8700.51 Limit speed SSx drive safety function – negative direction of movement

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SSx drive safety function – negative direction of movement

8700.52 Speed filter SLS drive safety function

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32 (DataArray)

Data length: 4
Resolution: 1
Value range: -2147483648 to 2147483647
Speed filter SLS drive safety function

8700.53 Speed filter SLS drive safety function in user units

Factory setting: 0
Unit: 1/65536 rev user unit
Data type: Int32 (DataArray)
Data length: 4
Resolution: 1
Value range: -2147483648 to 2147483647
Speed filter SLS drive safety function in user units

8700.54 Speed filter SSM drive safety function

Factory setting: 0
Unit: 1/65536 rev
Data type: Int32 (DataArray)
Data length: 4
Resolution: 1
Value range: -2147483648 to 2147483647
Speed filter SSM drive safety function

8700.55 Speed filter SSM drive safety function in user units

Factory setting: 0
Unit: 1/65536 rev user unit
Data type: Int32 (DataArray)
Data length: 4
Resolution: 1
Value range: -2147483648 to 2147483647
Speed filter SSM drive safety function in user units

8700.56 Speed filter SSR drive safety function – upper limit speed

Factory setting: 0
Unit: 1/65536 rev
Data type: Int32 (DataArray)
Data length: 2
Resolution: 1
Value range: -2147483648 to 2147483647
Speed filter SSR drive safety function upper limit speed

8700.57 Speed filter SSR drive safety function – upper limit speed in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Speed filter SSR drive safety function upper limit speed in user units

8700.58 Speed filter SSR drive safety function – lower limit speed

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Speed filter SSR drive safety function lower limit speed

8700.59 Speed filter SSR drive safety function – lower limit speed in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Speed filter SSR drive safety function lower limit speed in user units

8700.60 Current braking distance SLI drive safety function

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Current braking distance SLI drive safety function

8700.61 Limit speed SLI drive safety function

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: -2147483648 to 2147483647

Limit speed SLI drive safety function

8700.62 Limit speed SLI drive safety function in user units

Factory setting: 0
 Unit: 1E-4/min user unit
 Data type: Int32 (DataArray)
 Data length: 2
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Limit speed SLI drive safety function in user units

8700.63 Actual speed in system units

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32 (DataArray)
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Actual speed in system units

8700.64 Actual position in system units

Factory setting: 0
 Unit: 1/65536 rev
 Data type: Int32 (DataArray)
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Actual position in system units

8700.65 Actual acceleration in system units

Factory setting: 2147483647
 Unit: 1E-02/(min*s)
 Data type: Int32 (DataArray)
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Actual acceleration in system units

8700.70 Active fault class

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:
 • 0 = Critical fault

- 1 = System error
- 2 = Input fault
- 3 = Encoder fault
- 4 = Output fault
- 5 = Warning

Active fault class

8700.72 Safety card state

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = Initialization**
- 38913 = Parameterization
- 43010 = Operation
- 12291 = Critical fault
- 45060 = Firmware update

Safety card state

8700.73 F-PO user data (8 bits)

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 12

Resolution: 1

Value range: 0 to 255

Safe process output data (controller to safety card) Byte-wise notation.

8700.74 F-PO user data (8 bits)

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 12

Resolution: 1

Value range: 0 to 255

Safe process input data (safety card to controller) Byte-wise notation.

8700.75 Fast channel PI data

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 2

Resolution: 1

Value range: 0 to 255

Process input data of the non-safety relevant fast channel

8700.76 Standard PI data

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 4

Resolution: 1

Value range: 0 to 255

Non-safety related process input data

8700.77 Standard PO data

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 2

Resolution: 1

Value range: 0 to 255

Non safety-related process output data

8700.78 Muting status information

Factory setting:

Data type: Bit field (DataArray)

Data length: 1

Value range:

- 0 = Encoder fault muting status
- 1 = F-PO muting status
- 8 = Encoder fault
- 9 = Substitute values
- 10 = Muting timeout
- 11 = Muting fault canceled
- 16 = Muting status source F-DI
- 17 = Muting status source F-PO
- 18 = Emergency mode status source

Muting status information

8700.79 Actual speed in user units

Factory setting: 2147483647

Unit: 1E-4/min user unit

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual speed in user units

8700.80 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual position in user units

8700.81 Actual acceleration value in user units

Factory setting: 2147483647

Unit: 1E-02/(min*s) user unit

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Actual value of the acceleration in user units.

8700.82 F-DI logic state

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- **0 = Level instance 0**
- **1 = Level instance 1**
- **2 = Level instance 2**
- **3 = Level instance 3**
- 16 = Error instance 0
- 17 = Error instance 1
- 18 = Error instance 2
- 19 = Error instance 3

F-DI state of logic processing in the subcomponent

8700.84 F-DI physical state filtered

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Level instance 0
- 1 = Level instance 1

- 2 = Level instance 2
 - 3 = Level instance 3
- F-DI terminal state filtered

8700.85 Reasons for STO

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = System error
- 1 = Critical fault
- 2 = Input fault
- 3 = Output fault
- 4 = Encoder fault
- 5 = Parameterization state
- 6 = Brake test
- 7 = F-DI
- 16 = SSx final state
- 17 = SLI stop state
- 18 = SSx limit value violation
- 19 = SDI limit value violation
- 20 = SLI limit value violation
- 21 = SOS limit value violation
- 22 = SLS limit value violation
- 23 = SSR limit value violation
- 24 = SLA limit value violation
- 8 = F-PO
- 9 = F-PO substitute values

Reasons for STO

8700.87 F-DO STO/x logic state

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = F-DO STO instance 0
- 1 = F-DO instance 0
- 2 = F-DO instance 1

State of F-DOx and F-DO STO instances in output processing

8700.88 Chip temperature channel A

Factory setting: 0

Unit: 1E-2 °C
 Data type: Int32
 Data length: 1
 Resolution: 1
 Value range: -2147483648 to 2147483647
 Chip temperature channel A

8700.89 Encoder data status

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:

- 0 = Data valid
- 1 = Diagnostics without errors

 Encoder data status

8700.91 Safe digital outputs – fault status on channel A

Factory setting:
 Data type: Bit field
 Data length: 1
 Value range:

- 0 = F-DO STO instance 0
- 1 = F-DO instance 0
- 2 = F-DO instance 1

 Safe digital outputs – fault status of F-DO outputs on channel A for all instances

8700.92 EI7C encoder – moving minimum level of track signal

Factory setting: 0
 Unit: mV
 Data type: UInt32 (DataArray)
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295
 The minimum is generated via the level values that have been detected last for the track signal.

8700.93 EI7C encoder – moving maximum level of track signal

Factory setting: 0
 Unit: mV
 Data type: UInt32 (DataArray)
 Data length: 1
 Resolution: 1
 Value range: 0 to 4294967295

The maximum is generated via the level values that have been detected last for the track signal.

8700.94 DC 24 V supply voltage channel A

Factory setting: 0

Unit: mV

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

DC 24 V supply voltage channel A

8700.95 DC 12 V supply voltage channel A

Factory setting: 0

Unit: mV

Data type: UInt32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Voltage of the encoder supply. Only available with parameterized encoder.

8700.97 Safe digital outputs – test duration diagnostics 1

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 2

Resolution: 1

Value range: 0 to 4294967295

Safe digital outputs – test duration diagnostics 1

8700.98 Safe digital outputs – test duration diagnostics 5

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 2

Resolution: 1

Value range: 0 to 4294967295

Safe digital outputs – test duration diagnostics 5

8700.99 Sin/cos encoder – moving minimum vector length of track signal

Factory setting: 0

Unit: mV

Data type: UInt32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

The minimum is generated via the vector length values that have been detected last for the track signal.

8700.100 Sin/cos-encoder – moving maximum vector length of track signal

Factory setting: 0

Unit: mV

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

The maximum is generated via the vector length values that have been detected last for the track signal.

8700.101 Drive safety function test mode

Factory setting:

Data type: Enum (DataArray)

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Test mode suppresses inverter control.

8700.102 Drive safety function limit value violation

Factory setting:

Data type: Enum

Data length: 1

Value range:

- **0 = No**
- 1 = Yes

Drive safety function limit value violation

8700.110 Safe communication – diagnostics information

Factory setting:

Data type: Enum (DataArray)

Data length: 1

Value range:

- **0 = Driver never started**
- 224= Parameter setting error
- 1 = Waiting for connection
- 2 = Establishing connection initiated

- 3 = Error while establishing connection
- 225 = Different connection ID of communication partners
- 226 = Different format of communication partners
- 227 = Checksum error – faulty parameter setting for profile/data length, or communication error
- 228 = Faulty parameter settings/disturbances on transmission channel
- 229 = Different protocol version of communication partners
- 230 = Communication partners not compatible
- 231 = Faulty configuration signature
- 232 = Configuration does not match application
- 5 = Safe data exchange
- 6 = Safe data exchange stopped
- 7 = Safe exchange of data with substitute values – changeover to process values possible
- 8 = Data exchange error
- 238 = Timeout
- 15 = Connection closed

Safe communication – diagnostics information

8700.111 Safe communication – sequence number of sent safety telegram

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Sequence number of the sent safety telegram. Is used to analyze at what time which telegram was sent.

8700.112 Safe communication – send safety telegram

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 28

Resolution: 1

Value range: 0 to 255

Raw data of the sent safety telegram. The offset of the data for a slot is calculated as follows: Slot * 32. The slots are counted from 0 in ascending order.

8700.113 Safe communication – sequence number of received safety telegram

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Sequence number of the received safety telegram. Is used to analyze the time when a safety telegram is received.

8700.114 Safe communication – received safety telegram

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 28

Resolution: 1

Value range: 0 to 255

Raw data of the received safety telegram. The offset of the data for a slot is calculated as follows: Slot * 32. The slots are counted from 0 in ascending order.

8700.116 SBT measured load torque mean value

Factory setting: 0

Unit: 1E-03 Nm

Data type: Int32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

SBT measured load torque mean value

8700.117 SBT measured test torque mean value

Factory setting: 0

Unit: 1E-03 Nm

Data type: Int32 (DataArray)

Data length: 2

Resolution: 1

Value range: 0 to 4294967295

SBT measured test torque mean value

8700.118 Limitation through safety card active

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 0 = No
- 1 = Yes

Current state of limitation through the safety card.

8700.119 Limitation of max. positive speed through safety card

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum permitted speed in positive direction of movement when MOVISAFE® limitation is active

8700.120 Limitation of max. negative speed through safety card

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum permitted speed in negative direction of movement when MOVISAFE® limitation is active

8700.121 Limitation of max. acceleration through safety card

Factory setting: 0

Unit: 1E-02/(min*s)

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Maximum permitted acceleration when MOVISAFE® limitation is active

8700.122 Limitation of min. deceleration through safety card

Factory setting: 0

Unit: 1E-02/(min*s)

Data type: Int32

Data length: 1

Resolution: 1

Value range: -2147483648 to 2147483647

Minimum permitted deceleration when MOVISAFE® limitation is active

8700.123 Limitation of max. jerk time through safety card

Factory setting: 0

Unit: ms

Data type: UInt32

Data length: 1

Resolution: 1

Value range: 0 to 2000

Maximum permitted jerk time when MOVISAFE® limitation is active

8700.124 Reasons for start inhibit

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Activate
- 1 = End of muting
- 2 = Setting parameters when limit values are violated
- 3 = Setting parameters during brake test

Bit field with reasons for start inhibit activation

8700.125 F-PO user data

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 4294967295

Safe process output data (controller to safety card)

Scope-optimized 32-bit notation.

8700.126 F-PI user data

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 3

Resolution: 1

Value range: 0 to 4294967295

Safe process input data (safety card to controller)

Scope-optimized 32-bit notation.

8700.247 Timestamp of Scope data set

Factory setting: 0

Unit: µs

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Timestamp created on the subcomponent with the Scope data.

8700.248 Address scope data A

Factory setting: 0

Unit:

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Data content of addresses that were configured via address scope on channel A.

8700.249 Address scope data B

Factory setting: 0

Unit:

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Value range: -2147483648 to 2147483647

Data content of addresses that were configured via address scope on channel B.

1.1.187 8701 Safety card – Scope configuration

Safety card – Scope configuration

8701.1 Parameter index

Factory setting: 0.0 No function

Data type: Parameter pointer (DataArray)

Data length: 8

Value range:

- 0.0 No function
- 8700.1 CS..A – SDI drive safety function status
- 8700.2 CS..A – SLA drive safety function status
- 8700.3 CS..A – SLI drive safety function status
- 8700.4 CS..A – SLS drive safety function status
- 8700.5 CS..A – SOS drive safety function status
- 8700.6 CS..A – SSM drive safety function status
- 8700.7 CS..A – SSR drive safety function status
- 8700.8 CS..A – SSx drive safety function status
- 8700.9 CS..A – STO drive safety function status
- 8700.10 CS..A – Limit speed in positive direction of movement of all drive safety functions
- 8700.11 CS..A – Limit speed in negative direction of movement of all drive safety functions
- 8700.12 CS..A – Limit acceleration in positive direction of movement of all drive safety functions

- 8700.13 CS..A – Limit acceleration in negative direction of movement of all drive safety functions
- 8700.14 CS..A – Limit speed in positive direction of movement of all drive safety functions in user units
- 8700.15 CS..A – Limit speed in negative direction of movement of all drive safety functions in user units
- 8700.16 CS..A – Limit acceleration in positive direction of movement of all drive safety functions in user units
- 8700.17 CS..A – Limit acceleration in negative direction of movement of all drive safety functions in user units
- 8700.18 CS..A – Limit position SDI drive safety function in blocked direction of movement in user units
- 8700.19 CS..A – Limit acceleration SLA drive safety function in positive direction of movement in user units
- 8700.20 CS..A – Limit acceleration SLA drive safety function in negative direction of movement in user units
- 8700.21 CS..A – Limit position SLI drive safety function in positive direction of movement in user units
- 8700.25 CS..A – Limit position SLI drive safety function in negative direction of movement in user units
- 8700.25 CS..A – Limit speed SLS drive safety function in positive direction of movement in user units
- 8700.26 CS..A – Limit speed SLS drive safety function in negative direction of movement in user units
- 8700.27 CS..A – Limit position SOS drive safety function in positive direction of movement in user units
- 8700.28 CS..A – Limit position SOS drive safety function in negative direction of movement in user units
- 8700.29 CS..A – Limit speed SSM drive safety function in positive direction of movement in user units
- 8700.30 CS..A – Limit speed SSM drive safety function in negative direction of movement in user units
- 8700.31 CS..A – Upper limit speed SSR drive safety function in user units
- 8700.32 CS..A – Lower limit speed SSR drive safety function in user units
- 8700.33 CS..A – Limit speed SSx drive safety function in positive direction of movement in user units
- 8700.34 CS..A – Limit speed SSx drive safety function in negative direction of movement in user units
- 8700.35 CS..A – Limit position SDI drive safety function in blocked direction of movement
- 8700.36 CS..A – Limit acceleration SLA drive safety function in positive direction of movement
- 8700.37 CS..A – Limit acceleration SLA drive safety function in negative direction of movement
- 8700.38 CS..A – Limit position SLI drive safety function in positive direction of movement
- 8700.39 CS..A – Limit position SLI drive safety function in negative direction of movement

- 8700.42 CS..A – Limit speed SLS drive safety function in positive direction of movement
- 8700.43 CS..A – Limit speed SLS drive safety function in negative direction of movement
- 8700.44 CS..A – Limit position SOS drive safety function in positive direction of movement
- 8700.45 CS..A – Limit position SOS drive safety function in negative direction of movement
- 8700.46 CS..A – Limit speed SSM drive safety function in positive direction of movement
- 8700.47 CS..A – Limit speed SSM drive safety function in negative direction of movement
- 8700.48 CS..A – Upper limit speed SSR drive safety function
- 8700.49 CS..A – Lower limit speed SSR drive safety function
- 8700.50 CS..A – Limit speed SSx drive safety function – positive direction of movement
- 8700.51 CS..A – Limit speed SSx drive safety function – negative direction of movement
- 8700.52 CS..A – Integral filter SLS drive safety function
- 8700.53 CS..A – Integral filter SLS drive safety function in user units
- 8700.54 CS..A – Integral filter SSM drive safety function
- 8700.55 CS..A – Integral filter SSM drive safety function in user units
- 8700.56 CS..A – Integral filter SSR drive safety function upper limit speed
- 8700.57 CS..A – Integral filter SSR drive safety function upper limit speed in user units
- 8700.58 CS..A – Integral filter SSR drive safety function lower limit speed
- 8700.59 CS..A – Integral filter SSR drive safety function lower limit speed in user units
- 8700.60 CS..A – Current braking distance SLI drive safety function
- 8700.61 CS..A – Limit speed SLI drive safety function
- 8700.62 CS..A – Limit speed SLI drive safety function in user units
- 8700.63 CS..A – Actual speed in system units
- 8700.64 CS..A – Actual position in system units
- 8700.65 CS..A – Acceleration in system units
- 8700.70 CS..A – Active fault class
- 8700.72 CS..A – Safety card state
- 8700.73 CS..A – F-PO user data
- 8700.74 CS..A – F-PI user data
- 8700.75 CS..A – Fast channel PI data
- 8700.76 CS..A – Standard PI data
- 8700.77 CS..A – Standard PO data
- 8700.78 CS..A – Muting status information
- 8700.79 CS..A – Actual speed in user units
- 8700.80 CS..A – Actual position in user units
- 8700.81 CS..A – Actual acceleration in user units

- 8700.82 CS..A – F-DI logic state
- 8700.84 CS..A – F-DI physical state filtered
- 8700.85 CS..A – Source for F-DO STO control
- 8700.87 CS..A – F-DO STO/x physical state
- 8700.88 CS..A – Chip temperature channel A
- 8700.89 CS..A – Encoder data status
- 8700.91 CS..A – F-DO fault status on channel A
- 8700.92 CS..A – EI7C encoder minimum track signal level
- 8700.93 CS..A – EI7C encoder maximum track signal level
- 8700.94 CS..A – DC 24 V voltage supply channel A
- 8700.95 CS..A – DC 12 V encoder supply channel A
- 8700.97 CS..A – F-DO test duration diagnostics 1
- 8700.98 CS..A – F-DO test duration diagnostics 5
- 8700.99 CS..A – Sin/cos encoder minimum vector length
- 8700.100 CS..A – Sin/cos encoder maximum vector length
- 8700.101 CS..A – Drive safety function test mode
- 8700.102 CS..A – Drive safety function limit value violation
- 8700.110 CS..A – Diagnostics information about safe communication (safe bus systems)
- 8700.111 CS..A – Sequence number of sent safety telegram
- 8700.112 CS..A – Send safety telegram
- 8700.113 CS..A – Sequence number of received safety telegram
- 8700.114 CS..A – Received safety telegram
- 8700.116 CS..A – SBT measured load torque mean value
- 8700.117 CS..A – SBT measured test torque mean value
- 8700.118 CS..A – Limitation through safety card active
- 8700.119 CS..A – Limitation of max. positive speed through safety card
- 8700.120 CS..A – Limitation of max. negative speed through safety card
- 8700.121 CS..A – Limitation of max. acceleration through safety card
- 8700.122 CS..A – Limitation of min. deceleration through safety card
- 8700.123 CS..A – Limitation of max. jerk time through safety card
- 8700.124 CS..A – Status values: reason for start inhibit
- 8700.125 CS..A – Status values: F-PO user data
- 8700.126 CS..A – Status values: F-PI user data
- 8700.247 CS..A – Timestamp of Scope data set
- 8700.248 CS..A – Address scope data A
- 8700.249 CS..A – Address scope data B

Parameter index

8701.2 Array offset

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 8

Resolution: 1

Value range: 0 to 4294967295

Array offset

1.1.188 8703 Safety card

Safety card

8703.2 - 8703.4 Array size 3 F-status words

Factory setting: 0

Unit:

Data type: Int32 (array)

Data length: 3

Resolution: 1

Value range: 0 to 65535

F status words (safety card to F controller) for passing on to the non-safe controller

8703.6 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = Activate SBT

Non-safe control bits that are sent from the inverter to the safety card. The control bits can be programmed on input terminals or control words of the inverter to pass on the data to the standard PLC.

8703.7 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Value range:

- 0 = SBT active

Non-safe status bits that are sent from the safety card to the inverter. The status bits can be programmed on output terminals or status words of the inverter to pass on the data to the standard PLC.

1.2 Power section

1.2.1 8299 Quality assurance

Quality assurance data

8299.1 Test data

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 944

Resolution: 1

Value range: 0 to 255

Test data

1.2.2 8300 Device label

These parameters show the identification data of the device.

8300.40 Device family subcomponent

Factory setting:

Data type: Enum (DataArray)

Data length: 1

Value range:

- -16056064 = Power section
- **0 = None**
- 1 = Unknown

Name of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.41 Subcomponent firmware 1 – part number

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Part number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.42 Subcomponent firmware 1 – version

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 65535

Version number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.43 Subcomponent firmware 1 – release

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Release number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.44 Subcomponent firmware 2 – part number

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Part number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.45 Subcomponent firmware 2 – version

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 65535

Version number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.46 Subcomponent firmware 2 – release

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Release number of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.47 Subcomponent hardware variant ID

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Hardware variant identification of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

8300.48 Subcomponent function status

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Function status of the subcomponent.

The following settings can be made:

- Offset 0: Power section
- Offset 1: Safety card/additional encoder
- Offset 2: Fieldbus card
- Offset 3: I/O card

1.2.3 8321 Access rights

These parameters specify the access rights.

8321.1 Current permission level

Factory setting:

Data type: Enum

Data length: 1

Value range:

- 10 = Observer
- **20 = Operator**
- 30 = Maintenance
- 40 = Planning engineer
- 50 = Administrator
- 60 = OEM Service
- 70 = Firmware
- 80 = Nobody

Permission level active in the device. The permission level determines the write permission.

The following settings can be made:

- Observer: Most parameters are read only.
- Operator: Most parameters may also be written.
- OEM Service: All parameters than can be written may be written.

8321.2 Password

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Password for activating the required permission level.

1.2.4 8391 Fan control

Fan control

8391.100 Actual speed

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 100

Value range: 0 to 100000

Actual speed

8391.104 Fan availability

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 100

Value range: 0 to 100000

Display value for fan availability of fan window

1.2.5 10047 Power section process data

Power section process data

10047.1 Status word

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Status word of the power section contains the following information (power status, DC link status, power section status, error bit)

10047.2 Control word

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Control word for controlling the power section via control unit.

10047.3 Error status word

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Value range: 0 to 4294967295

Power section error status word

10047.100 Process input data sink

Factory setting: 10047.2 Control word

Data type: Parameter pointer (DataArray)

Data length: 5

Value range: 10047.2 Power section control word

Process data assignment for the process input data of the power section. Writing of the index to which the process input data are copied.

10047.101 IN-PDO timeout time

Factory setting: 0

Unit: ms

Data type: Uint32

Data length: 1

Resolution: 25

Value range: 0 to 600000

Timeout time of the PDO process input data of the power section in ms.

10047.200 OutProcessDataSource

Factory setting:

- 10047.1 Status word
- 10047.3 Error status word

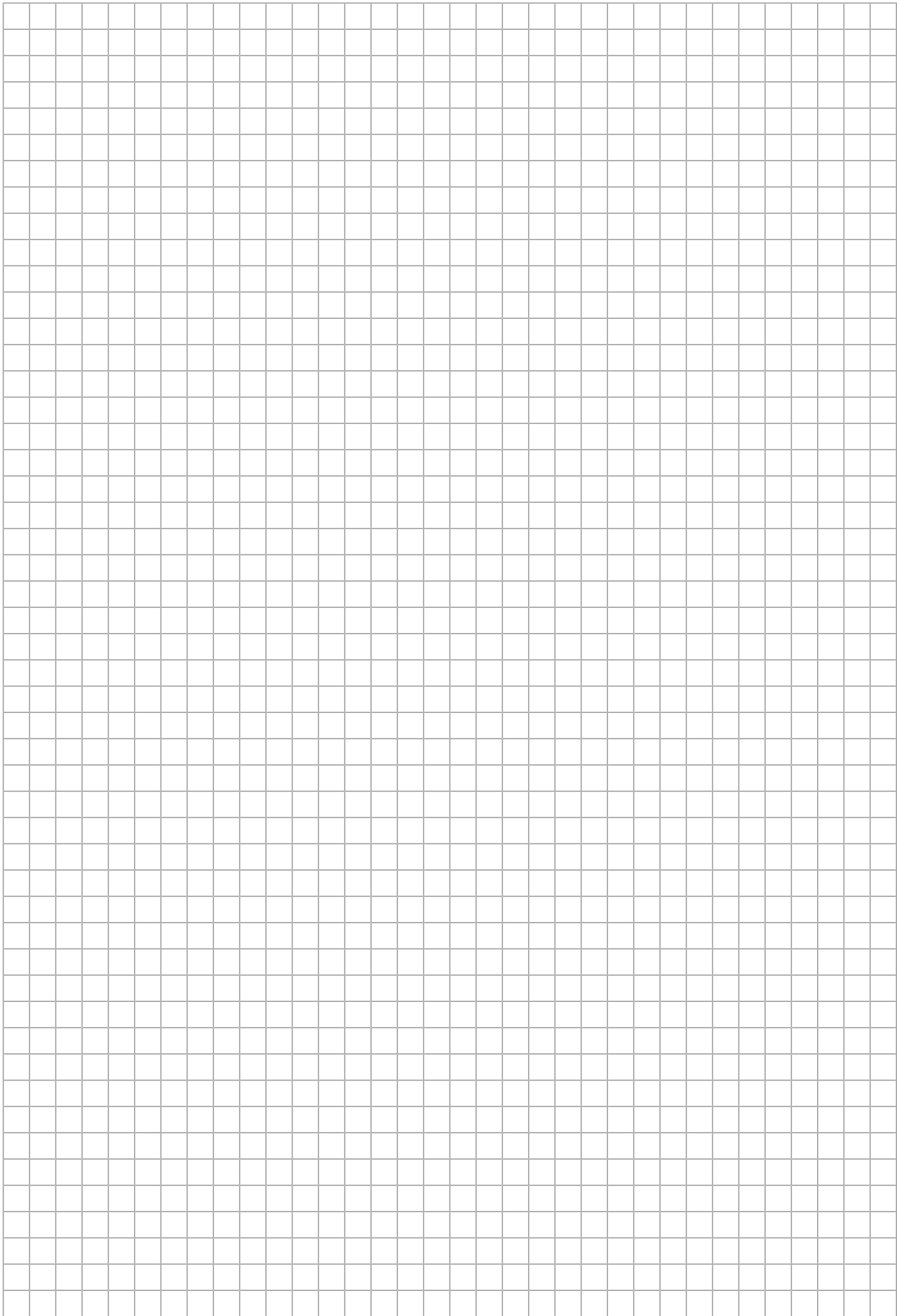
Data type: Parameter pointer (DataArray)

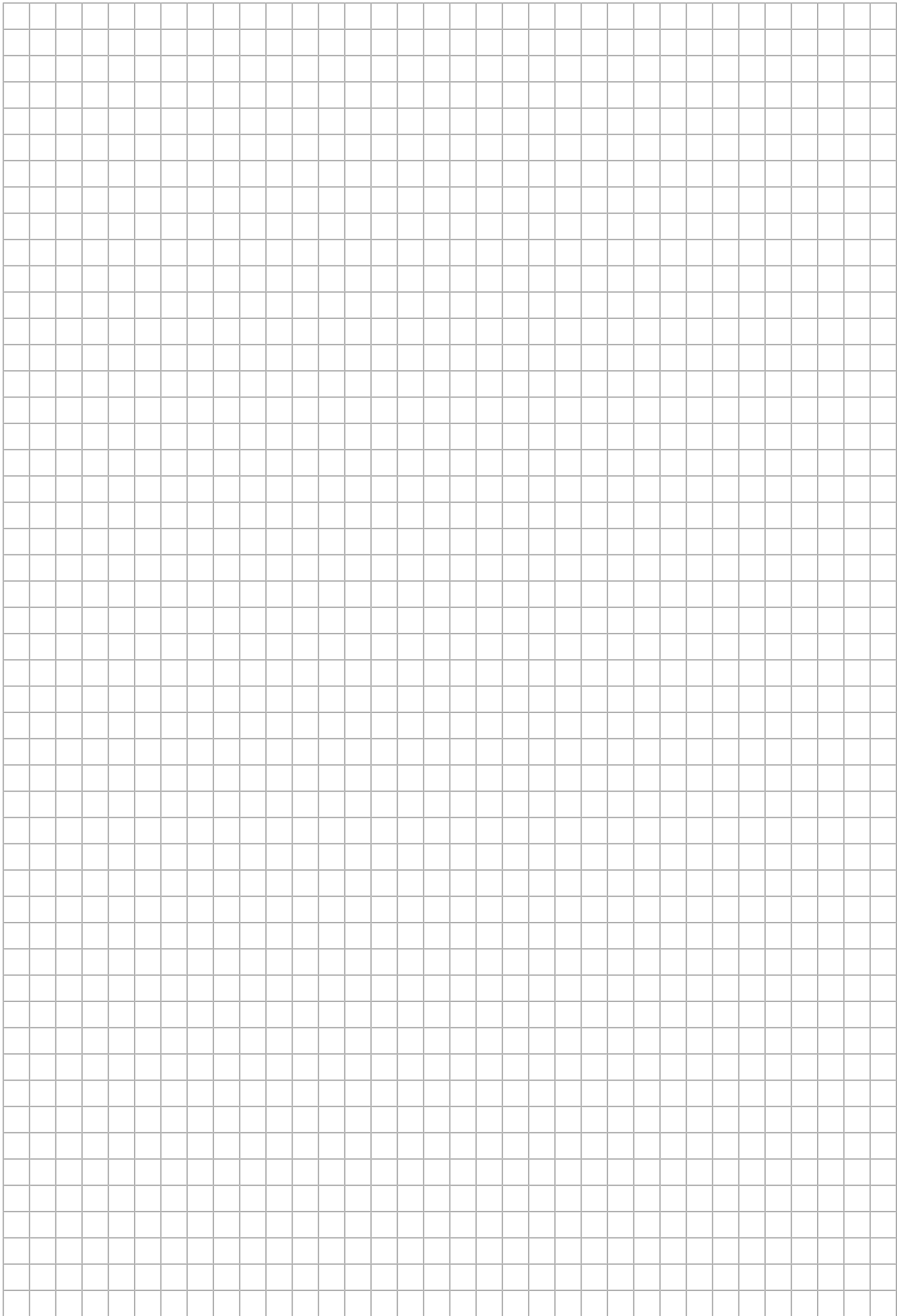
Data length: 5

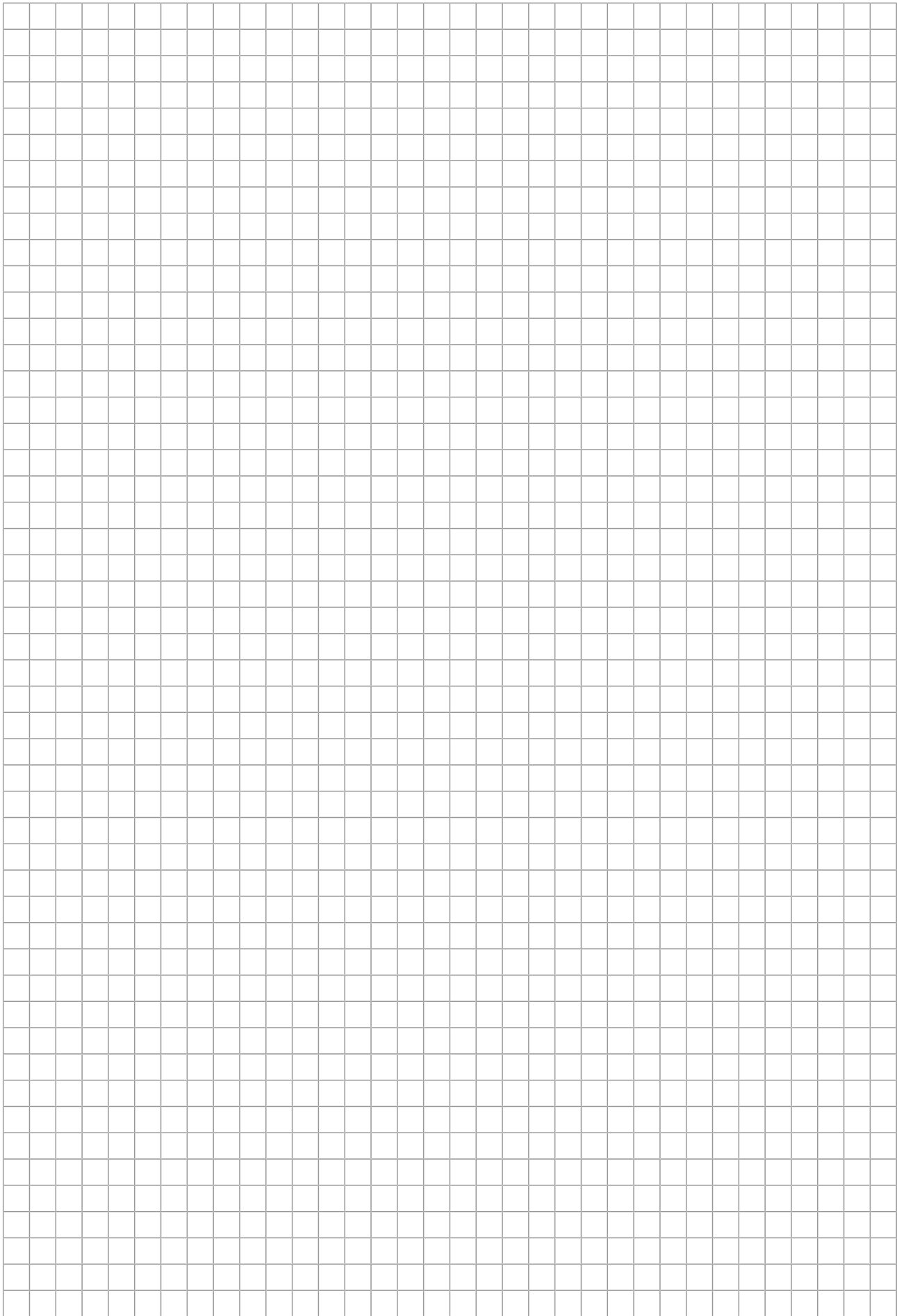
Value range:

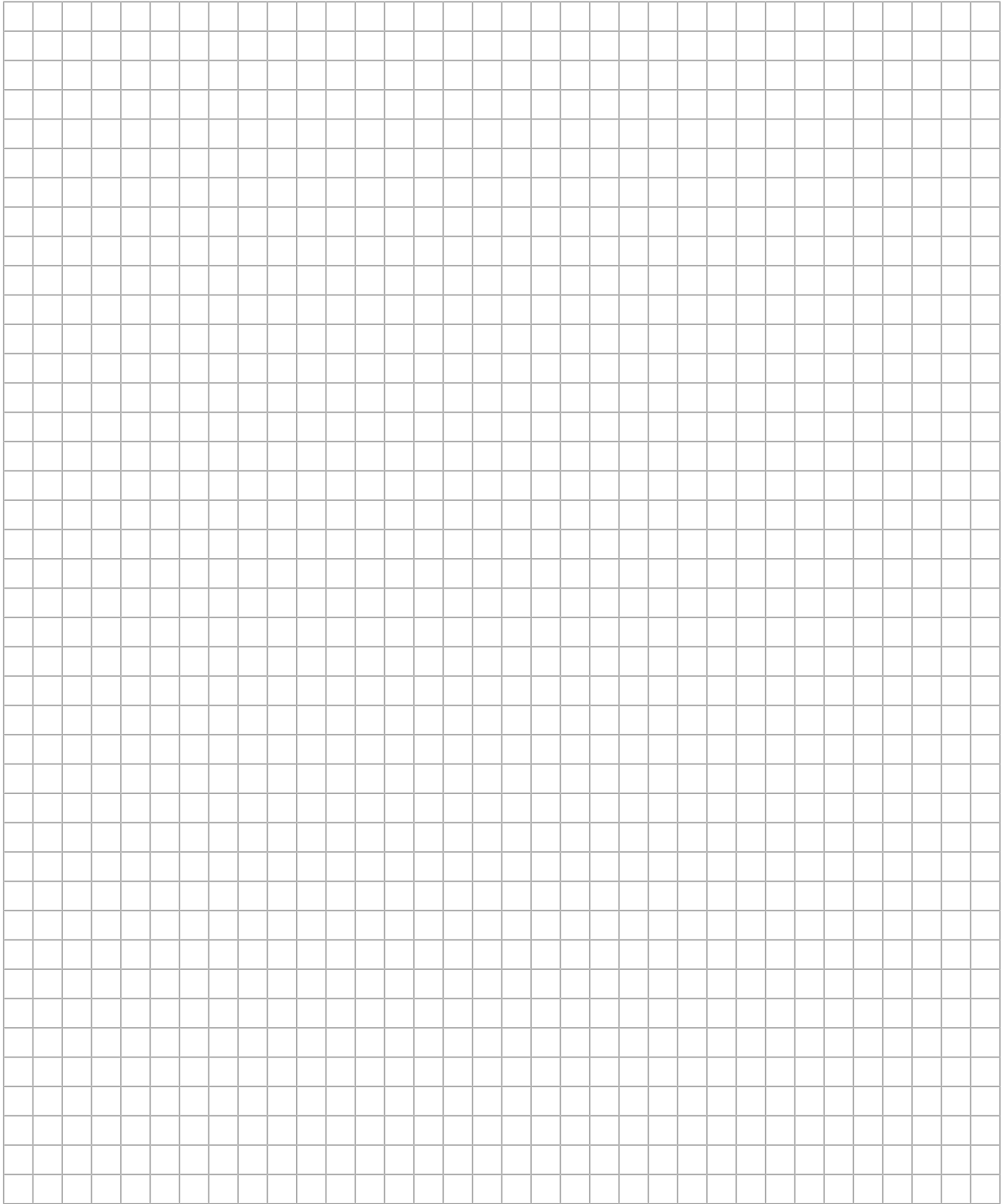
- 10047.1 Power section status word
- 10047.2 Power section control word
- 10047.3 Power section error status word

Process data assignment for the process output data of the power section. Writing of the index from where the process output data are retrieved.











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