



SEW
EURODRIVE

Manual



Application Inverter
MOVIDRIVE® system
Parameter Description



Table of contents

1	Parameter description.....	7
1.1	8299 Quality assurance	7
1.2	8300 DeviceLabel	7
1.3	8301 Mobile data label	18
1.4	8303 Customer label	19
1.5	8304 Production label	20
1.6	8305 Scan label	22
1.7	8310 Build info	24
1.8	8312 Actual values output stage monitoring	25
1.9	8313 Determine inertia.....	27
1.10	8314 Limit switches.....	28
1.11	8316 Control mode process values control cycle	29
1.12	8318 Auto reset.....	38
1.13	8321 Access rights.....	39
1.14	8322 Parameter set control.....	40
1.15	8323 "Velocity reference" signal	40
1.16	8324 "Comparison of actual and setpoint velocity" signal	41
1.17	8325 "Current reference" signal.....	42
1.18	8326 "Velocity window" signal	44
1.19	8327 Limit signals	45
1.20	8328 Operating hours counter	45
1.21	8329 kWh counter.....	46
1.22	8331 "In position" signal.....	48
1.23	8332 Device status	49
1.24	8334 Digital inputs basic unit	53
1.25	8335 Digital outputs basic unit.....	60
1.26	8336 Output stage monitoring.....	70
1.27	8340 Fault memory	71
1.28	8341 Fault memory T0.....	72
1.29	8342 Fault memory T1.....	81
1.30	8343 Fault memory T2.....	90
1.31	8344 Fault memory T3.....	99
1.32	8345 Fault memory T4.....	109
1.33	8346 Data flexibilization layer code	118
1.34	8347 Data flexibilization layer data	118
1.35	8348 Data flexibilization layer setting values	121
1.36	8349 Data flexibilization layer status.....	123
1.37	8351 Fast power-off detection	128
1.38	8352 Touchprobe 1.....	129
1.39	8353 Touchprobe 2.....	134
1.40	8354 Fixed setpoints.....	138
1.41	8355 Brake 1.....	144
1.42	8356 Brake 2.....	145
1.43	8357 Limit values 1	146
1.44	8358 Limit values 2	149

1.45	8360 Motor data 1	152
1.46	8361 Motor data 2	157
1.47	8362 Control mode 1	161
1.48	8363 Control mode 2	163
1.49	8364 Control mode process values	164
1.50	8365 Fault manager	176
1.51	8366 Process data	178
1.52	8367 Process output data	180
1.53	8368 PI data	182
1.54	8370 Status word 1	183
1.55	8371 Status word 2	188
1.56	8372 Status word 3	191
1.57	8373 Control word 1	195
1.58	8374 Control word 2	199
1.59	8375 Control word 3	203
1.60	8376 Setpoint buffer	206
1.61	8377 Profile value buffer	221
1.62	8378 Low-resolution encoder	246
1.63	8381 Encoder 1	246
1.64	8382 Encoder 2	253
1.65	8383 Output stage process values filtered for display	264
1.66	8385 CFC diagnostics	266
1.67	8386 V/f diagnostics	267
1.68	8387 Parameter measurement diagnostics	267
1.69	8391 Fan control	268
1.70	8392 VFCPLUS 1	268
1.71	8393 VFCPLUS 2	273
1.72	8394 CFC 1	278
1.73	8395 CFC 2	281
1.74	8396 V/f 1	284
1.75	8397 V/f 2	288
1.76	8399 ELSM® PLUS 1	291
1.77	8400 ELSM® PLUS 2	292
1.78	8401 ELSM® diagnostics	293
1.79	8402 Current controller 1	294
1.80	8403 Current controller 2	295
1.81	8404 Speed controller 1	295
1.82	8405 Speed controller 2	300
1.83	8406 Position controller 1	306
1.84	8407 Position controller 2	306
1.85	8408 ELSM® 1	307
1.86	8409 ELSM® 2	312
1.87	8410 Power section – configuration data	318
1.88	8411 Motor configuration data	318
1.89	8412 Speed controller configuration data	328
1.90	8413 Position controller configuration data	330

1.91	8415 Power section – determine calibration data	330
1.92	8417 Determine resolver calibration data	333
1.93	8418 Encoder calibration – rotating 1	335
1.94	8419 Encoder calibration – rotating 2	336
1.95	8420 Encoder calibration – standstill 1	337
1.96	8421 Encoder calibration – standstill 2	339
1.97	8422 Net torque 1	342
1.98	8423 Net torque 2	343
1.99	8425 Smart motor setup	343
1.100	8430 Internal data backup	344
1.101	8431 Parameter setup	346
1.102	8432 Non-volatile memory – direct access	347
1.103	8433 Scope control	347
1.104	8434 Scope configuration	348
1.105	8435 Scope setting values	350
1.106	8436 System time	355
1.107	8437 Brake control	356
1.108	8438 Function activation	357
1.109	8439 Thermal motor protection	357
1.110	8440 Thermal motor protection 1	358
1.111	8441 Thermal motor protection 2	358
1.112	8442 General data – thermal motor protection 1	359
1.113	8443 General data – thermal motor protection 2	362
1.114	8444 TMU model 1 for synchronous motor	365
1.115	8445 TMU model 2 for synchronous motor	369
1.116	8446 I2t model for TMU 1	372
1.117	8447 I2t model for TMU 2	373
1.118	8448 Ex protection function category 2 – data 1	374
1.119	8449 Ex protection function category 2 – data 2	378
1.120	8450 Ex protection function category 2	382
1.121	8455 EtherCAT®/SBusPLUS	382
1.122	8456 EtherCAT®/SBusPLUS diagnostics	383
1.123	8480 FPGA registers	388
1.124	8495 Test module standby mode	388
1.125	8500 FCB selection	389
1.126	8501 FCB 01 output stage inhibit	392
1.127	8504 FCB 04 manual mode	393
1.128	8506 FCB 06 Interpolated speed control	397
1.129	8508 FCB 08 Interpolated torque control	398
1.130	8509 FCB 09 Position control	399
1.131	8510 FCB 10 Interpolated position control	402
1.132	8512 FCB 12 Reference travel	404
1.133	8518 FCB 18 Rotor position identification	404
1.134	8520 FCB 20 jog mode	409
1.135	8521 FCB 21 Brake test	412
1.136	8525 FCB 25 motor parameter measurement	414

1.137	8526 FCB 26 Stop at user limits	418
1.138	8550 Speed monitoring 1	419
1.139	8551 Speed monitoring 2	420
1.140	8552 FCB 12 Reference travel data 1	421
1.141	8553 FCB 12 Reference travel data 2	435
1.142	8554 User unit position 1	450
1.143	8555 User unit position 2	451
1.144	8556 User unit position active	452
1.145	8557 User unit velocity 1	453
1.146	8558 User unit velocity 2	454
1.147	8559 User unit velocity active	455
1.148	8560 User unit acceleration 1	457
1.149	8561 User unit acceleration 2	458
1.150	8562 User unit acceleration active	459
1.151	8563 Brake function 1	460
1.152	8564 Brake function 2	460
1.153	8565 Encoder assignment 1	461
1.154	8566 Encoder assignment 2	462
1.155	8567 "Motor at standstill" signal data 1	463
1.156	8568 "Motor at standstill" signal data 2	463
1.157	8569 "Motor at standstill" signal	464
1.158	8570.1 FCB 05 Speed control data 1	464
1.159	8571 FCB 05 Speed control data 2	468
1.160	8572 Limit switch data 1	471
1.161	8573 Limit switch data 2	473
1.162	8576 Primary frequency input	475
1.163	8577 Cam switch	476
1.164	8580 Digital inputs I/O option	499
1.165	8581 Digital outputs I/O option	505
1.166	8582 Analog inputs I/O option	515
1.167	8583 Analog outputs I/O option	520
1.168	8585 I/O option	526
1.169	8586 Standby mode	527
1.170	8587 Scope data channels	528
1.171	8603 General engineering data	530
1.172	8610 EU 400 V/50 Hz	531
1.173	8611 USA/CAN 460 V/60 Hz	533
1.174	8612 Configuration data BR/KR 380 V/60 Hz	535
1.175	8613 Configuration data BR/KR 440 V/60 Hz	537
1.176	8614 EU 230 V/50 Hz	539
1.177	8615 USA/CAN 230 V/60 Hz	541
1.178	8616 Configuration data BR/KR 220 V/60 Hz	543
1.179	8622 Programmable fault response	545
1.180	8700 DS general status values	550
1.181	8701 DS scope configuration	551

1 Parameter description

1.1 8299 Quality assurance

Quality assurance data

1.1.1 8299.1 Test data

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 944

Resolution: 1

Range of values: 0 to 255

Test data

1.1.2 8299.2 Power section test data

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 944

Resolution: 1

Range of values: 0 to 255

Test data of the power section.

1.2 8300 DeviceLabel

Device label

1.2.1 8300.1 Device identification

Factory setting: -

Data type: String8Bit (fill level array)

Data length: 31

Resolution:

Range of values:

Indicates the complete type designation of the inverter, e.g. MDA90A-0020-503-X-S00.

1.2.2 8300.2 GUID

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 16

Resolution: 1

Range of values: 0 to 255

A "Globally Unique Identifier" (GUI) is a globally unique number with 128 bits (16 bytes), and is used in distributed computer systems.

1.2.3 8300.6 Function status

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

The function status is a sequential number that represents a certain range of functions (scope of parameters, implemented functions).

1.2.4 8300.7 Technology activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Standard**
- 1= Positioning package
- 2= ELSM® PLUS

The display parameter "Technology activation" displays the activated control functions.

1.2.5 8300.8 Application activation

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 99

The display parameter "Activation level of the application modules" displays the currently present activation points for data flexibilization layer application modules.

1.2.6 8300.9 Device family

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= None**
- 16909057= MDA modular

- 16909059= MDD modular
- 16909313= MDX system
- 16909314= MDX technology

List of inverters that can be used.

1.2.7 8300.10 Device variant

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Device variant

1.2.8 8300.11 Pmot motor power asynchr. motor

Factory setting: 0

Unit: W

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Pmot motor power asynchr. motor

1.2.9 8300.12 Nominal line voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Nominal device voltage

1.2.10 8300.13 Line phases

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Connection type of the inverter: 1-phase or 3-phase.

1.2.11 8300.14 Radio interference suppression level

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter indicates the interference suppression of the inverter according to EN 61800-3.

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

1.2.12 8300.15 Standard bus system

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter indicates the communication interface to the inverter.

1.2.13 8300.16 Standard encoder system

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No encoder evaluation**

- 1= One encoder interface
- 2= Two encoder interfaces
- 3= Encoder evaluation via subcomponent

This parameter indicates the number of available encoder interfaces.

1.2.14 8300.17 Overview of implemented labels

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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.

1.2.15 8300.18 Nominal output current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Resolution so far still 0.001 A but 0.1 A is more meaningful.

1.2.16 8300.20 Component status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

This parameter indicates whether the device label entries are valid: The status bit of each entry that is not yet valid is set to "1". This means the label is valid if the value is "0".

1.2.17 8300.21 Power section configuration data set – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Part number of the power section configuration data set.

1.2.18 8300.22 Power section configuration data set – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version of the power section configuration data set.

1.2.19 8300.23 Power section configuration data set – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Power section configuration data set – release

1.2.20 8300.25 Main component firmware 1 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Part number of the basic unit firmware.

1.2.21 8300.26 Main component firmware 1 – version

Factory setting: 0

Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Version number of the basic unit firmware.

1.2.22 8300.27 Main component firmware 1 – release

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

1.2.23 8300.28 Main component firmware 2 – part number

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Part number of the device update manager firmware.

1.2.24 8300.29 Main component firmware 2 – version

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Version number of the device update manager firmware.

1.2.25 8300.30 Main component firmware 2 – release

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

1.2.26 8300.31 Main component firmware 3 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Part number of the main FPGA firmware.

1.2.27 8300.32 Main component firmware 3 – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version number of the main FPGA firmware.

1.2.28 8300.33 Main component firmware 3 – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Release number of the main FPGA firmware.

1.2.29 8300.34 Main component firmware 4 – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Part number of the basic unit firmware.

1.2.30 8300.35 Main component firmware 4 – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version number of the basic unit firmware.

1.2.31 8300.36 Main component firmware 4 – release

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Release number of the firmware of the basic unit.

1.2.32 8300.37 Main component hardware variant ID

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the current hardware variant ID of the control electronics.

1.2.33 8300.40 Device family subcomponents

Factory setting:

Data type: Enum (DataArray)

Data length: 5

Range of values:

- -16056064= Power section
- -15990528= CES11A – external encoder option
- -15924992= CID11A (7 x DIs)
- -15924736= CIA11A (1 x analog in, 1 x analog out)
- -15924480= CID21A (4 x DIs or 4 x DOs)
- -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
- 84411904= CFP21A – PROFIBUS
- 84412160= CFN21A – PROFINET

- 84412416= CFE21A – EtherNet/IP™ & Modbus/TCP
- 101318913= CSB21A
- 101318914= CSS21A
- 101318915= CSB31A
- 101318916= CSS31A

Name of the subcomponent.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.34 8300.41 Subcomponent firmware 1 – part number

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Part number of the subcomponent.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.35 8300.42 Subcomponent firmware 1 – version

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Version number of the subcomponent.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.36 8300.43 Subcomponent firmware 1 – release

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Release number of the subcomponent.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.37 8300.44 Subcomponent firmware 2 – part number

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Part number of the subcomponent firmware 2.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.38 8300.45 Subcomponent firmware 2 – version

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Version number of the subcomponent.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.39 8300.46 Subcomponent firmware 2 – release

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Release number of the subcomponent.

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.40 8300.47 Subcomponent hardware variant ID

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Variant ID of the subcomponent:

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.2.41 8300.48 Subcomponent function status

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Function status of the subcomponent:

- Offset 0: Power section
- Offset 1: DriveSafety/encoder 2
- Offset 2: Fieldbus option
- Offset 3: I/O option

1.3 8301 Mobile data label

Mobile data label

1.3.1 8301.9 Device family

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Device family

1.3.2 8301.11 Device power

Factory setting: 0

Unit: W

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Device power

1.3.3 8301.12 Device voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Device voltage

1.3.4 8301.40 Device family subcomponents

Factory setting: 0

Unit:

Data type: UInt32 (DataArray)

Data length: 5

Resolution: 1

Range of values: 0 to 4294967295

Device family subcomponents

1.4 8303 Customer label

This parameter is used to store customer-specific information.

1.4.1 8303.1 Customer-specific device designation

Factory setting:

Data type: String8Bit (fill level array)

Data length: 241

Resolution:

Range of values:

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

1.5 8304 Production label

This parameter is used to store the 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.

1.5.1 8304.1 Production number

Factory setting:

Data type: String8Bit (fill level array)

Data length: 32

Resolution:

Range of values:

Internal production number of the device.

1.5.2 8304.2 Device status

Factory setting:

Data type: String8Bit (fill level array)

Data length: 37

Resolution:

Range of values:

Device status: Fields 1 to 9 of the number in the status bar, on the nameplate or on the status label.

1.5.3 8304.3 Device ID add-on

Factory setting:

Data type: String8Bit (fill level array)

Data length: 11

Resolution:

Range of values:

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

1.5.4 8304.10 Option 1 – designation

Factory setting:

Data type: String8Bit (fill level array)

Data length: 9

Resolution:

Range of values:

Designation of option card 1.

1.5.5 8304.11 Option 1 – status

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Device status of option card 1.

1.5.6 8304.20 Option 2 – designation

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Designation of option card 2.

1.5.7 8304.21 Option 2 – status

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Device status of option card 2.

1.5.8 8304.30 Option 3 – designation

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Designation of option card 3.

1.5.9 8304.31 Option 3 – status

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Device status of option card 3.

1.5.10 8304.40 Option 4 – designation

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Designation of option card 4.

1.5.11 8304.41 Option 4 – status

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Device status of option card 4.

1.5.12 8304.50 Option 5 – designation

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Designation of option card 5.

1.5.13 8304.51 Option 5 – status

Factory setting:
Data type: String8Bit (fill level array)
Data length: 9
Resolution:
Range of values:
Device status of option card 5.

1.6 8305 Scan label

Scan label

1.6.1 8305.1 Device identification

Factory setting: -
Data type: String8Bit (fill level array)
Data length: 31
Resolution:

Range of values:
Device identification

1.6.2 8305.2 GUID

Factory setting: 0
Unit:
Data type: UInt8 (DataArray)
Data length: 16
Resolution: 1
Range of values: 0 to 255

A "Globally Unique Identifier" (GUI) is a globally unique number with 128 bits (16 bytes), and is used in distributed computer systems.

1.6.3 8305.3 Customer-specific device designation

Factory setting:
Data type: String8Bit (fill level array)
Data length: 241
Resolution:
Range of values:
Customer-specific device designation

1.6.4 8305.4 Production number

Factory setting:
Data type: String8Bit (fill level array)
Data length: 32
Resolution:
Range of values:
Production number

1.6.5 8305.5 Main component firmware 1 – part number

Factory setting: 0
Unit:
Data type: UInt32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Part number of the basic unit firmware.

1.6.6 8305.6 Main component firmware 1 – version

Factory setting: 0
Unit:
Data type: UInt32

Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Version number of the basic unit firmware.

1.6.7 8305.7 Main component firmware 1 – release

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

1.7 8310 Build info

Build info

1.7.1 8310.1 Changeset number

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Changeset number

1.7.2 8310.2 Changeset state

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Changeset state

1.7.3 8310.3 Release

Factory setting:
Data type: Enum
Data length: 1

Range of values:

- 0= No
- 1= Yes

Release

1.7.4 8310.4 Target name

Factory setting:

Data type: String8Bit (fill level array)

Data length: 81

Resolution:

Range of values:

Target name

1.7.5 8310.5 TFS build number

Factory setting:

Data type: String8Bit (fill level array)

Data length: 81

Resolution:

Range of values:

TFS build number

1.8 8312 Actual values output stage monitoring

Actual values output stage monitoring

1.8.1 8312.1 Chip temperature rise dynamic

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Utilization of the chip temperature rise for dynamic processes. When 100% is reached, the device is switched off with "Device utilization" fault.

1.8.2 8312.2 Dynamic utilization chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Utilization of the chip temperature for dynamic processes. When 100% is reached, the device is switched off with "Device utilization" fault.

1.8.3 8312.3 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Electromechanical utilization of the device (conductor tracks and terminals). When 100% is reached, the device is switched off with "Device utilization" fault.

1.8.4 8312.4 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Relative heat sink utilization with reference to the maximum temperature. When 100% is reached, the device is switched off with "Device utilization" fault.

1.8.5 8312.5 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the absolute heat sink temperature.

1.8.6 8312.6 Total utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.8.7 8312.7 Thermal current limit

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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.

1.8.8 8312.8 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

Status bits

1.9 8313 Determine inertia

Determine inertia.

1.9.1 8313.4 Actual inertia

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1 to 2147483647

Current inertia (last determined value).

1.9.2 8313.8 Speed filter weighting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1000 to 10000000

The time constant determined for the actual speed value filter according to the sub-specification can be weighted with this value.

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).

1.10.1 8314.1 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

This bit field displays the 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.

- 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 – enabled. 0 = not enabled, 1 = enabled
- Bit 4: Software limit switch negative enabled. 0 = not enabled, 1 = enabled
- Bit 5: Software limit switch positive. 0 = not hit, 1 = hit
- Bit 6: Software limit switch negative. 0 = not hit, 1 = hit

1.10.2 8314.2 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Hardware limit switch positive 1
- 1= Hardware limit switch negative 1
- 2= Hardware limit switch positive 2
- 3= Hardware limit switch negative 2

These bits are used to inform the inverter about limit switch states.

1.10.3 8314.4 Software limit switch negative

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Negative software limit switch

1.10.4 8314.5 Software limit switch positive

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Positive software limit switch

1.11 8316 Control mode process values control cycle

Control mode process values control cycle

1.11.1 8316.7 Possible operating modes

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

Possible operating modes

1.11.2 8316.11 Parameter measurement status asynchr. motor

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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= Plausible 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

Parameter measurement status asynchr. motor

1.11.3 8316.13 Limitation status flags

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= User current limit reached
- 1= Thermal current limit reached
- 2= Explosion protection current limit
- 3= Current limit reached by control mode
- 8= User torque limit reached
- 16= Speed monitoring motor mode – active
- 17= Speed monitoring generator mode – active

Limitation status flags

1.11.4 8316.25 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Actual position in system units.

1.11.5 8316.26 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Actual position in user units

1.11.6 8316.27 Actual position in user units – modulo

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

The current position is displayed in user units taking account of modulo scaling.

1.11.7 8316.61 Stator frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator frequency

1.11.8 8316.117 Relative torque-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.9 8316.118 Absolute torque-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.10 8316.119 Relative field-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.11 8316.120 Absolute field-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.12 8316.151 UqRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.13 8316.152 UdRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.14 8316.155 UaRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.15 8316.156 UbRefTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.16 8316.157 UaTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.17 8316.158 UbTr

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.11.18 8316.159 Absolute value of the setpoint voltage – rms value

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint voltage, value, absolute, rms value

1.11.19 8316.160 DC link voltage – instantaneous value

Factory setting: 0

Unit: mV

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Instantaneous value of the DC link voltage.

1.11.20 8316.181 PsiSRefTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint stator flux, value, instantaneous value

1.11.21 8316.182 PsiRRefTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint rotor flux, value, instantaneous value

1.11.22 8316.183 PsiSModTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator flux U-model, value, instantaneous value

1.11.23 8316.184 PsiRModTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux U-model, value, instantaneous value

1.11.24 8316.185 PsiSaModTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator flux U-model, a-component

1.11.25 8316.186 PsiSbModTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator flux U-model, b-component

1.11.26 8316.187 PsiRaUmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux U-model, a-component

1.11.27 8316.188 PsiRbUmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux U-model, b-component

1.11.28 8316.189 PsiRdlmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux I-model, d-component

1.11.29 8316.190 PsiRqlmodTr

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux I-model, q-component

1.11.30 8316.211 Apparent motor power

Factory setting: 0

Unit: VA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Apparent motor power

1.11.31 8316.212 Electrical effective motor power

Factory setting: 0

Unit: W

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Effective motor power (electrical)

1.11.32 8316.213 Reactive motor power

Factory setting: 0

Unit: VA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Reactive motor power

1.11.33 8316.221 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

PWM frequency

1.11.34 8316.231 Position encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Position encoder dead time

1.11.35 8316.232 Motor encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Motor encoder dead time

1.12 8318 Auto reset

This parameter can be used to reset faults automatically. This parameter family defines the reset strategy.

1.12.1 8318.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies whether faults are acknowledged automatically or not.

– OFF: No auto reset is performed. If a fault occurs, it must be acknowledged by means of a terminal configured to "Fault reset", by switching off the device, by means of a parameter, or by control word.

– ON: A fault is acknowledged automatically.

1.12.2 8318.2 Restart time

Factory setting: 3000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 1000 to 30000

This parameter specifies the time period between occurrence of the fault and fault acknowledgement.

1.12.3 8318.3 Counter

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 5

Counter

1.13 8321 Access rights

Access rights

1.13.1 8321.1 Current permission level

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter indicates the permission level active in the inverter. The permission level determines the write permission.

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

1.13.2 8321.2 Enter password

Factory setting: 707406378

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Here you can enter the password for activating the required permission level.

1.13.3 8321.3 Parameter lock

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to lock write access to inverter parameters (except for the parameter lock itself).

1.14 8322 Parameter set control

Parameter set control

1.14.1 8322.1 Active parameter set

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Parameter set 1
- 1= Parameter set 2

Indicates the active parameter set.

1.14.2 8322.2 Select parameter set

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **1= Parameter set 1**
- 2= Parameter set 2

Selection of active parameter set.

1.14.3 8322.3 Select parameter set from process data

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Parameter set 1
- 1= Parameter set 2

Select parameter set from process data

1.15 8323 "Velocity reference" signal

"Velocity reference" signal

1.15.1 8323.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Signal active

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

1.15.2 8323.2 Reference value 1

Factory setting: 7500000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 36000000

Speed reference value from which a signal is to be issued, parameter set 1.

1.15.3 8323.3 Hysteresis 1

Factory setting: 1000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 5000000

Hysteresis of the speed reference value. 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, parameter set 1.

1.15.4 8323.4 Delay time 1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 9000

Delay time for the speed reference signal. The condition for the signal must be fulfilled for at least this time so that the signal is set, parameter set 1.

1.15.5 8323.5 Polarity 1

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies when the signal is issued, parameter set 1.

1.16 8324 "Comparison of actual and setpoint velocity" signal

"Comparison of actual and setpoint velocity" signal

1.16.1 8324.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Signal active

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

1.16.2 8324.3 Half window width 1

Factory setting: 1000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 3000000

Hysteresis around the speed setpoint, parameter set 1

1.16.3 8324.4 Delay time 1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 9000

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

1.16.4 8324.5 Polarity 1

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Signal if actual value <> setpoint
- **1= Signal if actual value = setpoint**

This parameter specifies when the signal is set, parameter set 1

1.17 8325 "Current reference" signal

Current reference signal

1.17.1 8325.1 Signal active

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Signal active

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

1.17.2 8325.2 Reference value 1

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 200000

Current reference value with reference to nominal inverter current, parameter set 1.

1.17.3 8325.3 Hysteresis 1

Factory setting: 5000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 30000

Hysteresis of the current reference value. 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, parameter set 1.

1.17.4 8325.4 Delay time 1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 9000

Delay time for the current reference signal, parameter set 1.

1.17.5 8325.5 Polarity 1

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies when the signal is issued, parameter set 1.

1.18 8326 "Velocity window" signal

"Velocity window" signal

1.18.1 8326.1 Active signal

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- **0= Signal active**

Signal if the speed is within a speed window.

1.18.2 8326.2 Window center 1

Factory setting: 15000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Middle of the speed window to be set, parameter set 1

1.18.3 8326.3 Half window width 1

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Half the window width, calculated from the middle of the window to the upper/lower limit of the window, parameter set 1

1.18.4 8326.4 Delay time 1

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 9000

Delay time for the current reference signal, parameter set 1

1.18.5 8326.5 Polarity 1

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies when the signal is set, parameter set 1

1.19 8327 Limit signals

Limit signals

1.19.1 8327.1 Setpoint limit

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Application limit – velocity
- 1= Application limit – acceleration
- 2= Application limit – deceleration
- 3= Application limit – jerk time
- 4= Application limit – torque
- 5= Drive train – maximum speed
- 6= Drive train – maximum torque

This parameter indicates exceeded setpoint limits:

- Bit 0: Application limit – velocity
- Bit 1: Application limit – acceleration
- Bit 2: Application limit – deceleration
- Bit 3: Application limit – jerk time
- Bit 4: Application limit – torque
- Bit 5: Drive train – maximum speed
- Bit 6: Drive train – maximum torque

1.20 8328 Operating hours counter

Operating hours counter

1.20.1 8328.1 Power-applied hours

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total hours in which the inverter was supplied by DC 24 V, independent from the source (internal power supply or external supply). Storage cycle once per minute.

1.20.2 8328.2 Drive running hours

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

total hours in which the inverter was enabled. Storage cycle: once per minute.

1.20.3 8328.3 Internal power-applied hours

Factory setting: 0

Unit: min

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Internal power-applied hours

1.20.4 8328.10 Reset operating hours counter?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to reset the power-applied hours and drive running hours.

1.21 8329 kWh counter

kWh counter

1.21.1 8329.1 Active power of active drive

Factory setting: 0

Unit: W

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.21.2 8329.2 Reset kWh counter?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to reset the kWh counter.

1.21.3 8329.3 Active energy of active drive – motor mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total of the active energy the motor has consumed. This depends on the active parameter set.

1.21.4 8329.4 Active energy of active drive – generator mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total of the active energy the motor has generated. This depends on the active parameter set.

1.21.5 8329.5 Active energy of drive 1 – motor mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total of the electric active energy the motor has consumed in parameter set 1.

1.21.6 8329.6 Active energy of drive 1 – generator mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total of the electric active energy the motor has delivered in parameter set 1.

1.21.7 8329.7 Active energy of drive 2 – motor mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total of the electric active energy the motor has consumed in parameter set 2.

1.21.8 8329.8 Active energy of drive 2 – generator mode

Factory setting: 0

Unit: 100 Wh

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Total of the electric active energy the motor has delivered in parameter set 2.

1.22 8331 "In position" signal

"In position" signal

1.22.1 8331.1 Window width 1

Factory setting: 3

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

The "In position" signal is set 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 it is cleared irrespective of the device status, parameter set 1.

1.22.2 8331.2 Hysteresis 1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Target position hysteresis. When the position window is left, the "In position" signal is maintained until this value is exceeded, parameter set 1.

1.22.3 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

Range of values: -2147483648 to 2147483647

Actual target position in user units

1.22.4 8331.7 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= "In position" monitoring active
- 1= Signal active
- 2= Position window with overflow
- 3= Hysteresis range with overflow

Status bits

1.23 8332 Device status

Device status

1.23.1 8332.1 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Output stage enable
- 2= Setpoints active
- 3= Parameter set 1 active
- 4= Parameter set 2 active
- 5= Limits active
- 6= Active drive referenced
- 7= Safety option "RUN" active
- 8= Manual mode active
- 9= Configuration state
- 10= Power ON
- 11= Current FCB activated by safety option

This parameter indicates the state of the various device status bits:

- Bit 0: Ready for operation
- Bit 1: Output stage enable
- Bit 2: Setpoints active
- Bit 3: Parameter set 1 active
- Bit 4: Parameter set 2 active
- Bit 5: Limits active
- Bit 6: Active drive referenced
- Bit 7: Safety option "RUN" active
- Bit 8: Manual mode active
- Bit 9: Configuration state
- Bit 10: Power ON

1.23.2 8332.2 Actuator ready

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

State of the output stage of the device

1.23.3 8332.4 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= External device not ready

Control bits

1.23.4 8332.5 Activate startup state?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to parametrize the drive, for example via the interface.

– Yes: The drive stops at the application limit and then disables the output stage. You can quit this state only by setting "Activate startup state" = "No".

– No: The preset parameters are adopted and the drive is enabled again.

1.23.5 8332.7 "Not ready" status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= 24 V standby 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 flexibilization layer 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

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

– Bit 0: 24 V standby mode

– Bit 1: Internal supply faulty

– Bit 2: STO active

– Bit 3: Power section not ready

- Bit 4: Process data processing not ready
- Bit 5: External device not ready
- Bit 6: Data flexibilization layer not ready
- Bit 7: Encoder system(s) not ready
- Bit 8: Motor management not ready
- Bit 9: Task system not synchronized
- Bit 10: Standby mode active
- Bit 11: Startup state
- Bit 12: Basic initialization active
- Bit 13: Delivery state active
- Bit 14: Parameter download active
- Bit 15: Module bus not ready

1.23.6 8332.8 HMI status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

HMI status

1.24 8334 Digital inputs basic unit

Digital inputs of basic unit

1.24.1 8334.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03
- 4= DI04
- 5= DI05

Actual value of the digital inputs.

Bit 0 – bit x: DI00 - DI0x

1.24.2 8334.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03
- 4= DI04
- 5= DI05

The bit mask (negation mask) indicates when a terminal is 0-active depending on its assignment.

1.24.3 8334.3 Function state

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03

- 4= DI04
- 5= DI05

This index indicates the logical status of the function programmed via digital input bit by bit.

Bit 1 – bit x: DI01 - DI0x

1.24.4 8334.4 Touchprobe input

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Touchprobe input

Assign touchprobe function to an input.

1.24.5 8334.11 Function DI01

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

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"

Assignment of digital input DI01 of the basic unit.

1.24.6 8334.12 Function DI02

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

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"

Assignment of digital input DI02 of the basic unit.

1.24.7 8334.13 Function DI03

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

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data flexibilization layer input"

- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"

Assignment of digital input DI03 of the basic unit.

1.24.8 8334.14 Function DI04

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

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"

- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8576.1 Bit 0 "Primary frequency input"
- 8586.1 Bit 1 "Activate standby mode using digital inputs"

Assignment of digital input DI04 of the basic unit.

1.24.9 8334.15 Function DI05

Factory setting: 8365.6 Bit 0 "Control bits"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8334.4 Bit 0 "Touchprobe input"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"

- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
 - 8509.5 Bit 1 "FCB 09 Position control – accept position"
 - 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 velocity setpoint 2"
 - 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
 - 8586.1 Bit 1 "Activate standby mode using digital inputs"
- Assignment of digital input DI05 of the basic unit.

1.25 8335 Digital outputs basic unit

Digital outputs basic unit

1.25.1 8335.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

Actual value of the digital outputs.

– Bit 0: DB00

– Bit 1 – bit 4: DO00 - DO03

1.25.2 8335.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

The bit mask (negation mask) indicates when a terminal is 0-active depending on its assignment.

1.25.3 8335.3 Function status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

This index indicates the logical status of the function programmed via digital output bit by bit.

– Bit 0: DB00

– Bits 1 to 4: DO00 - DO03

1.25.4 8335.10 Function DO00

Factory setting: 8332.1 Bit 0 "Status bits"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 – active"
- 8322.1 Bit 1 "Parameter set 2 – active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Velocity window" signal active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO00 of the basic unit.

1.25.5 8335.11 Function DO01

Factory setting: 8332.1 Bit 1 "Status bits"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal active"
- 8326.1 Bit 0 "Velocity window" signal active"
- 8327.1 Bit 0 "Setpoint limit with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limit with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limit with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limit with application limit – torque"
- 8327.1 Bit 5 "Setpoint limit with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"

- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"

- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO01 of the basic unit.

1.25.6 8335.12 Function DO02

Factory setting: 8365.7 Bit 1 "Status bits"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 – active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Velocity window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO02 of the basic unit.

1.25.7 8335.13 Function DO03

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

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal active"
- 8326.1 Bit 0 "Velocity window" signal active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"

- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO03 of the basic unit.

1.26 8336 Output stage monitoring

Parameters of output stage monitoring

1.26.1 8336.1 Prewarning threshold – heat sink utilization

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

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

1.26.2 8336.2 Prewarning threshold – electromechanical utilization

Factory setting: 100000

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

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

1.27 8340 Fault memory

Fault memory

1.27.1 8340.1 Clear fault history?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

Activating this parameter will clear the fault memory. The parameter is reset automatically to "No".

1.27.2 8340.10 Index of user parameter 1

Factory setting: 8373.1 Actual value

Data type: Parameter pointer

Data length: 1

Range of values:

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.

1.27.3 8340.11 Index of user parameter 2

Factory setting: 8370.1 Actual value

Data type: Parameter pointer

Data length: 1

Range of values:

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.

1.27.4 8340.20 Timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Timestamp for fault logging.

1.28 8341 Fault memory T0

Fault memory T0 = most recent fault

1.28.1 8341.1 Fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the main fault that occurred at time T0 (bits 8 to 15).

Number of the subfault that occurred at time T0 (bits 0 to 7).

1.28.2 8341.2 Developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

For information on this parameter, contact SEW-EURODRIVE.

1.28.3 8341.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the subcomponent fault that occurred at the time T0.

1.28.4 8341.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 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 (T0).

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).

1.28.5 8341.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of power-applied hours at the time T0 when the fault occurred.

1.28.6 8341.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of drive running hours at the time T0 when the fault occurred.

1.28.7 8341.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Output stage enable
- 2= Setpoints active
- 3= Parameter set 1 active
- 4= Parameter set 2 active
- 5= Limits active
- 6= Active drive referenced
- 7= Safety option "RUN" active
- 8= Manual mode active
- 9= Configuration state
- 10= Power ON
- 11= Current FCB activated by safety option

Device status at the time T0 when the fault occurred, coded bit-wise.

1.28.8 8341.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Axis status at the time T0 when the fault occurred.

1.28.9 8341.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> 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
- 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 DriveSafety
 - 24= FCB 24
 - 25= FCB 25 Motor parameter measurement
 - 26= FCB 26 Stop at user limits
- Indicates the FCB selected at the time when the fault occurred.

1.28.10 8341.10 Digital inputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03
- 4= DI04
- 5= DI05

Indicates the state of digital inputs of the basic unit at the time when the fault occurred.

1.28.11 8341.11 Digital outputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

Indicates the state of digital outputs of the basic unit at the time when the fault occurred.

1.28.12 8341.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the actual position of the axis in system units at the time when the fault occurred.

1.28.13 8341.13 Actual velocity in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.28.14 8341.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the output frequency of the inverter at the time when the fault occurred.

1.28.15 8341.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque of the motor at the time when the fault occurred.

1.28.16 8341.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the output voltage of the inverter at the time when the fault occurred.

1.28.17 8341.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

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

1.28.18 8341.18 Apparent output current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the apparent output current of the inverter at the time when the fault occurred.

1.28.19 8341.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque-generating current of the inverter at the time when the fault occurred.

1.28.20 8341.20 Parameter set

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1

Indicates the active parameter set at the time when the fault occurred.

1.28.21 8341.21 Subcomponent developer code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.28.22 8341.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Thermal motor utilization at the time T0 when the fault occurred.

– 0 %: Measured temperature below 40 °C.

– 100%: Switch-off temperature reached.

1.28.23 8341.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the motor temperature determined at the time when fault T0 occurred.

1.28.24 8341.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the device utilization determined at the time T0 when the fault occurred.

1.28.25 8341.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the heat sink utilization determined at the time T0 when the fault occurred.

1.28.26 8341.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the heat sink temperature determined at the time T0 when the fault occurred.

1.28.27 8341.37 Dynamic utilization chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the dynamic chip temperature rise determined at the time T0 when the fault occurred.

1.28.28 8341.38 Dynamic utilization chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the relative dynamic chip temperature rise determined at the time T0 when the fault occurred.

1.28.29 8341.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the electromechanical utilization determined at the time T0 when the fault occurred.

1.28.30 8341.50 Digital input I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13
- 4= DI14
- 5= DI15
- 6= DI16

Indicates the state of digital inputs of the I/O option at the time T0 when the fault occurred.

1.28.31 8341.51 Digital outputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11
- 2= DO12
- 3= DO13

Indicates the state of digital outputs of the I/O option at the time T0 when the fault occurred.

1.28.32 8341.100 Index of user parameter 1

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 1 selected for logging at the time T0 when the fault occurred.

1.28.33 8341.101 Value of user parameter 1

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the index number of user parameter 1 selected for logging at the time T0 when the fault occurred.

1.28.34 8341.102 Index of user parameter 2

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 2 selected for logging at the time T0 when the fault occurred.

1.28.35 8341.103 Value of user parameter 2

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the index number of user parameter 2 selected for logging at the time T0 when the fault occurred.

1.29 8342 Fault memory T1

Fault memory T1

1.29.1 8342.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the main fault that occurred at time T1 (bits 8 to 15).

Number of the subfault that occurred at time T1 (bits 0 to 7).

1.29.2 8342.2 Developer code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.29.3 8342.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the subcomponent fault that occurred at time T1.

1.29.4 8342.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 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 (T1).

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).

1.29.5 8342.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of power-applied hours at the time T1 when the fault occurred.

1.29.6 8342.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of drive running hours at the time T1 when the fault occurred.

1.29.7 8342.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Output stage enable
- 2= Setpoints active
- 3= Parameter set 1 active
- 4= Parameter set 2 active
- 5= Limits active
- 6= Active drive referenced
- 7= Safety option "RUN" active
- 8= Manual mode active
- 9= Configuration state
- 10= Power ON
- 11= Current FCB activated by safety option

Device status at the time T1 when the fault occurred, coded bit-wise.

1.29.8 8342.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Axis status at the time T1 when the fault occurred.

1.29.9 8342.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> 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
 - 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 DriveSafety
 - 24= FCB 24
 - 25= FCB 25 Motor parameter measurement
 - 26= FCB 26 Stop at user limits
- Indicates the FCB selected at the time when the fault occurred.

1.29.10 8342.10 Digital inputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03
- 4= DI04
- 5= DI05

Indicates the state of digital inputs of the basic unit at the time when the fault occurred.

1.29.11 8342.11 Digital outputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00

- 2= DO01
- 3= DO02
- 4= DO03

Indicates the state of digital outputs of the basic unit at the time when the fault occurred.

1.29.12 8342.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the actual position of the axis in system units at the time when the fault occurred.

1.29.13 8342.13 Actual velocity in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.29.14 8342.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the output frequency of the inverter at the time when the fault occurred.

1.29.15 8342.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque of the motor at the time when the fault occurred.

1.29.16 8342.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the output voltage of the inverter at the time when the fault occurred.

1.29.17 8342.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

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

1.29.18 8342.18 Apparent output current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the apparent output current of the inverter at the time when the fault occurred.

1.29.19 8342.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque-generating current of the inverter at the time when the fault occurred.

1.29.20 8342.20 Parameter set

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1

Indicates the active parameter set at the time when the fault occurred.

1.29.21 8342.21 Subcomponent developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.29.22 8342.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Thermal motor utilization at the time T1 when the fault occurred.

– 0%: Measured temperature below 40 °C.

– 100%: Switch-off temperature reached.

1.29.23 8342.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the motor temperature determined at the time T1 when the fault occurred.

1.29.24 8342.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the device utilization determined at the time T1 when the fault occurred.

1.29.25 8342.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the heat sink utilization determined at the time T1 when the fault occurred.

1.29.26 8342.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the heat sink temperature determined at the time T1 when the fault occurred.

1.29.27 8342.37 Dynamic utilization chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the dynamic chip temperature rise determined at the time T1 when the fault occurred.

1.29.28 8342.38 Dynamic utilization chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the relative dynamic chip temperature rise determined at the time T1 when the fault occurred.

1.29.29 8342.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the electromechanical utilization determined at the time T1 when the fault occurred.

1.29.30 8342.50 Digital inputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13
- 4= DI14
- 5= DI15
- 6= DI16

Indicates the state of digital inputs of the I/O option at the time T1 when the fault occurred.

1.29.31 8342.51 Digital outputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11
- 2= DO12
- 3= DO13

Indicates the state of digital outputs of the I/O option at the time T1 when the fault occurred.

1.29.32 8342.100 Index of user parameter 1

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 1 selected for logging at the time T1 when the fault occurred.

1.29.33 8342.101 Value of user parameter 1

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the value of user parameter 1 selected for logging at the time T1 when the fault occurred.

1.29.34 8342.102 Index of user parameter 2

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 2 selected for logging at the time T1 when the fault occurred.

1.29.35 8342.103 Value of user parameter 2

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the value of user parameter 2 selected for logging at the time T1 when the fault occurred.

1.30 8343 Fault memory T2

Fault memory T2

1.30.1 8343.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the main fault that occurred at time T2 (bits 8 to 15).

Number of the subfault that occurred at time T2 (bits 0 to 7).

1.30.2 8343.2 Developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.30.3 8343.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the subcomponent fault that occurred at time T2.

1.30.4 8343.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 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 (T2).

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).

1.30.5 8343.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of power-applied hours at the time T2 when the fault occurred.

1.30.6 8343.6 Drive running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of drive running hours at the time T2.

1.30.7 8343.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Output stage enable
- 2= Setpoints active
- 3= Parameter set 1 active
- 4= Parameter set 2 active
- 5= Limits active
- 6= Active drive referenced
- 7= Safety option "RUN" active
- 8= Manual mode active
- 9= Configuration state
- 10= Power ON
- 11= Current FCB activated by safety option

Device status at the time T2 when the fault occurred, coded bit-wise.

1.30.8 8343.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Axis status at the time T2 when the fault occurred.

1.30.9 8343.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> 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
- 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 DriveSafety
- 24= FCB 24
- 25= FCB 25 Motor parameter measurement
- 26= FCB 26 Stop at user limits

Indicates the FCB selected at the time when the fault occurred.

1.30.10 8343.10 Digital inputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03
- 4= DI04
- 5= DI05

Indicates the state of digital inputs of the basic unit at the time when the fault occurred.

1.30.11 8343.11 Digital outputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

Indicates the state of digital outputs of the basic unit at the time when the fault occurred.

1.30.12 8343.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the actual position of the axis in system units at the time when the fault occurred.

1.30.13 8343.13 Actual velocity in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.30.14 8343.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the output frequency of the inverter at the time when the fault occurred.

1.30.15 8343.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque of the motor at the time when the fault occurred.

1.30.16 8343.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the output voltage of the inverter at the time when the fault occurred.

1.30.17 8343.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

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

1.30.18 8343.18 Apparent output current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the apparent output current of the inverter at the time when the fault occurred.

1.30.19 8343.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque-generating current of the inverter at the time when the fault occurred.

1.30.20 8343.20 Parameter set

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1

Indicates the active parameter set at the time when the fault occurred.

1.30.21 8343.21 Subcomponent developer code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.30.22 8343.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Thermal utilization of the motor at the time T2 when the fault occurred.

– 0%: Measured temperature below 40 °C.

– 100%: Switch-off temperature reached.

1.30.23 8343.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the motor temperature determined at the time T2 when the fault occurred.

1.30.24 8343.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the device utilization determined at the time T2 when the fault occurred.

1.30.25 8343.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the heat sink utilization determined at the time T2 when the fault occurred.

1.30.26 8343.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the heat sink temperature determined at the time T2 when the fault occurred.

1.30.27 8343.37 Dynamic utilization chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the dynamic chip temperature rise determined at the time T2 when the fault occurred.

1.30.28 8343.38 Dynamic utilization chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the relative dynamic chip temperature rise determined at the time T2 when the fault occurred.

1.30.29 8343.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the electromechanical utilization determined at the time T2 when the fault occurred.

1.30.30 8343.50 Digital inputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13
- 4= DI14
- 5= DI15
- 6= DI16

Indicates the state of digital inputs of the I/O option at the time T2 when the fault occurred.

1.30.31 8343.51 Digital outputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11
- 2= DO12
- 3= DO13

Indicates the state of digital outputs of the I/O option at the time T2 when the fault occurred.

1.30.32 8343.100 Index of user parameter 1

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 1 selected for logging at the time T2 when the fault occurred.

1.30.33 8343.101 Value of user parameter 1

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the index number of user parameter 1 selected for logging at the time T2 when the fault occurred.

1.30.34 8343.102 Index of user parameter 2

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 2 selected for logging at the time T2 when the fault occurred.

1.30.35 8343.103 Value of user parameter 2

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the index number of user parameter 2 selected for logging at the time T2 when the fault occurred.

1.31 8344 Fault memory T3

Fault memory T3

1.31.1 8344.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the main fault that occurred at time T3 (bits 8 to 15).

Number of the subfault that occurred at time T3 (bits 0 to 7).

1.31.2 8344.2 Developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.31.3 8344.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the subcomponent fault that occurred at time T3.

1.31.4 8344.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 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 (T3).

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).

1.31.5 8344.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of power-applied hours at the time T3 when the fault occurred.

1.31.6 8344.6 Drive running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of drive running hours at the time T3.

1.31.7 8344.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Output stage enable
- 2= Setpoints active
- 3= Parameter set 1 active
- 4= Parameter set 2 active
- 5= Limits active
- 6= Active drive referenced
- 7= Safety option "RUN" active
- 8= Manual mode active
- 9= Configuration state
- 10= Power ON
- 11= Current FCB activated by safety option

Device status at the time T3 when the fault occurred, coded bit-wise.

1.31.8 8344.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Axis status at the time T3 when the fault occurred.

1.31.9 8344.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> 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
 - 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 DriveSafety
 - 24= FCB 24
 - 25= FCB 25 Motor parameter measurement
 - 26= FCB 26 Stop at user limits
- Indicates the FCB selected at the time when the fault occurred.

1.31.10 8344.10 Digital inputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03

- 4= DI04
- 5= DI05

Indicates the state of digital inputs of the basic unit at the time when the fault occurred.

1.31.11 8344.11 Digital outputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

Indicates the state of digital outputs of the basic unit at the time when the fault occurred.

1.31.12 8344.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the actual position of the axis in system units at the time when the fault occurred.

1.31.13 8344.13 Actual velocity in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.31.14 8344.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the output frequency of the inverter at the time when the fault occurred.

1.31.15 8344.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque of the motor at the time when the fault occurred.

1.31.16 8344.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the output voltage of the inverter at the time when the fault occurred.

1.31.17 8344.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

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

1.31.18 8344.18 Apparent output current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the apparent output current of the inverter at the time when the fault occurred.

1.31.19 8344.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque-generating current of the inverter at the time when the fault occurred.

1.31.20 8344.20 Parameter set

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1

Indicates the active parameter set at the time when the fault occurred.

1.31.21 8344.21 Subcomponent developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.31.22 8344.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Thermal utilization of the motor at the time T3 when the fault occurred.

– 0%: Measured temperature below 40 °C.

– 100%: Switch-off temperature reached.

1.31.23 8344.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the motor temperature determined at the time T3 when the fault occurred.

1.31.24 8344.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the device utilization determined at the time T3 when the fault occurred.

1.31.25 8344.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the heat sink utilization determined at the time T3 when the fault occurred.

1.31.26 8344.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the heat sink temperature determined at the time T3 when the fault occurred.

1.31.27 8344.37 Dynamic utilization chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the dynamic chip temperature rise at the time T3 when the fault occurred.

1.31.28 8344.38 Dynamic utilization chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the relative dynamic chip temperature rise determined at the time T3 when the fault occurred.

1.31.29 8344.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the electromechanical load at the time T3 when the fault occurred.

1.31.30 8344.50 Digital inputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13
- 4= DI14
- 5= DI15
- 6= DI16

Indicates the state of digital inputs of the I/O option at the time T3 when the fault occurred.

1.31.31 8344.51 Digital outputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11

- 2= DO12
- 3= DO13

Indicates the state of digital outputs of the I/O option at the time T3 when the fault occurred.

1.31.32 8344.100 Index of user parameter 1

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 1 selected for logging at the time T3 when the fault occurred.

1.31.33 8344.101 Value of user parameter 1

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the value of user parameter 1 selected for logging at the time T3 when the fault occurred.

1.31.34 8344.102 Index of user parameter 2

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 2 selected for logging at the time T3 when the fault occurred.

1.31.35 8344.103 Value of user parameter 2

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the value of user parameter 2 selected for logging at the time T3 when the fault occurred.

1.32 8345 Fault memory T4

Fault memory T4

1.32.1 8345.1 Fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the main fault that occurred at time T4 (bits 8 to 15).

Number of the subfault that occurred at time T4 (bits 0 to 7).

1.32.2 8345.2 Developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.32.3 8345.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of the subcomponent fault that occurred at time T4.

1.32.4 8345.4 Fault timestamp

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 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 (T4).

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).

1.32.5 8345.5 Power-applied hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of power-applied hours at the time T4 when the fault occurred.

1.32.6 8345.6 Drive-running hours

Factory setting: 0

Unit: min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Contains the number of drive running hours at the time T4 when the fault occurred.

1.32.7 8345.7 Device status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Output stage enable
- 2= Setpoints active
- 3= Parameter set 1 active
- 4= Parameter set 2 active
- 5= Limits active
- 6= Active drive referenced
- 7= Safety option "RUN" active
- 8= Manual mode active
- 9= Configuration state
- 10= Power ON
- 11= Current FCB activated by safety option

Device status at the time T4 when the fault occurred, coded bit-wise.

1.32.8 8345.8 Axis status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Axis status at the time T4 when the fault occurred.

1.32.9 8345.9 FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> 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
- 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 DriveSafety
- 24= FCB 24
- 25= FCB 25 Motor parameter measurement
- 26= FCB 26 Stop at user limits

Indicates the FCB selected at the time when the fault occurred.

1.32.10 8345.10 Digital inputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI00
- 1= DI01
- 2= DI02
- 3= DI03
- 4= DI04
- 5= DI05

Indicates the state of digital inputs of the basic unit at the time when the fault occurred.

1.32.11 8345.11 Digital outputs basic unit – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DB00
- 1= DO00
- 2= DO01
- 3= DO02
- 4= DO03

Indicates the state of digital outputs of the basic unit at the time when the fault occurred.

1.32.12 8345.12 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the actual position of the axis in system units at the time when the fault occurred.

1.32.13 8345.13 Actual velocity in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.32.14 8345.14 Actual frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the output frequency of the inverter at the time when the fault occurred.

1.32.15 8345.15 Actual torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque of the motor at the time when the fault occurred.

1.32.16 8345.16 Output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the output voltage of the inverter at the time when the fault occurred.

1.32.17 8345.17 DC link voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

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

1.32.18 8345.18 Apparent output current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the apparent output current of the inverter at the time when the fault occurred.

1.32.19 8345.19 Torque-generating current

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the torque-generating current of the inverter at the time when the fault occurred.

1.32.20 8345.20 Parameter set

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1

Indicates the active parameter set at the time when the fault occurred.

1.32.21 8345.21 Subcomponent developer code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.32.22 8345.32 Motor utilization KTY

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Thermal utilization of the motor at the time T4 when the fault occurred.

– 0%: Measured temperature below 40 °C.

– 100%: Switch-off temperature reached.

1.32.23 8345.33 Motor temperature KTY

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the motor temperature determined at the time T4 when the fault occurred.

1.32.24 8345.34 Device utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the device utilization determined at the time T4 when the fault occurred.

1.32.25 8345.35 Heat sink utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Indicates the heat sink utilization determined at the time T4 when the fault occurred.

1.32.26 8345.36 Heat sink temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the heat sink temperature determined at the time T4 when the fault occurred.

1.32.27 8345.37 Dynamic utilization chip temperature rise

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the dynamic chip temperature rise at the time T4 when the fault occurred.

1.32.28 8345.38 Dynamic utilization chip absolute

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the relative dynamic chip temperature rise determined at the time T4 when the fault occurred.

1.32.29 8345.39 Electromechanical utilization

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the electromechanical load at the time T4 when the fault occurred.

1.32.30 8345.50 Digital inputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13
- 4= DI14
- 5= DI15
- 6= DI16

Indicates the state of digital inputs of the I/O option at the time T4 when the fault occurred.

1.32.31 8345.51 Digital outputs I/O option – physical level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11
- 2= DO12
- 3= DO13

Indicates the state of digital outputs of the I/O option at the time T4 when the fault occurred.

1.32.32 8345.100 Index of user parameter 1

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 1 selected for logging at the time T4 when the fault occurred.

1.32.33 8345.101 Value of user parameter 1

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the value of user parameter 1 selected for logging at the time T4 when the fault occurred.

1.32.34 8345.102 Index of user parameter 2

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

Indicates the index number of user parameter 2 selected for logging at the time T4 when the fault occurred.

1.32.35 8345.103 Value of user parameter 2

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the value of user parameter 2 selected for logging at the time T4 when the fault occurred.

1.33 8346 Data flexibilization layer code

Data flexibilization layer code

1.33.1 8346.1 Code

Factory setting:

- 0
- 0

Unit:

Data type: Uint32 (fill level array)

Data length: 2048

Resolution: 1

Range of values: 0 to 4294967295

Code

1.34 8347 Data flexibilization layer data

Data flexibilization layer data

1.34.1 8347.1 Globals

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 256

Resolution: 1

Range of values: 0 to 4294967295

Globals

1.34.2 8347.2 Locals Task Init

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 128

Resolution: 1

Range of values: 0 to 4294967295

Locals Task Init

1.34.3 8347.3 Locals Task PD In

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 128

Resolution: 1

Range of values: 0 to 4294967295

Locals Task PD In

1.34.4 8347.4 Locals Task PD Out

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 128

Resolution: 1

Range of values: 0 to 4294967295

Locals Task PD Out

1.34.5 8347.5 Locals Task Free

Factory setting: 0

Unit:

Data type: Uint32 (DataArray)

Data length: 128

Resolution: 1

Range of values: 0 to 4294967295

Locals Task Free

1.34.6 8347.6 Configuration data

Factory setting:

- 0
- 0

Unit:

Data type: Uint32 (DataArray)

Data length: 32

Resolution: 1

Range of values: 0 to 4294967295

Configuration data

1.34.7 8347.7 Read pointer

Factory setting: 0.0 No function

Data type: Parameter pointer (DataArray)

Data length: 16

Range of values:

Data pointer connections for reading data for the data flexibilization layer task.

1.34.8 8347.8 Write pointer

Factory setting: 0.0 No function

Data type: Parameter pointer (DataArray)

Data length: 16

Range of values:

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

1.34.9 8347.9 - 8347.40 Array size 32 Output data

Factory setting:

Data type: Bit field (array)

Data length: 32

Range of values:

- 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.

1.35 8348 Data flexibilization layer setting values

Data flexibilization layer setting values

1.35.1 8348.1 Ctrl

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Ctrl

1.35.2 8348.2 Task Init Ctrl

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Task Init Ctrl

1.35.3 8348.3 Task PD In Ctrl

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Task PD In Ctrl

1.35.4 8348.4 Task PD Out Ctrl

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Task PD Out Ctrl

1.35.5 8348.5 Task Free Ctrl

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Task Free Ctrl

1.35.6 8348.6 Debug mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Debug mode

1.35.7 8348.7 Auto start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Auto start

1.35.8 8348.8 BrakePointCtrl

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

BrakePointCtrl

1.36 8349 Data flexibilization layer status

Data flexibilization layer status

1.36.1 8349.1 Status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Idle**
- 1= Run
- 2= Stop
- 3= Error
- 4= Reset
- 5= ResetDone
- 6= InitReset
- 7= InitResetDone

State

1.36.2 8349.2 Task Init State

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Stop**
- 1= Run
- 2= ProgStop
- 3= Error
- 4= Break
- 5= Single
- 6= Reset
- 7= StepOver

Task Init State

1.36.3 8349.3 Task PD In State

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Stop**
- 1= Run
- 2= ProgStop
- 3= Error
- 4= Break
- 5= Single
- 6= Reset
- 7= StepOver

Task PD In State

1.36.4 8349.4 Task PD Out State

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Stop**
- 1= Run
- 2= ProgStop
- 3= Error
- 4= Break
- 5= Single

- 6= Reset
 - 7= StepOver
- Task PD Out State

1.36.5 8349.5 Task Free State

Factory setting:
Data type: Enum
Data length: 1
Range of values:

- **0= Stop**
- 1= Run
- 2= ProgStop
- 3= Error
- 4= Break
- 5= Single
- 6= Reset
- 7= StepOver

Task Free State

1.36.6 8349.6 Task Init IP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -1073741824 to 1073741823
Task Init IP

1.36.7 8349.7 Task PD In IP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -1073741824 to 1073741823
Task PD In IP

1.36.8 8349.8 Task PD Out IP

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

Resolution: 1

Range of values: -1073741824 to 1073741823

Task PD Out IP

1.36.9 8349.9 Task Free IP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

Task Free IP

1.36.10 8349.10 Task Init Locals-SP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

Task Init Locals-SP

1.36.11 8349.11 Task PD In Locals-SP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

Task PD In Locals-SP

1.36.12 8349.12 Task PD Out Locals-SP

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

Task PD Out Locals-SP

1.36.13 8349.13 Task Free Locals-SP

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -1073741824 to 1073741823
Task Free Locals-SP

1.36.14 8349.14 Runtime PD in

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Runtime PD in

1.36.15 8349.15 Runtime PD out

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Runtime PD out

1.36.16 8349.16 Init Done

Factory setting:
Data type: Enum
Data length: 1
Range of values:
• 0= No
• 1= Yes
Init Done

1.36.17 8349.17 Version

Factory setting: 0
Unit:
Data type: UInt32
Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version

1.36.18 8349.18 Input

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Data flexibilization layer input

Input

1.37 8351 Fast power-off detection

Fast power-off detection

1.37.1 8351.1 Power off response

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- **4= Inhibit output stage**

Response of the drive when the value drops below the level specified in 8351.5 "DC link level for power-off".

1.37.2 8351.4 Activate?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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.

- Yes: Activate monitoring
- No

1.37.3 8351.5 DC link level for power-off

Factory setting: 450000

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 2048000

This parameter specifies the limit under which the DC link voltage is interpreted as power-off. The power-off response is performed when the value drops below the specified limit.

1.38 8352 Touchprobe 1

The touchprobe function allows for maintaining any process data in case of 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.

If the type of activation of the touchprobe channel is selected and if "single trigger" and "auto restart" are activated at the same time, then "auto restart" will be performed.

– "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.

– If neither "single trigger" nor "auto restart" have been selected, then the function is disabled.

– If "single trigger" and "auto restart" have been selected, then "auto restart" is performed.

1.38.1 8352.1 Mode

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Single trigger
- 1= Auto restart

This index is used to activate functions bit-by-bit:

Bit 1: Auto restart

Bit 0: Single trigger

– 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.

1.38.2 8352.2 Status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Wait for trigger
- 1= Trigger activated

Current status:

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

1.38.3 8352.3 Detected value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Data source value detected at the time of the trigger.

1.38.4 8352.10 Trigger source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= C track encoder 1
- 1= C track encoder 2
- **3= DI01**
- 4= DI02
- 5= DI03
- 6= DI04
- 7= DI05

Trigger source selection:

- C track encoder 1
- C track encoder 2
- DI01 to DI0x

1.38.5 8352.11 Trigger – level

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies the type of edge used for triggering:

- Rising edge
- Falling edge
- Rising and falling edges

1.38.6 8352.12 Trigger – sensor dead time rising edge

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to enter the dead time of the sensor in use for a rising edge at the trigger input. The time will be included in the calculation of the touchprobe event value.

1.38.7 8352.13 Trigger – sensor dead time falling edge

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to enter the dead time of the sensor in use for a falling edge at the trigger input. The time will be included in the calculation of the touchprobe event value.

1.38.8 8352.14 Trigger – counter

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

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

1.38.9 8352.30 Data source

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

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

Selection of the data source for trigger recording.

1.38.10 8352.31 PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

The parameter only has an effect when accessing PO data words.

The data format is specified when accessing the PO data words. PO data words have a width of 16 bits and can be combined to a 32-bit value using the PO data format. This parameter has no effect for data sources with a word width of 32 bits.

1.38.11 8352.32 Modulo – min. interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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 min." must be set to the value "0".

1.38.12 8352.32 Modulo – max. interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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 max." must be set to the value "1000000".

1.38.13 8352.34 Process data dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Range of values: 0 to 100000

This parameter is used to enter the edge of the process data delay. This time is included in the calculation of the touchprobe event value.

1.38.14 8352.35 Process data cycle time

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Range of values: 0 to 100000

Cycle time of the process data data source.

1.39 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.

If the type of activation of the touchprobe channel is selected and if "single trigger" and "auto restart" are activated at the same time, then "auto restart" will be performed.

– "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.

– If neither "single trigger" nor "auto restart" have been selected, then the function is disabled.

– If "single trigger" and "auto restart" have been selected, then "auto restart" is performed.

1.39.1 8353.1 Mode

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Single trigger
- 1= Auto restart

This index is used to activate functions bit-by-bit.

Bit 1: Auto restart

Bit 0: Single trigger

– 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.

1.39.2 8353.2 Status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Wait for trigger
- 1= Trigger activated

Current status:

– Bit 0: Wait for trigger

– Bit 1: Trigger activated

1.39.3 8353.3 Detected value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Data source value detected at the time of the trigger.

1.39.4 8353.10 Trigger source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= C track encoder 1
- 1= C track encoder 2
- **3= DI01**
- 4= DI02
- 5= DI03
- 6= DI04
- 7= DI05

Trigger source selection:

- C track encoder 1
- C track encoder 2
- DI01 to DI0x

1.39.5 8353.11 Trigger – level

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies the type of edge used for triggering:

- Rising edge
- Falling edge
- Rising and falling edges

1.39.6 8353.12 Trigger – sensor dead time rising edge

Factory setting: 0

Unit: μs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to enter the dead time of the sensor in use for a rising edge at the trigger input. This time will be included in the calculation of the touchprobe event value.

1.39.7 8353.13 Trigger – sensor dead time falling edge

Factory setting: 0

Unit: μs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to enter the dead time of the sensor in use for a falling edge at the trigger input. This time will be included in the calculation of the touchprobe event value.

1.39.8 8353.14 Trigger – counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

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

1.39.9 8353.30 Data source

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

- 0.0 No function
- 8364.25 Actual position in system units
- 8364.26 Actual position in user units
- 8364.27 Actual position in user units modulo
- 8367.10 Process output data
- 8367.11 Process output data
- 8367.12 Process output data
- 8367.13 Process output data
- 8367.14 Process output data

- 8367.15 Process output data
- 8367.16 Process output data
- 8367.17 Process output data
- 8367.18 Process output data
- 8367.19 Process output data
- 8367.20 Process output data
- 8367.21 Process output data
- 8367.22 Process output data
- 8367.23 Process output data
- 8367.24 Process output data
- 8367.25 Process output data
- 8436.2 System time low part

Selection of the data source for trigger recording.

1.39.10 8353.31 PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

The parameter only has an effect when accessing PO data words.

The data format is specified when accessing the PO data words. PO data words have a width of 16 bits and can be combined to a 32-bit value using the PO data format. This parameter has no effect for data sources with a word width of 32 bits.

1.39.11 8353.32 Modulo – min. interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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 min." must be set to the value "0".

1.39.12 8353.13 Modulo – max. interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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 of 0 to 999999.

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

1.39.13 8353.34 Process data dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Range of values: 0 to 100000

This parameter is used to enter the edge of the process data delay. This time will be included in the calculation of the touchprobe event value.

1.39.14 8353.35 Process data cycle time

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Range of values: 0 to 100000

Cycle time of the process data data source.

1.40 8354 Fixed setpoints

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

1.40.1 8354.1 Velocity 11

Factory setting: 1500000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Velocity 1, parameter set 1

1.40.2 8354.2 Velocity 12

Factory setting: 7500000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Velocity 2, parameter set 1

1.40.3 8354.3 Velocity 13

Factory setting: 10000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Velocity 3, parameter set 1

1.40.4 8354.4 Velocity 14

Factory setting: 15000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Velocity 4, parameter set 1

1.40.5 8354.5 Velocity 15

Factory setting: 20000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Velocity 5, parameter set 1

1.40.6 8354.6 Velocity 16

Factory setting: 30000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Velocity 6, parameter set 1

1.40.7 8354.20 Operating mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Operating mode

1.40.8 8354.21 Select fixed velocity setpoint

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

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

1.40.9 8354.23. Select direction of rotation

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Positive
- 1= Negative

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

1.40.10 8354.24. Select ramp set

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ramp set 2

This parameter indicates the active ramp set.

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

1.40.11 8354.25 Analog input

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No source**
- 1= Analog input AI2
- 2= Analog input AI3

This parameter is used to select the analog input to be used.

- No source: No analog input is enabled.
- Analog input AI2: Analog input AI2 (option card CIO11AA) is enabled.
- Analog input AI3: Analog input AI3 (option card CIO11AA) is enabled.

1.40.12 8354.30 Determined velocity setpoint

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Currently active velocity setpoint.

1.40.13 8354.31 Determined acceleration setpoint

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Currently active acceleration setpoint.

1.40.14 8354.32 Determined deceleration setpoint

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Currently active deceleration setpoint.

1.40.15 8354.40 Acceleration 11

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Acceleration when changing the velocity in FCB 05. Ramp 11: acceleration value positive, parameter set 1.

1.40.16 8354.41 Acceleration 21

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Acceleration when changing the velocity in FCB 05. Ramp 21: acceleration value positive, parameter set 2.

1.40.17 8354.42 Acceleration 12

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Acceleration when changing the velocity in FCB 05. Ramp 12: acceleration value negative, parameter set 1.

1.40.18 8354.43 Acceleration 22

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Acceleration when changing the velocity in FCB 05. Ramp 22: acceleration value negative, parameter set 2.

1.40.19 8354.50 Deceleration 11

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Deceleration when changing the velocity in FCB 05. Ramp 11: deceleration value positive, parameter set 1.

1.40.20 8354.51 Deceleration 21

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Deceleration when changing the velocity in FCB 05. Ramp 21: deceleration value positive, parameter set 1.

1.40.21 8354.52 Deceleration 12

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Deceleration when changing the velocity in FCB 05. Ramp 12: deceleration value negative, parameter set 1.

1.40.22 8354.53 Deceleration 22

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Deceleration when changing the velocity in FCB 05. Ramp 22: deceleration value negative, parameter set 1.

1.41 8355 Brake 1

Brake 1

1.41.1 8355.1 Brake ID

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.41.2 8355.2 Connection type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= None
- **1= With brake rectifier**
- 2= Direct supply

This parameter specifies how the brake is connected.

– None: No brake connected.

– With brake rectifier: The brake is connected via brake rectifier, which is controlled using brake output DB00 at X10.1 and X10.2.

– Direct supply: The brake is connected via 24 V brake output DB00 at X10.1 and X10.2.

1.41.3 8355.3 Brake release time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

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

1.41.4 8355.4 Brake application time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

This parameter is used to specify how long the mechanical brake needs to apply. Setting this parameter correctly will prevent the drive from sagging.

1.41.5 8355.5 Holding torque

Factory setting: 0

Unit: Nm

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

This parameter describes the holding torque of the brake.

1.42 8356 Brake 2

Brake 2

1.42.1 8356.1 Brake ID

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.42.2 8356.2 Connection type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= None
- **1= With brake rectifier**
- 2= Direct supply

This parameter specifies how the brake is connected.

– None: No brake connected.

– With brake rectifier: The brake is connected via brake rectifier, which is controlled using brake output DB00 at X10.1 and X10.2.

– Direct supply: The brake is connected via 24 V brake output DB00 at X10.1 and X10.2.

1.42.3 8356.3 Brake release time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

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

1.42.4 8356.4 Brake application time

Factory setting: 200

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

This parameter is used to specify how long the mechanical brake needs to apply. Setting this parameter correctly will prevent the drive from sagging.

1.42.5 8356.5 Holding torque

Factory setting: 0

Unit: Nm

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

This parameter describes the holding torque of the brake.

1.43 8357 Limit values 1

Limit values 1

1.43.1 8357.10 Application limit – positive velocity

Factory setting: 360000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Maximum positive velocity permitted for driving the system. Limits the maximum speed to this value.

1.43.2 8357.11 Application limit – negative velocity

Factory setting: 3600000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 3600000000

Maximum negative velocity permitted for driving the system. Limits the maximum speed to this value.

1.43.3 8357.12 Application limit – acceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Maximum permitted value for system acceleration.

1.43.4 8357.13 Application limit – deceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Maximum permitted value for decelerating the system.

1.43.5 8357.14 Application limit – jerk time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

The jerk time indicates the duration for producing and reducing torque or acceleration for reaching the actual setpoint. The jerk time takes effect in torque control (FCB 07), speed control (FCB 05), and position control (FCB 09) as well as in manual mode. The positioning process extends by twice the set jerk time.

1.43.6 8357.15 Application limit – torque

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Maximum permitted torque applied to the system.

1.43.7 8357.16 Application limit – apparent output current

Factory setting: 2000000

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000000

This parameter limits the output voltage of the inverter to the specified value.

1.43.8 8357.17 Voltage limit

Factory setting: 400000

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1000000

This parameter limits the phase-to-phase output voltage of the inverter to the specified value.

1.43.9 8357.20 Emergency stop deceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.43.10 8357.30 Modulo min.

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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 min." must be set to the value "0". The parameter "Modulo max." must be set to the value "1000000".

1.43.11 8357.31 Modulo max.

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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.

1.44 8358 Limit values 2

Limit values 2

1.44.1 8358.10 Application limit – positive velocity

Factory setting: 360000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Maximum positive velocity permitted for driving the system. Limits the maximum speed to this value.

1.44.2 8358.11 Application limit – negative velocity

Factory setting: 360000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Maximum negative velocity permitted for driving the system. Limits the maximum speed to this value.

1.44.3 8358.12 Application limit – acceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Maximum permitted value for system acceleration.

1.44.4 8358.13 Application limit – deceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Maximum permitted value for decelerating the system.

1.44.5 8358.14 Application limit – jerk time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

The jerk time indicates the duration for producing and reducing torque or acceleration for reaching the actual setpoint. The jerk time takes effect in torque control (FCB 07), speed control (FCB 05), and position control (FCB 09) as well as in manual mode. The positioning process extends by twice the set jerk time.

1.44.6 8358.15 Application limit – torque

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Maximum permitted torque applied to the system.

1.44.7 8358.16 Application limit – apparent output current

Factory setting: 2000000

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000000

This parameter limits the output voltage of the inverter to the specified value.

1.44.8 8358.17 Voltage limit

Factory setting: 400000

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1000000

This parameter limits the phase-to-phase output voltage of the inverter to the specified value.

1.44.9 8358.20 Emergency stop deceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.44.10 8358.30 Modulo min.

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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 min." must be set to the value "0". The parameter "Modulo max." must be set to the value "1000000".

1.44.11 8358.31 Modulo max.

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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.

1.45 8360 Motor data 1

Motor data 1

1.45.1 8360.1 Calculate electrical startup

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

[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.

1.45.2 8360.2 Number of identical motors

Factory setting: 1

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 1 to 100

Number of identical motors in parallel connection.

1.45.3 8360.3 Nominal voltage of connected motor

Factory setting: 0

Unit: V

Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: -3.402823E+38 to Float32Max
 Nominal voltage of the connected motor.
 The value is set before startup.

1.45.4 8360.4 Nominal frequency of connected motor

Factory setting: 0
 Unit: Hz
 Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: -3.402823E+38 to Float32Max
 Nominal frequency of the connected motor.

1.45.5 8360.5 Version number

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 4294967295
 Version number

1.45.6 8360.6 Motor type

Factory setting:
 Data type: Enum
 Data length: 1
 Range of values:

- **0= Asynchronous motor**
- 1= Synchronous motor

 Motor type

1.45.7 8360.7 Number of pole pairs

Factory setting: 1
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 1 to 500
 Number of pole pairs

1.45.8 8360.8 Nominal speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 36000
Nominal speed

1.45.9 8360.9 Maximum speed at motor shaft

Factory setting: 100
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Range of values: 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.

1.45.10 8360.10 Nominal torque matching nominal current

Factory setting: 0
Unit: Nm
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 50000
Nominal torque matching the nominal current

1.45.11 8360.11 Maximum torque at motor shaft

Factory setting: 0
Unit: Nm
Data type: Float32
Data length: 1
Resolution: -
Range of values: 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.

1.45.12 8360.12 Nominal current matching nominal torque

Factory setting: 0
Unit: A
Data type: Float32

Data length: 1
Resolution: -
Range of values: 0 to 10000
Nominal current matching the nominal torque (line current, rms)

1.45.13 8360.13 Maximum current

Factory setting: 0
Unit: A
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 10000
Maximum current (line current, rms)

1.45.14 8360.14 Nominal voltage

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

1.45.15 8360.15 Nominal frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 20000
Nominal frequency

1.45.16 8360.16 Stator resistance at 20 °C

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

1.45.17 8360.17 Rotor resistance at 20 °C

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

1.45.18 8360.18 Nominal stator temperature

Factory setting: 0
Unit: °C
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Stator temperature in stationary operation under nominal conditions

1.45.19 8360.46 Encoder offset

Factory setting: 0
Unit: °
Data type: Float32
Data length: 1
Resolution: -
Range of values: -360 to 360
Encoder offset

1.45.20 8360.47 Inertia of motor and brake

Factory setting: 0
Unit: kgm²
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to Float32Max
Inertia of motor and brake

1.45.21 8360.48 Reference torque for relative information

Factory setting: 0
Unit: Nm
Data type: Float32
Data length: 1

Resolution: -

Range of values: 0 to 50000

Reference torque for relative information

1.46 8361 Motor data 2

Motor data 2

1.46.1 8361.1 Calculate electrical startup

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

Calculate electrical startup

1.46.2 8361.2 Number of identical motors

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 1 to 100

Number of identical motors

1.46.3 8361.3 Nominal voltage of connected motor

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Nominal voltage of the connected motor.

1.46.4 8361.4 Nominal frequency of connected motor

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Nominal frequency of the connected motor.

1.46.5 8361.5 Version number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version number

1.46.6 8361.6 Motor type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Asynchronous motor**
- 1= Synchronous motor

Motor type

1.46.7 8361.7 Number of pole pairs

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 1 to 500

Number of pole pairs

1.46.8 8361.8 Nominal speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 36000

Nominal speed

1.46.9 8361.9 Maximum speed at motor shaft

Factory setting: 100

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 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.

1.46.10 8361.10 Nominal torque matching nominal current

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 50000

Nominal torque matching the nominal current

1.46.11 8361.11 Maximum torque at motor shaft

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 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.

1.46.12 8361.12 Nominal current matching nominal torque

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 10000

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

1.46.13 8361.13 Maximum current

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 10000

Maximum current (line current, rms)

1.46.14 8361.14 Nominal voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 2000

Nominal voltage (line voltage, rms)

1.46.15 8361.15 Nominal frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 20000

Nominal frequency

1.46.16 8361.16 Stator resistance at 20 °C

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 1000

Stator resistance at 20 °C

1.46.17 8361.17 Rotor resistance at 20 °C

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 1000

Rotor resistance at 20 °C

1.46.18 8361.18 Nominal stator temperature

Factory setting: 0

Unit: °C

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Nominal stator temperature

1.46.19 8361.46 Encoder offset

Factory setting: 0

Unit: °

Data type: Float32

Data length: 1

Resolution: -

Range of values: -360 to 360

Encoder offset

1.46.20 8361.47 Inertia of motor and brake

Factory setting: 0

Unit: kgm²

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to Float32Max

Inertia of motor and brake

1.46.21 8361.48 Reference torque for relative information

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 50000

Reference torque for relative information

1.47 8362 Control mode 1

Control mode 1

1.47.1 8362.1 Control mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Control mode

1.47.2 8362.2 Direction of rotation reversal

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Direction of rotation reversal

1.47.3 8362.3 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

PWM frequency

1.47.4 8362.4 Limitation strategy

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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.

1.48 8363 Control mode 2

Control mode 2

1.48.1 8363.1 Control mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Control mode

1.48.2 8363.2 Direction of rotation reversal

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Direction of rotation reversal

1.48.3 8363.3 PWM frequency

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

PWM frequency

1.48.4 8363.4 Limitation strategy

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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.

1.49 8364 Control mode process values

Control mode process values

1.49.1 8364.7 Possible operating modes

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

Possible operating modes

1.49.2 8364.13 Status flag limits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= User current limit reached
- 1= Thermal current limit reached
- 2= Explosion protection current limit
- 3= Current limit reached by control mode
- 8= User torque limit reached
- 16= Speed monitoring motor mode – active
- 17= Speed monitoring generator mode – active

Status flag limits

1.49.3 8364.21 Position setpoint in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint of the position in system units

1.49.4 8364.22 Position setpoint in user units

Factory setting: 0
Unit: 1/65536 rev user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Setpoint of the position in user units

1.49.5 8364.25 Actual position in system units

Factory setting: 0
Unit: 1/65536 rev
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Actual position in system units.

1.49.6 8364.26 Actual position in user units

Factory setting: 0
Unit: 1/65536 rev user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Actual position in user units

1.49.7 8364.27 Actual position in user units – modulo

Factory setting: 0
Unit: 1/65536 rev user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
The current position is displayed in user units taking account of modulo scaling.

1.49.8 8364.28 Lag error in system units

Factory setting: 0
Unit: 1/65536 rev
Data type: Int32
Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Lag error in system units

1.49.9 8364.29 Lag error in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Lag error in user units

1.49.10 8364.31 Motor position in system units

Factory setting: 0

Unit: 1/(2³²) rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Motor position in system units

1.49.11 8364.43 Speed controller setpoint speed in system units

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint speed of the speed controller in system units

1.49.12 8364.43 Speed controller setpoint speed in user units

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint speed of the speed controller in user units

1.49.13 8364.45 Actual speed in system units

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Actual speed in system units

1.49.14 8364.44 Actual speed in user units

Factory setting: 0
Unit: 1E-4 /min user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Actual speed in user units

1.49.15 8364.47 Filtered actual speed in system units

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Filtered actual speed in system units

1.49.16 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
Range of values: -2147483648 to 2147483647
Actual speed filtered, user units

1.49.17 8364.61 Stator frequency

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

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator frequency

1.49.18 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

Range of values: -2147483648 to 2147483647

Total acceleration in user units

1.49.19 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

Range of values: -2147483648 to 2147483647

Relative, limited setpoint torque in system units

1.49.20 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

Range of values: -2147483648 to 2147483647

Relative actual torque in system units

1.49.21 8364.95 Actual torque in communication units

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Actual torque in communication units

1.49.22 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
Range of values: -2147483648 to 2147483647
Relative minimum torque in system units

1.49.23 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
Range of values: -2147483648 to 2147483647
Relative maximum torque in system units

1.49.24 8364.117 Relative torque-generating current

Factory setting: 0
Unit: 1E-03% nominal device current
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Actual current, torque-generating component, instantaneous value, phase value in star connection, with reference to nominal inverter current.

1.49.25 8364.118 Absolute torque-generating current

Factory setting: 0
Unit: mA
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Actual current, torque-generating component, absolute, instantaneous value, phase value in star connection.

1.49.26 8364.119 Relative field-generating current

Factory setting: 0
Unit: 1E-03% nominal device current
Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.27 8364.120 Absolute field-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.28 8364.127 Relative apparent current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Apparent current, relative

1.49.29 8364.128 Absolute apparent current – rms value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Apparent current, absolute, rms value

1.49.30 8364.151 UqRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.31 8364.152 UdRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.32 8364.155 UaRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.33 8364.156 UbRef

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.34 8364.157 Ua

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.35 8364.158 Ub

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.49.36 8364.159 Absolute value of the setpoint voltage, rms value

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint voltage, value, absolute, rms value

1.49.37 8364.160 DC link voltage, instantaneous value

Factory setting: 0

Unit: mV

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

DC link voltage, instantaneous value

1.49.38 8364.181 PsiSRef

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint stator flux, value, instantaneous value

1.49.39 8364.182 PsiRRef

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1
Range of values: -2147483648 to 2147483647
Setpoint rotor flux, value, instantaneous value

1.49.40 8364.183 PsiSMod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Stator flux U-model, value, instantaneous value

1.49.41 8364.184 PsiRMod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Rotor flux U-model, value, instantaneous value

1.49.42 8364.185 PsiSaUmod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Stator flux U-model, a-component

1.49.43 8364.186 PsiSbUmod

Factory setting: 0
Unit: μ Vs
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Stator flux U-model, b-component

1.49.44 8364.187 PsiRaUmod

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux U-model, a-component

1.49.45 8364.188 PsiRbUmod

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux U-model, b-component

1.49.46 8364.189 PsiRdlmod

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux I-model, d-component

1.49.47 8364.190 PsiRqlmod

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux I-model, q-component

1.49.48 8364.211 Apparent motor power

Factory setting: 0

Unit: VA

Data type: Int32

Data length: 1

Resolution: 1
Range of values: -2147483648 to 2147483647
Apparent motor power

1.49.49 8364.212 Electrical effective motor power

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

1.49.50 8364.213 Reactive motor power

Factory setting: 0
Unit: VA
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Reactive motor power

1.49.51 8364.221 PWM frequency

Factory setting:
Data type: Enum
Data length: 1
Range of values:

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

PWM frequency

1.49.52 8364.231 Position encoder dead time

Factory setting: 0
Unit: ns
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Position encoder dead time

1.49.53 8364.232 Motor encoder dead time

Factory setting: 0

Unit: ns

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Motor encoder dead time

1.50 8365 Fault manager

Fault manager

1.50.1 8365.1 Fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Currently pending fault:

– Bits 8 to 15: Main fault

– Bits 0 to 7: Subfault

1.50.2 8365.2 Developer code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

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

1.50.3 8365.3 Subcomponent fault code

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Fault code of the subcomponent consisting of main fault in bits 8 to 15 and subfault in bits 0 to 7.

Bits 16 to 31 are always 0, which means the fault code can be sent in a 16-bit process data word.

1.50.4 8365.4 Subcomponent developer code

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Developer code of the subcomponent

1.50.5 8365.5 Manual fault reset

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No fault reset**
- 1= Standard
- 2= With parameter set acceptance
- None: No reset is performed
- Standard: The fault is acknowledged

– With parameter acceptance: If the hardware configuration has changed (for example if an option card was removed), the device can be acknowledged and its operation can be continued. Options that can no longer be accessed are ignored.

1.50.6 8365.6 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

Control bits

1.50.7 8365.7 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

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

Status bits of the currently active fault.

1.51 8366 Process data

Process data

1.51.1 8366.1 Stop?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to control the process data communication.

- Yes: Process data communication performed.
- No: No process data communication performed.

1.51.2 8366.2 Basic cycle

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 1= 500 µs
- **0= 1 ms**
- 2= 1 ms PLC

Determines the processing cycle for process data.

Note that the setting "1 ms PLC" is only permitted when using a PLC of SEW-EURODRIVE. In this case, the data flexibilization layer cannot be used.

1.51.3 8366.3 Actual cycle

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 1= 500 µs
- **0= 1 ms**
- 2= 1 ms PLC

Indicates the current cycle time.

1.51.4 8366.4 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= None**
- **3= EtherCAT®/SBusPLUS**

Selection of the process data source.

1.51.5 8366.5 Use sync?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies whether the synchronization pulse of the higher-level controller is to be used.

1.51.6 8366.6 Controller setpoint cycle

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Range of values: 500 to 20000

Setting of the cycle time for setpoint input from the controller.

1.51.7 8366.7 Period duration of the sync signal

Factory setting: 0

Unit: μ s

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Determined period duration of the synchronization signal.

1.51.8 8366.8 Substitute values for interpolated setpoints

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

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

– OFF: No values are interpolated

– ON: Values are interpolated

1.51.9 8366.9 Substitute value counter

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Diagnostic counter for substitute values calculated since the last restart.

1.52 8367 Process output data

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

1.52.1 8367.1 Update

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to specify whether the process data are retrieved from the input buffer of the process output data.

– ON: Data is updated.

– OFF: Data is not updated.

1.52.2 8367.2 Data word count

Factory setting: 16

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 16

This parameter defines the number of data words in the process data communication.

1.52.3 8367.4 Data valid?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

Indicates whether valid process data were received at least once.

– Yes: Valid process data has been received at least once.

– No: No valid process data has been received yet.

1.52.4 8367.5 Received packets

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

Number of received packets.

1.52.5 8367.10 - 8367.25 Array size 16 data words

Factory setting:

Data type: Bit field (array)

Data length: 16

Range of values:

- 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

Indicates the current process data. If update is disabled (index 8367.1), the values can be entered manually to implement a kind of bus monitor.

1.53 8368 PI data

PI data

1.53.1 8368.1 Update

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to specify whether the process data are written from the output buffer of the process input data.

– ON: Data is written.

– OFF: Data is not written.

1.53.2 8368.2 Data word count

Factory setting: 16

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 16

This parameter defines the number of data words in the process data communication.

1.53.3 8368.3 Data sources

Factory setting:

- 8364.46 High word "actual speed in user unit"
- 8364.46 Low word "actual speed in user unit"
- 0.0 Saturated "no function"

Data type: Parameter word pointer (DataArray)

Data length: 16

Range of values:

- 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 units modulo
- 8364.45 Actual speed in system units
- 8364.44 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
- 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 option

Specifies what data is written on which data word for all 16 data words (offset 0 – PD1, offset 1 – PD2 to offset 15 – PD16). The format used is also specified.

– 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.

1.53.4 8368.4 Data words

Factory setting: 0

Unit:

Data type: Int32 (DataArray)

Data length: 16

Resolution: 1

Range of values: 0 to 65535

Contains the values of the data sources set in 8368.3. (offset 0 – PD1, offset 1 – PD2 to offset 15 – PD16)

1.54 8370 Status word 1

Status word 1

1.54.1 8370.1 Actual value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

This parameter indicates the actual value of status word 1.

1.54.2 8370.2 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No source
- **1= System**
- 2= Local status word

This parameter can be used to choose whether status word 1 is written by the system or whether the local value (8370.3) is to be used.

1.54.3 8370.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter can be used to specify a local value for status word 1.

1.54.4 8370.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to choose whether the first 6 bits of status word 1 are to be assigned the number of the active FCB or whether they are to be programmed using a selection list.

– 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 – 5 are assigned to the FCB number, the other bits are programmable.

1.54.5 8370.10 Functions of the bits

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 parameter set"
- 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

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Current reference" signal – active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8335.1 Bit 0 "DB00"
- 8335.1 Bit 1 "DO00"
- 8335.1 Bit 2 "DO01"
- 8335.1 Bit 3 "DO02"
- 8335.1 Bit 4 "DO03"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 applied"
- 8437.2 Bit 1 "Brake 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"
- 8581.1 Bit 0 "DO10"
- 8581.1 Bit 1 "DO11"
- 8581.1 Bit 2 "DO12"
- 8581.1 Bit 3 "DO13"

This parameter can be used to set the function of the individual bits of the status word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.55 8371 Status word 2

Status word 2

1.55.1 8371.1 Actual value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

This parameter indicates the actual value of status word 2.

1.55.2 8371.2 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No source**
- 1= System
- 2= Local status word

This parameter can be used to choose whether status word 2 is written by the system or whether the local value (8370.3) is to be used.

1.55.3 8371.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter can be used to specify a local value for status word 2.

1.55.4 8371.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to choose whether the first 6 bits of status word 2 are to be assigned the number of the active FCB or whether they are to be programmed using a selection list.

- 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.

1.55.5 8371.10 Bit functions

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Current reference" signal – active"
- 8327.1 Bit 0 "Setpoint limit with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limit with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limit with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limit with application limit – torque"
- 8327.1 Bit 5 "Setpoint limit with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8335.1 Bit 0 "DB00"
- 8335.1 Bit 1 "DO00"
- 8335.1 Bit 2 "DO01"
- 8335.1 Bit 3 "DO02"
- 8335.1 Bit 4 "DO03"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 applied"
- 8437.2 Bit 1 "Brake 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"
- 8581.1 Bit 0 "DO10"
- 8581.1 Bit 1 "DO11"
- 8581.1 Bit 2 "DO12"
- 8581.1 Bit 3 "DO13"

This parameter can be used to set the function of the individual bits of the status word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.56 8372 Status word 3

Status word 3

1.56.1 8372.1 Actual value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

This parameter indicates the actual value of status word 3.

1.56.2 8372.2 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No source
- **1= System**
- 2= Local status word

This parameter can be used to choose whether status word 3 is written by the system or whether the local value (8370.3) is to be used.

1.56.3 8372.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter can be used to specify a local value for status word 3.

1.56.4 8372.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to choose whether the first 6 bits of status word 3 are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

– 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.

1.56.5 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

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Current reference" signal – active"
- 8327.1 Bit 0 "Setpoint limit with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limit with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limit with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limit with application limit – torque"
- 8327.1 Bit 5 "Setpoint limit with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8335.1 Bit 0 "DB00"
- 8335.1 Bit 1 "DO00"
- 8335.1 Bit 2 "DO01"
- 8335.1 Bit 3 "DO02"
- 8335.1 Bit 4 "DO03"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 applied"
- 8437.2 Bit 1 "Brake 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"
- 8581.1 Bit 0 "DO10"
- 8581.1 Bit 1 "DO11"
- 8581.1 Bit 2 "DO12"
- 8581.1 Bit 3 "DO13"

This parameter can be used to set the function of the individual bits of the status word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.57 8373 Control word 1

Control word 1

1.57.1 8373.1 Actual value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter indicates the actual value of control word 1.

1.57.2 8373.2 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This index can be used to choose whether control word 1 is written by a certain PO data, or whether the local value (8373.3) is to be used.

1.57.3 8373.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter can be used to specify a local value for control word 1.

1.57.4 8373.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to choose whether the first 6 bits of control word 1 are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

- Bits 0 to 15 programmable: All 16 bits of the control 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.

1.57.5 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 parameter set from process data"
- 8322.3 Bit 1 "Select parameter set 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

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 0 "Activate standby mode using control word"

This parameter can be used to set the interpretation of the individual bits of the control word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.58 8374 Control word 2

Control word 2

1.58.1 8374.1 Actual value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter indicates the actual value of control word 2.

1.58.2 8374.2 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This index can be used to choose whether control word 2 is written by a certain PO data, or whether the local value (8373.3) is to be used.

1.58.3 8374.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter can be used to specify a local value for control word 2.

1.58.4 8374.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to choose whether the first 6 bits of control word 1 are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

– Bits 0 to 15 programmable: All 16 bits of the control 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.

1.58.5 8374.10 Bit functions

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"

- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 0 "Activate standby mode using control word"

This parameter can be used to set the interpretation of the individual bits of the control word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.59 8375 Control word 3

Control word 3

1.59.1 8375.1 Actual value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter indicates the actual value of control word 3.

1.59.2 8375.2 Source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This index can be used to choose whether control word 3 is written by a certain PO data, or whether the local value (8373.3) is to be used.

1.59.3 8375.3 Local value

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

This parameter can be used to specify a local value for control word 3.

1.59.4 8375.4 Layout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to choose whether the first 6 bits of control word 1 are to be assigned the number of the active FCB, or whether they are to be programmed using a selection list.

– Bits 0 to 15 programmable: All 16 bits of the control 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.

1.59.5 8375.10 Bit functions

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer (DataArray)

Data length: 16

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 0 "Activate standby mode using control word"

This parameter can be used to set the interpretation of the individual bits of the control word (via offsets: offset 0 – bit 0 to offset 15 – bit 15).

1.60 8376 Setpoint buffer

Setpoint buffer

1.60.1 8376.1 Position – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31
- 926086= Analog input AI2
- 2236806= Analog input AI3
- 5316998= Sum of AI2 + AI3

This parameter specifies the source of the position setpoint for the inverter.

1.60.2 8376.2 Position – local value 1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setting value: Position setpoint for FCB 09 and FCB 10, parameter set 1.

1.60.3 8376.2 Position – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

Specifies the source data format. The PO data words are data sources with 16-bit word width 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.

1.60.4 8376.4 Position – actual value

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Positioning setpoint for the FCB 09 and FCB 10

1.60.5 8376.5 Position – system value

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Position system value

1.60.6 8376.11 Velocity – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **1974434= Fixed setpoints – velocity**
- 663727= PO data – word 0

- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26

- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31
- 926086= Analog input AI2
- 2236806= Analog input AI3
- 5316998= Sum of AI2 + AI3

This parameter specifies the source of the velocity setpoint for the inverter.

1.60.7 8376.12 Velocity – local value 1

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Setting value: Velocity setpoint for FCB 05 and FCB 06, parameter set 1.

1.60.8 8376.13 Velocity – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

Specifies the source data format. The PO data words are data sources with 16-bit word width 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.

1.60.9 8376.13 Velocity – actual value

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Speed setpoint for the FCB 05 and FCB 06.

1.60.10 8376.15 Velocity – system value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Velocity system value

1.60.11 8376.21 Torque – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31
- 926086= Analog input AI2
- 2236806= Analog input AI3
- 5316998= Sum of AI2 + AI3

This parameter specifies the source of the velocity setpoint for the inverter.

1.60.12 8376.22 Torque – local value 1

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Setting value: Torque setpoint for FCB 07 and FCB 08, parameter set 1.

1.60.13 8376.22 Torque – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Torque setpoint for the FCB 07 and FCB 08.

1.60.14 8376.31 Acceleration precontrol – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter is used to set the source of the acceleration setpoint for the inverter.

1.60.15 8376.32 Acceleration precontrol – local value 1

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setting value: Setpoint for acceleration precontrol, parameter set 1.

1.60.16 8376.32 Acceleration precontrol – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.60.17 8376.33 Acceleration precontrol – actual value

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Acceleration setpoint.

1.60.18 8376.35 Acceleration precontrol – system value

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Acceleration precontrol – system value

1.60.19 8376.41 Mass moment of inertia – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

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

This parameter is used to specify the source of the mass moment of inertia setpoint for the inverter. The parameter cannot be used for constant inertia ratios.

1.60.20 8376.42 Mass moment of inertia – local value 1

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setting value: Setpoint for the mass moment of inertia, parameter set 1.

1.60.21 8376.43 Mass moment of inertia – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.60.22 8376.44 Mass moment of inertia – actual value

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Setpoint for the mass moment of inertia.

1.60.23 8376.51 Torque precontrol – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Local setpoint**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2

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

This parameter is used to set the source of the torque precontrol setpoint for the inverter.

1.60.24 8376.52 Torque precontrol – local value 1

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setting value: Setpoint for torque precontrol, parameter set 1.

1.60.25 8376.52 Torque precontrol – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Torque precontrol.

1.60.26 8376.61 Correcting value of external position controller – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter is used to set the source of the correcting value for an external position controller for the inverter.

1.60.27 8376.62 Correcting value of external position controller – local value 1

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Setting value: Correcting value for external velocity. Is only needed in the higher-level controller for FCB 06 for operation with a position controller.

1.60.28 8376.62 Correcting value of external position controller – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 2= 32 bit – little endian
- 3= 32 bit – system units

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.60.29 8376.63 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

Range of values: -2147483648 to 2147483647

Read value: Correcting value for external velocity. Is only needed in the higher-level controller for FCB 06 for operation with a position controller.

1.60.30 8376.65 Correcting value of external position controller – system value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Correcting value of external position controller – system value

1.61 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 velocity positive/negative and jerk time.
- In "torque control" mode, only the jerk time is valid.

1.61.1 8377 Maximum positive velocity – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **663719= Application limit – positive velocity**
- 663727= PO data – word 0
- 729263= PO data – word 1

- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27

- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

Maximum positive velocity source

1.61.2 8377.2 Maximum positive velocity – local value 1

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Maximum positive velocity – local value, parameter set 1.

1.61.3 8377.3 Maximum positive velocity – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.61.4 8377.4 Maximum positive velocity – actual value

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum positive velocity – actual value.

1.61.5 8377.4 Maximum positive velocity – system value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum positive velocity – system value.

1.61.6 8377.5 Maximum negative velocity – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **729255= Application limit – negative velocity**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14

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

Maximum negative velocity – source

1.61.7 8377.12 Maximum negative velocity – local value 1

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Maximum negative velocity – local value, parameter set 1.

1.61.8 8377.13 Maximum negative velocity – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.61.9 8377.14 Maximum negative velocity – actual value

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum negative velocity – actual value.

1.61.10 8377.15 Maximum negative velocity – system value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum negative velocity – system value.

1.61.11 8377.21 Maximum acceleration – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **794791= Application limit – acceleration**
- 2039970 = Fixed setpoints – acceleration
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15

- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter specifies from where the inverter obtains its values for maximum acceleration.

1.61.12 8377.22 Maximum acceleration – local value 1

Factory setting: 200000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum acceleration – local value, parameter set 1.

1.61.13 8377.23 Maximum acceleration – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.61.14 8377.24 Maximum acceleration – actual value

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum acceleration – actual value.

1.61.15 8377.25 Maximum acceleration – system value

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum acceleration – system value.

1.61.16 8377.31 Maximum deceleration – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **860327= Application limit – deceleration**
- 2105506= Fixed setpoints – deceleration
- 663727= PO data – word 0

- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26

- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter specifies from where the inverter obtains its value for maximum deceleration.

1.61.17 8377.32 Maximum deceleration – local value 1

Factory setting: 200000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum deceleration – local value, parameter set 1.

1.61.18 8377.33 Maximum deceleration – PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 16 bits**
- 1= 32 bit – big endian
- 2= 32 bit – little endian
- 3= 32 bit – system units

This parameter specifies the data format of the source. The PO data words are data sources with 16-bit word width 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.

1.61.19 8377.34 Maximum deceleration – actual value

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum deceleration – actual value.

1.61.20 8377.35 Maximum deceleration – system value

Factory setting: 0

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Maximum deceleration – system value.

1.61.21 8377.41 Jerk time – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **925863= Application limit – jerk time**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12

- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter specifies from where the inverter obtains its values for the jerk time.

1.61.22 8377.42 Jerk time – local value 1

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

Jerk time setting value, parameter set 1.

1.61.23 8377.44 Jerk time – actual value

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value of the valid jerk time.

1.61.24 8377.51 Maximum torque Q1 – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **991399= Application limit – torque**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21

- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter is used to specify the setpoint source of the maximum torque Q1 for the inverter.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.25 8377.52 Maximum torque Q1 – local value 1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Setting value for maximum torque in the first quadrant (speed positive, torque positive), parameter set 1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.26 8377.54 Maximum torque Q1 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Current maximum torque Q1.

The maximum torque Q1 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.27 8377.61 Maximum torque Q2 – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **991399 = Application limit – torque**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18

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

This parameter is used to specify from where the inverter obtains its value for the maximum torque Q2.

The maximum torque Q2 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.28 8377.62 Maximum torque Q2 – local value 1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Setting value for maximum torque in the second quadrant (speed positive, torque positive), parameter set 1.

The maximum torque Q2 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.29 8377.64 Maximum torque Q2 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Current maximum torque Q2.

The maximum torque Q2 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.30 8377.71 Maximum torque Q3 – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **991399 = Application limit – torque**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11
- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15

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

This parameter is used to specify from where the inverter obtains its value for the maximum torque Q3.

The maximum torque Q3 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.31 8377.72 Maximum torque Q3 – local value 1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Setting value for maximum torque in the third quadrant (speed positive, torque positive), parameter set 1.

The maximum torque Q3 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.32 8377.72 Maximum torque Q3 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Current maximum torque Q3.

The maximum torque Q3 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.33 8377.81 Maximum torque Q4 – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Local setpoint
- **991399 = Application limit – torque**
- 663727= PO data – word 0
- 729263= PO data – word 1
- 794799= PO data – word 2
- 860335= PO data – word 3
- 925871= PO data – word 4
- 991407= PO data – word 5
- 1056943= PO data – word 6
- 1122479= PO data – word 7
- 1188015= PO data – word 8
- 1253551= PO data – word 9
- 1319087= PO data – word 10
- 1384623= PO data – word 11
- 1450159= PO data – word 12
- 1515695= PO data – word 13
- 1581231= PO data – word 14
- 1646767= PO data – word 15
- 598171= Data flexibilization layer output data 0
- 663707= Data flexibilization layer output data 1
- 729243= Data flexibilization layer output data 2
- 794779= Data flexibilization layer output data 3
- 860315= Data flexibilization layer output data 4
- 925851= Data flexibilization layer output data 5
- 991387= Data flexibilization layer output data 6
- 1056923= Data flexibilization layer output data 7
- 1122459= Data flexibilization layer output data 8
- 1187995= Data flexibilization layer output data 9
- 1253531= Data flexibilization layer output data 10
- 1319067= Data flexibilization layer output data 11

- 1384603= Data flexibilization layer output data 12
- 1450139= Data flexibilization layer output data 13
- 1515675= Data flexibilization layer output data 14
- 1581211= Data flexibilization layer output data 15
- 1646747= Data flexibilization layer output data 16
- 1712283= Data flexibilization layer output data 17
- 1777819= Data flexibilization layer output data 18
- 1843355= Data flexibilization layer output data 19
- 1908891= Data flexibilization layer output data 20
- 1974427= Data flexibilization layer output data 21
- 2039963= Data flexibilization layer output data 22
- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

This parameter is used to specify the setpoint source of the maximum torque Q4 for the inverter.

The maximum torque Q4 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.34 8377.82 Maximum torque Q4 – local value 1

Factory setting: 3000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Setting value for maximum torque in the fourth quadrant (speed positive, torque positive), parameter set 1.

The maximum torque Q4 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.35 8377.84 Maximum torque Q4 – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Read value: Current maximum torque Q4.

The maximum torque Q4 applies to all 4 quadrants if the operating mode "torque limit" (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.

1.61.36 8377.90 Maximum torque – mode selection

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 1-channel**
- 2= 4-channel

This parameter is used to define whether the same torque limits apply 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

1.61.37 8377.91 Maximum torque – transition mode Q1-Q2

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Center**
- 1= Motor mode
- 2= Regenerator mode

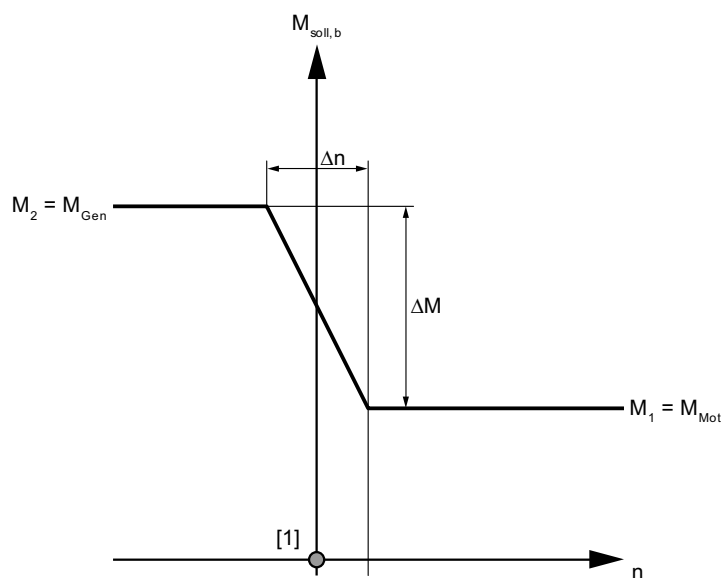
This parameter specifies the transition between the set torques in Q1 and Q2. Not affected by the setting is the width of the transition range, which depends on the difference of the torque limits and on the parameter settings for the speed controller as well as on the total mass moment of inertia according to the following equation:

$$\Delta n = \frac{(m_{\text{grenz_rel1}} - m_{\text{grenz_rel2}}) \times M_{\text{Motor_nenn}}}{2 \times \pi \times J_{\text{ges}} \times K_{\text{P_Nreg}}}$$

- Center: The torque is transitioned linearly centered from maximum torque Q1 to maximum torque Q2.

1 Parameter description

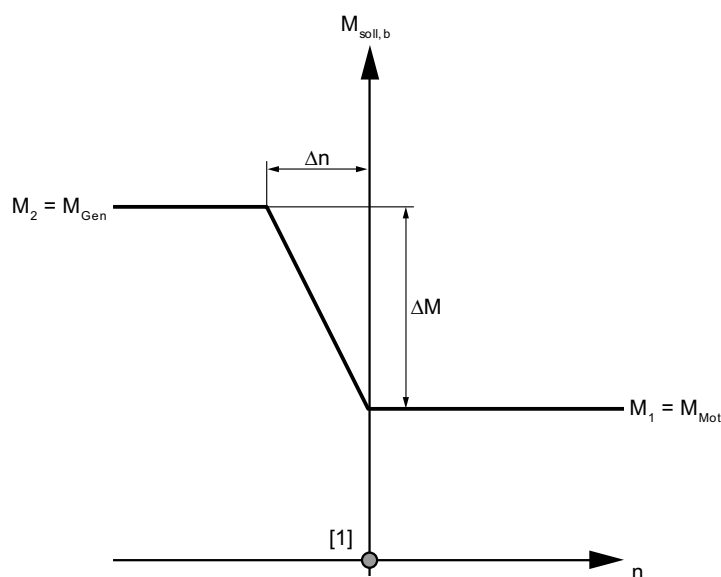
8377 Profile value buffer



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.

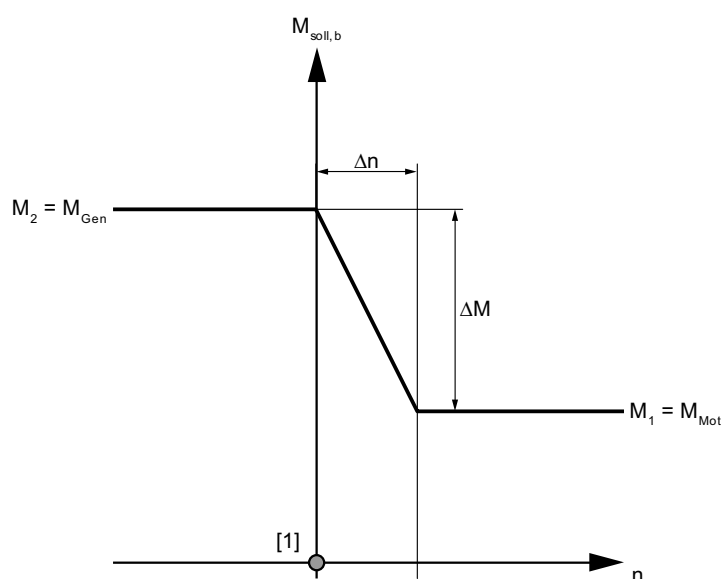


16727710731

[1] Transition speed

– Generator mode: 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.

22749454/EN – 03/2017



16727705867

[1] Transition speed

1.61.38 8377.92 Maximum torque – transition speed 1 Q1-Q2

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

This parameter specifies the speed from which the torque is changed linearly, parameter set 1.

1.61.39 8377.93 Maximum torque – transition mode Q3-Q4

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Center**
- 1= Motor mode
- 2= Regenerator mode

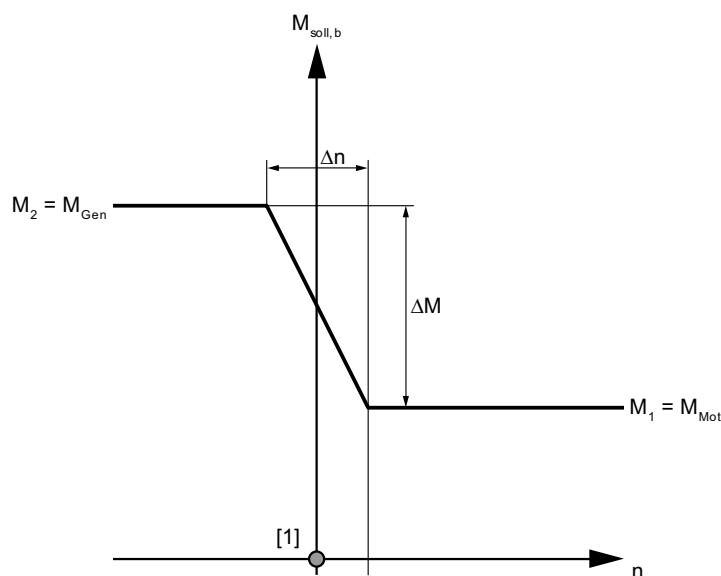
This parameter specifies the transition between the set torques in Q3 and Q4. Not affected by the setting is the width of the transition range, which depends on the difference of the torque limits and on the parameter settings for the speed controller as well as on the total mass moment of inertia according to the following equation:

$$\Delta n = \frac{(m_{\text{grenz_rel1}} - m_{\text{grenz_rel2}}) \times M_{\text{Motor_nenn}}}{2 \times \pi \times J_{\text{ges}} \times K_{P_Nreg}}$$

1 Parameter description

8377 Profile value buffer

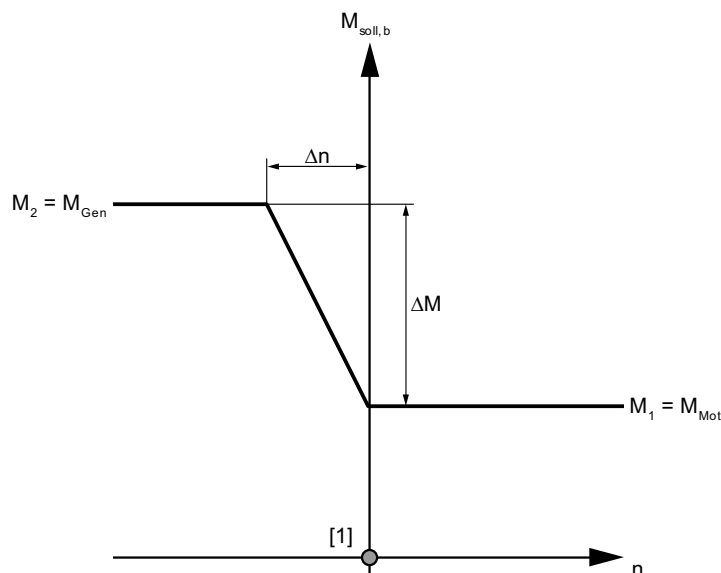
- Center: The torque is transitioned linearly centered from maximum torque Q3 to maximum torque Q4.



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.

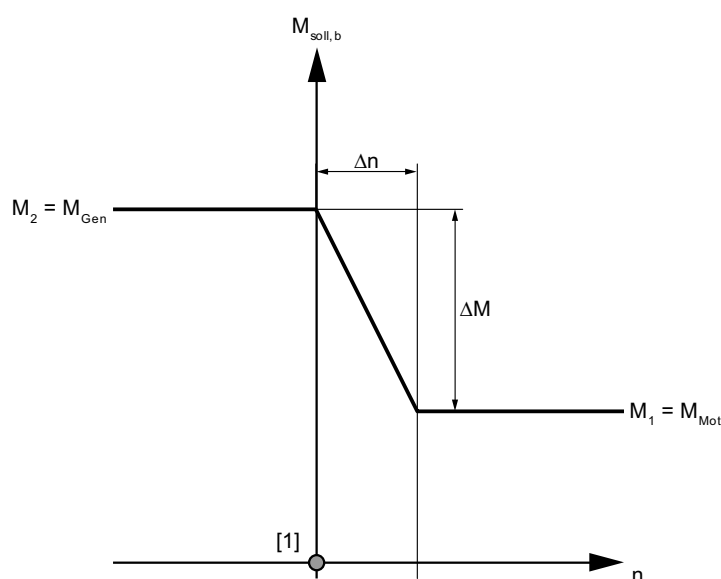


16727710731

[1] Transition speed

- Generator mode: 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.

22749454/EN – 03/2017



16727705867

[1] Transition speed

1.61.40 8377.94 Maximum torque – transition speed 1 Q3-Q4

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

This parameter specifies the speed from which the torque is changed linearly, parameter set 1.

1.61.41 8377.100 External torque limitation – source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No source**
- 1= Analog input AI2
- 2= Analog input AI3
- 4= Sum of AI2 + AI3

This parameter can be used to restrict the torque limit even further.

– No source: No further torque limitation.

– Analog input AI2: The torque limit is weighted with the relative value (value/10 V or value/20 mA) of the analog input.

– Analog input AI3: The torque limit is weighted with the relative value (value/10 V or value/20 mA) of the analog input.

- Analog input AI2: The torque limit is weighted with the total of the relative values (value/10 V or value/20 mA) of analog inputs AI2 and AI3.

1.61.42 8377.101 External torque limitation – actual value

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the current torque limit.

1.62 8378 Low-resolution encoder

Low-resolution encoder

1.62.1 8378.1 Position

Factory setting: 0

Unit: inc.

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Position (increments)

1.62.2 8378.2 Input level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Level – track A
- 1= Level – track B

Input level

1.63 8381 Encoder 1

This parameter describes the encoder at input 1.

1.63.1 8381.1 Type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No encoder**
- 1= RS422
- 2= HTL
- 3= Sin/cos
- 4= HIPERFACE®/RS485
- 5= Resolver
- 13= DDI

Setting of the encoder connected to the basic unit.

1.63.2 8381.2 Numerator factor

Factory setting: 1024

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Numerator factor

1.63.3 8381.3 Denominator factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

Denominator factor

1.63.4 8381.4 Numerator resolution factor

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Numerator resolution factor

1.63.5 8381.5 Denominator resolution factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

Resolution factor denominator.

1.63.6 8381.6 Counting direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Normal**
- 1= Inverted

Counting direction of the encoder.

– 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).

1.63.7 8381.7 Transition functions

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- **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 fault**
- **7= Evaluate internal encoder warnings**
- 8= Maximum amplitude value

Monitoring functions

1.63.8 8381.8 Configuration

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Track input resistors disabled
- 1= C track threshold
- 2= Disable absolute position monitoring

Configuration

1.63.9 8381.10 Position mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Without overflow counter
- **1= With overflow counter**
- 3= Single-turn absolute position
- 4= Linear mode

Setting of the encoder connected to the basic unit. Applies to absolute encoders only.

- Without overflow counter: Overflow is not logged, the position 0 is signaled at the next startup of the firmware.

- 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. 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.

1.63.10 8381.12 Relative position of reference point

Factory setting: 50000

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Relative position of the reference point.

1.63.11 8381.13 Startup active

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Startup active

1.63.12 8381.60 Manufacturer ID – HIPERFACE®

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Stegmann
- 1= Heidenhain
- 2= Hübner

Manufacturer ID – HIPERFACE®

1.63.13 8381.120 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the current actual position in system units.

1.63.14 8381.121 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the current position in user units. User units are defined when taking the drive train into operation.

1.63.15 8381.122 Actual position in user units – modulo

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

The current position is displayed in user units taking account of modulo scaling.

User units are defined when taking the drive train into operation.

1.63.16 8381.130 Encoder status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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 valid
- 17= Speed valid
- 18= Speed sensing disabled
- 20= Initialized
- 25= Delete referencing

Encoder status, bit coded.

1.63.17 8381.133 Motor data status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Data available
- 1= Search in progress
- 2= Reading in progress
- 3= Deleting in progress
- 4= Writing in progress
- 5= Error
- 6= Reading finished

Motor data status

1.63.18 8381.134 Encoder ID – HIPERFACE®

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Encoder ID – HIPERFACE®

1.63.19 8381.141 Firmware – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Part number of the main firmware.

1.63.20 8381.142 Firmware – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 255

Version number of the main firmware.

1.63.21 8381.143 Firmware – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Firmware – release

1.63.22 8381.170 - 8381.189 Array size 20 diagnostics

Factory setting: 0

Unit:

Data type: Int32 (array)

Data length: 20

Resolution: 1

Range of values: -2147483648 to 2147483647

Diagnostics

1.63.23 8381.192 Memory for motor data

Factory setting: 0

Unit:

Data type: Uint8 (fill level array)

Data length: 2048

Resolution: 1

Range of values: 0 to 255

Memory for motor data

1.63.24 8381.201 Zero offset

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Zero correction

1.63.25 8381.222 Position offset

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Position offset

1.64 8382 Encoder 2

This parameter describes the encoder at input 2.

1.64.1 8382.1 Type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No encoder**
- 1= RS422
- 2= HTL
- 3= Sin/cos
- 4= HIPERFACE®/RS485
- 6= SSI
- 7= EnDat
- 8= SSI combi encoder
- 10= CANopen

Type

1.64.2 8382.2 Numerator factor

Factory setting: 1024

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Numerator factor

1.64.3 8382.3 Denominator factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

Denominator factor

1.64.4 8382.4 Numerator resolution factor

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Resolution factor numerator

1.64.5 8382.5 Denominator resolution factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

Resolution factor denominator.

1.64.6 8382.6 Counting direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Normal**
- 1= Inverted

Counting direction of the encoder.

- 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).

1.64.7 8382.7 Transition functions

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- **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 fault**
- **7= Evaluate internal encoder warnings**
- 8= Maximum amplitude value

Monitoring functions

1.64.8 8382.8 Configuration

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Track input resistors disabled
- 1= C track threshold
- 2= Disable absolute position monitoring

Configuration

1.64.9 8382.10 Position mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Without overflow counter
- **1= With overflow counter**
- 3= Single-turn absolute position
- 4= Linear mode

Setting of the encoder connected to the basic unit. Applies to absolute encoders only.

- 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. The position is maintained at the next device startup.
- 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.

1.64.10 8382.12 Relative position of reference point

Factory setting: 50000

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Relative position of the reference point

1.64.11 8382.13 Startup active

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

Startup active

1.64.12 8382.20 Number of position bits

Factory setting: 24

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 32

Number of position bits (SSI/SSI combi/CANopen)

1.64.13 8382.21 Number of multi-turn bits

Factory setting: 12

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 32

Number of multi-turn bits (SSI/SSI combi/CANopen)

1.64.14 8382.22 Start position bit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 30

Start position bit (SSI/SSI combi/CANopen)

1.64.15 8382.23 Pulses per revolution

Factory setting: 11

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 63

Pulses per revolution (SSI/SSI combi/CANopen)

1.64.16 8382.24 Static tolerance band

Factory setting: 1024

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Static tolerance band (SSI/CANopen)

1.64.17 8382.25 Dynamic tolerance band

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Dynamic tolerance band (SSI/CANopen)

1.64.18 8382.26 User-defined fault mask

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

User-defined fault mask (SSI/SSI combi/CANopen)

1.64.19 8382.27 User-defined warning mask

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

User-defined warning mask (SSI/SSI combi/CANopen)

1.64.20 8382.28 Motor feedback

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= ON

Motor feedback (SSI/CANopen)

1.64.21 8382.29 Refresh time

Factory setting: 0

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

Refresh time

1.64.22 8382.30 Initialization time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

Initialization time. Time until the encoder is ready for operation.

1.64.23 8382.31 Pause interval – SSI

Factory setting: 32

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 20 to 200

SSI pause interval (SSI/SSI combi encoder)

1.64.24 8382.32 SSI clock frequency

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 1= 125 kHz
- **2= 250 kHz**
- 3= 500 kHz
- 4= 1000 kHz
- 5= 2000 kHz

Clock frequency – SSI

1.64.25 8382.33 Number of clocks per frame – SSI

Factory setting: 25

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 48

SSI number of clocks per frame (SSI/SSI combi encoder)

1.64.26 8382.34 Power failure evaluation – SSI

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Power failure evaluation – SSI

1.64.27 8382.35 Configuration – SSI

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Gray-to-binary decoder inactive

Configuration – SSI

1.64.28 8382.40 Baud rate – CAN

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 125 kBaud
- 1= 250 kBaud
- **2= 500 kBaud**
- 3= 1 MBaud

Baud rate – CAN

1.64.29 8382.41 Number of SDO data – CANopen

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 8

Number of SDO data – CANopen

1.64.30 8382.42 - 8382.49 Array size 8 SDO service – CANopen

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 8

Resolution: 1

Range of values: 0 to 4294967295

SDO service – CANopen

1.64.31 8382.50 - 8382.57 Array size 8 SDO data – CANopen

Factory setting: 0

Unit:

Data type: Uint32 (array)

Data length: 8

Resolution: 1

Range of values: 0 to 4294967295

SDO data – CANopen

1.64.32 8382.60 Manufacturer ID – HIPERFACE®

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Stegmann
- 1= Heidenhain
- 2= Hübner

Manufacturer ID – HIPERFACE®

1.64.33 8382.120 Actual position in system units

Factory setting: 0

Unit: 1/65536 rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the current actual position in system units.

1.64.34 8382.121 Actual position in user units

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

The current position is displayed in user units. User units are defined when taking the drive train into operation.

1.64.35 8382.122 Actual position in user units – modulo

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

The current position is displayed in user units taking account of modulo scaling.

User units are defined when taking the drive train into operation.

1.64.36 8382.130 Encoder status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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 valid
- 17= Speed valid
- 18= Speed sensing disabled
- 20= Initialized
- 25= Delete referencing

Encoder status, bit coded.

1.64.37 8382.133 Motor data status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Data available
- 1= Search in progress
- 2= Reading in progress
- 3= Deleting in progress
- 4= Writing in progress
- 5= Error
- 6= Reading finished

Motor data status

1.64.38 8382.134 Encoder ID – HIPERFACE®

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Encoder ID – HIPERFACE®

1.64.39 8382.141 Firmware – part number

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Part number of the main firmware.

1.64.40 8382.142 Firmware – version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 255

Version number of the main firmware.

1.64.41 8382.143 Firmware – release

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Firmware – release

1.64.42 8382.170 - 8382.189 Array size 20 diagnostics

Factory setting: 0

Unit:

Data type: Int32 (array)

Data length: 20

Resolution: 1

Range of values: -2147483648 to 2147483647

Diagnostics

1.64.43 8382.192 Memory for motor data

Factory setting: 0

Unit:

Data type: Uint8 (fill level array)

Data length: 2048

Resolution: 1

Range of values: 0 to 255

Memory for motor data

1.64.44 8382.201 Zero offset correction

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Zero offset correction

1.64.45 8382.222 Position offset

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Position offset

1.65 8383 Output stage process values filtered for display

Control mode process values filtered for display.

1.65.1 8383.61 Stator frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator frequency

1.65.2 8383.117 Relative torque-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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.

1.65.3 8383.118 Absolute torque-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.65.4 8383.119 Relative field-generating current

Factory setting: 0

Unit: 1E-03% nominal device current

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.65.5 8383.120 Absolute field-generating current

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

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

1.65.6 8383.159 Absolute setpoint voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setpoint voltage, absolute value

1.65.7 8383.160 DC link voltage

Factory setting: 0

Unit: mV

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

DC link voltage

1.66 8385 CFC diagnostics

CFC diagnostics

1.66.1 8385.2 Unlimited rotor flux setpoint – system units absolute

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Unlimited rotor flux setpoint, system units, absolute

1.66.2 8385.3 Rotor flux model – system units absolute

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor flux, model, system units, absolute

1.66.3 8385.4 Standstill flux – system units absolute

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Standstill flux, system units, absolute

1.67 8386 V/f diagnostics

V/f diagnostics

1.67.1 8386 Inverse value of the V/f characteristic curve

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Inverse value of the V/f characteristic curve.

1.68 8387 Parameter measurement diagnostics

Parameter measurement diagnostics

1.68.1 8387.5 Measurement status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **1= Init**
- 2= Init wait
- 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
- 128= Checking
- 129= Complete
- 130= Finished

Measuring process status

1.69 8391 Fan control

Fan control

1.69.1 8391.100 Actual speed

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 100

Range of values: 0 to 100000

Actual speed

1.69.2 8391.104 Fan availability

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 100

Range of values: 0 to 100000

Display value for fan availability of fan window

1.70 8392 VFCPLUS 1

VFCPLUS 1

1.70.1 8392.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.70.2 8392.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Measure stator resistance.

- Off: Stator resistance is not measured.
- On: Stator resistance is measured.

1.70.3 8392.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 4Q (motor and generator mode)**
- 1= 2Q (only motor mode)
- 4Q (motor + generator mode)
- 2Q (only motor mode)

1.70.4 8392.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor.

1.70.5 8392.6 Premagnetization time – display

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Indicates the valid premagnetization time: Nominal premagnetization time x index 8392.5.

1.70.6 8392.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to adjust the output voltage in the small speed range. Changes to be made by experts only.

1.70.7 8392.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activation of the flying start function.

1.70.8 8392.9 Activate standstill current?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

If a motor is operated at low ambient temperatures, condensation might build up resulting in damage to the motor. 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.

1.70.9 8392.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

Setting of the amount of the standstill current with reference to the rated magnetization current of the motor. Immediate start only if values $\geq 100\%$.

1.70.10 8392.11 Flux optimization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Flux optimization (flux-optimized operation of the asynchronous motor)

1.70.11 8392.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Activate DC braking for brake ramps with FCB 02, FCB 13, FCB 14.

1.70.12 8392.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

– On: Amount of premagnetization current is monitored.

– Off: No monitoring,

1.70.13 8392.18 Factor – Kp flux controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the gain of the flux controller.

1.70.14 8392.51 Factor – Kp torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the gain of the torque controller.

1.70.15 8392.51 Factor – Tn torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the integral time of the torque controller.

1.70.16 8392.52 Factor – flying start current controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the gain of the current controller for the flying start function.

1.70.17 8392.54 Factor – stall limiting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the stall limit.

1.71 8393 VFCPLUS 2

VFCPLUS 2

1.71.1 8393.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.71.2 8393.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Measure stator resistance.

– Off: Not measured.

– On: Measured.

1.71.3 8393.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 4Q (motor and generator mode)**
- 1= 2Q (only motor mode)
- 4Q (motor + generator mode)
- 2Q (only motor mode)

1.71.4 8393.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor.

1.71.5 8393.6 Premagnetization time – display

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Indicates the valid premagnetization time: Nominal premagnetization time x index 8392.5.

1.71.6 8393.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to adjust the output voltage in the small speed range. Changes to be made by experts only.

1.71.7 8393.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activation of the flying start function.

1.71.8 8393.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

If a motor is operated at low ambient temperatures, condensation might build up resulting in damage to the motor. 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.

1.71.9 8393.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

Setting of the amount of the standstill current with reference to the rated magnetization current of the motor. Immediate start only if values $\geq 100\%$.

1.71.10 8393.11 Flux optimization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Flux optimization (flux-optimized operation of the asynchronous motor)

1.71.11 8393.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activate DC braking for brake ramps with FCB 02, FCB 13, FCB 14.

1.71.12 8393.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
 - 1= On
- On: Amount of premagnetization current is monitored.
- Off: No monitoring,

1.71.13 8393.50 Factor – Kp flux controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the gain of the flux controller.

1.71.14 8393.51 Factor – Kp torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the gain of the torque controller.

1.71.15 8393.52 Factor – Tn torque controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the integral time of the torque controller.

1.71.16 8393.53 Factor – flying start current controller

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the gain of the current controller for the flying start function.

1.71.17 8393.54 Factor – stall limiting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

This parameter can be used to influence the stall limit.

1.72 8394 CFC 1

Data of CFC control mode parameter set 1

1.72.1 8394.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.72.2 8394.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor.

1.72.3 8394.6 Premagnetization time – display

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Indicates the valid premagnetization time: Nominal premagnetization time x index 8392.5.

1.72.4 8394.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

If a motor is operated at low ambient temperatures, condensation might build up resulting in damage to the motor. 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.

1.72.5 8394.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

Setting of the amount of the standstill current with reference to the rated magnetization current of the motor. Immediate start only if values $\geq 100\%$.

1.72.6 8394.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

– On: Amount of premagnetization current is monitored

– Off: No monitoring

1.72.7 8394.19 Rotor resistance temperature adaptation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 400000

The rotor resistance can be adjusted to the operating temperature of the motor.

– Motor temperature measurement OFF: 100% = R at 70 °C.

– Motor temperature measurement ON: 100% = R at motor temperature.

1.72.8 8394.20 Adaptation of field weakening characteristic for asynchronous motors

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 50000 to 200000

Adjustment of the rotor flux in field weakening. 100% = nominal characteristic

1.72.9 8394.55 Current for optimized torque in base speed range

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

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 the maximum device current/nominal device current to achieve the maximum possible torque.

1.73 8395 CFC 2

Data of CFC control mode parameter set 2

1.73.1 8395.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.73.2 8395.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor.

1.73.3 8395.6 Premagnetization time – display

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Indicates the valid premagnetization time: Nominal premagnetization time x index 8392.5.

1.73.4 8395.9 Activate standstill current

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

If a motor is operated at low ambient temperatures, condensation might build up resulting in damage to the motor. 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.

1.73.5 8395.10 Standstill current value

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 200000

Setting of the amount of the standstill current with reference to the rated magnetization current of the motor. Immediate start only if values $\geq 100\%$.

1.73.6 8395.18 Current monitoring during premagnetization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
 - 1= On
- On: Amount of premagnetization current is monitored
- Off: No monitoring

1.73.7 8395.19 Rotor resistance temperature adaptation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 25000 to 400000

The rotor resistance can be adjusted to the operating temperature of the motor.

–Motor temperature measurement OFF: 100% = R at 70 °C.

– Motor temperature measurement ON: 100% = R at motor temperature.

1.73.8 8395.20 Adaptation of field weakening characteristic for asynchronous motors

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 50000 to 200000

Adjustment of the rotor flux in field weakening. 100% = nominal characteristic

1.73.9 8395.55 Current for optimized torque in base speed range

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

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 the maximum device current/nominal device current to achieve the maximum possible torque.

1.74 8396 V/f 1

V/f 1

1.74.1 8396.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.74.2 8396.2 Slope of the voltage characteristic curve

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

This parameter can be used to influence the slope of the voltage characteristic.

1.74.3 8396.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**
- Off: Measurement OFF
- On: Measurement ON

1.74.4 8396.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 4Q (motor and generator mode)**
- 1= 2Q (only motor mode)
- 4Q (motor + generator mode)
- 2Q (only motor mode)

1.74.5 8396.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor.

1.74.6 8396.6 Premagnetization time – display

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Indicates the valid premagnetization time: Nominal premagnetization time x index 8392.5.

1.74.7 8396.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to adjust the output voltage in the small speed range. Changes to be made by experts only.

1.74.8 8396.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activation of the flying start function.

1.74.9 8396.9 Slip compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

This parameter can be used to adjust the slip compensation with reference to the nominal slip.

1.74.10 8396.12 Stall limiting

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Activation of stall protection.

1.74.11 8396.14 IxR compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Compensation of the stator resistor voltage drop

1.74.12 8396.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activate DC braking for brake ramps with FCB 02, FCB 13, FCB 14.

1.75 8397 V/f 2

V/f 2

1.75.1 8397.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.75.2 8397.2 Voltage characteristic slope

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

This parameter can be used to influence the slope of the voltage characteristic.

1.75.3 8397.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
 - **1= On**
- Off: Measurement OFF
- On: Measurement ON

1.75.4 8397.4 Brake operation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 4Q (motor + generator mode)**
 - 1= 2Q (only motor mode)
- 4Q (motor + generator mode)
- 2Q (only motor mode)

1.75.5 8397.5 Premagnetization time – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Relative premagnetization time with reference to the rated premagnetization time of the motor.

1.75.6 8397.6 Premagnetization time – display

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

Indicates the valid premagnetization time: Nominal premagnetization time x index 8392.5.

1.75.7 8397.7 Boost

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

This parameter is used to adjust the output voltage in the small speed range. Changes to be made by experts only.

1.75.8 8397.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activation of the flying start function.

1.75.9 8397.9 Slip compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

This parameter can be used to adjust the slip compensation with reference to the nominal slip.

1.75.10 8397.12 Stall limiting

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Activation of stall protection.

1.75.11 8397.14 IxR compensation

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Compensation of the stator resistor voltage drop

1.75.12 8397.15 DC braking

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activate DC braking for brake ramps with FCB 02, FCB 13, FCB 14.

1.76 8399 ELSM® PLUS 1

Data of ELSM® PLUS control mode parameter set 1

1.76.1 8399.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.77 8400 ELSM® PLUS 2

Data of ELSM® PLUS control mode parameter set 2

1.77.1 8400.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.78 8401 ELSM® diagnostics

ELSM® diagnostics

1.78.1 8401.25 Stator resistance adaption – base frequency setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 50000 to 200000

Stator resistance adaption – base frequency setting

1.78.2 8401.26 Stator resistance adaption – display value of the base frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Stator resistance adaption – display value of the base frequency

1.78.3 8401.27 Stator resistance adaptation – gain factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 100000

Stator resistance adaption – gain factor

1.78.4 8401.28 Permanent flux adaption – display value of the base frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Permanent flux adaption – display value of the base frequency

1.78.5 8401.29 Speed controller boost – gain factor

Factory setting: 30

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 100

Speed controller boost – gain factor

1.79 8402 Current controller 1

Current controller 1

1.79.1 8402.51 Balance controller

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

This parameter is used to enable or disable the balance controller.

1.80 8403 Current controller 2

Current controller 2

1.80.1 8403.3 Kp factor

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 20000 to 200000

Kp factor

1.80.2 8403.51 Balance controller

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

This parameter is used to enable or disable the balance controller.

1.81 8404 Speed controller 1

The settings in this area are based on the entries made when defining the drive train (mass moment of inertia, stiffness, zero clearance).

1.81.1 8404.1 Speed/position controller sampling cycle

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 1.0 ms**
- 1= 0.5 ms
- 2= 0.25 ms
- 3= 2.0 ms

This parameter specifies the sampling cycle for speed and position controller. Small values improve the speed control for dynamic drives with low intrinsic inertia. This value is selected when setting the drive train (startup).

1.81.2 8404.2 Speed setpoint filter

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Time constant of the speed setpoint filter.

1.81.3 8404.3 Actual speed value filter

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Time constant of the actual speed value filter.

1.81.4 8404.4 P gain

Factory setting: 100000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Gain factor of the speed controller.

1.81.5 8404.5 Time constant

Factory setting: 40000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.81.6 8404.6 Velocity precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Velocity precontrol gain with reference to the nominal value.

1.81.7 8404.7 Acceleration precontrol filter

Factory setting: 5000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000000

Acceleration precontrol filter

1.81.8 8404.8 Acceleration precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Gain of acceleration precontrol.

1.81.9 8404.9 Integrator mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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 select 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.

1.81.10 8404.10 Local initialization of integrator

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

This parameter is used to specify the initialization value for the integrator if index 8404.9 was set to "Initialize".

1.81.11 8404.12 Switched integrator

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Switched
- 1= Not switched

Switched integrator

1.81.12 8404.13 Moment of inertia of the load

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1 to 2147483647

Maximum inertia at the motor shaft. This value is specified when starting up the drive train.

1.81.13 8404.14 Source of integrator initialization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

- 2105499= Data flexibilization layer output data 23
- 2171035= Data flexibilization layer output data 24
- 2236571= Data flexibilization layer output data 25
- 2302107= Data flexibilization layer output data 26
- 2367643= Data flexibilization layer output data 27
- 2433179= Data flexibilization layer output data 28
- 2498715= Data flexibilization layer output data 29
- 2564251= Data flexibilization layer output data 30
- 2629787= Data flexibilization layer output data 31

Source of integrator initialization

1.81.14 8404.15 Adapt time constant of closed-loop system

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

Adapt time constant of closed-loop system

1.81.15 8404.200 HMI stiffness

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

This parameter specifies the stiffness when starting up the drive train (slider).

1.81.16 8404.201 HMI zero clearance

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

This parameter specifies the zero clearance when starting up the drive train (slider).
100% means rigid coupling.

1.82 8405 Speed controller 2

Speed controller 2

1.82.1 8405.1 Speed/position controller sampling cycle

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1.0 ms
- 1= 0.5 ms
- 2= 0.25 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).

1.82.2 8405.2 Speed setpoint filter

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Time constant of the speed setpoint filter.

1.82.3 8405.3 Actual speed value filter

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Time constant of the actual speed value filter.

1.82.4 8405.4 P gain

Factory setting: 100000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Gain factor of the speed controller.

1.82.5 8405.5 Time constant

Factory setting: 40000

Unit: μs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.82.6 8405.6 Velocity precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Velocity precontrol gain with reference to the nominal value.

1.82.7 8405.7 Acceleration precontrol filter

Factory setting: 5000

Unit: μs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000000

Acceleration precontrol filter

1.82.8 8405.8 Acceleration precontrol gain

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Gain of acceleration precontrol

1.82.9 8405.9 Integrator mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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.

1.82.10 8405.10 Local initialization of integrator

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

This parameter is used to specify the initialization value for the integrator if index 8404.9 was set to "Initialize".

1.82.11 8405.12 Switched integrator

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Switched**
- 1= Not switched

Switched integrator

1.82.12 8405.13 Inertia of the load

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1 to 2147483647

Maximum inertia at the motor shaft. This value is specified when starting up the drive train.

1.82.13 8405.14 Source of integrator initialization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

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

Source of integrator initialization

1.82.14 8405.15 Adapt time constant of closed-loop system

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

Adapt time constant of closed-loop system

1.82.15 8405.200 HMI stiffness

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

This parameter specifies the stiffness when starting up the drive train (slider).

1.82.16 8405.201 HMI zero clearance

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

This parameter specifies the zero clearance when starting up the drive train (slider).
100% means rigid coupling.

1.83 8406 Position controller 1

Position controller 1

1.83.1 8406.1 P gain

Factory setting: 50000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

P gain for the position controller. The value results from the specifications made during drive train startup.

1.83.2 8406.3 Correcting value limit

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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.

- Off: No limitation, the target can be exceeded.
- On: Limitation active, the target is not exceeded.

1.84 8407 Position controller 2

Position controller 2

1.84.1 8407.1 P gain

Factory setting: 50000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

P gain for the position controller. The value results from the specifications made during drive train startup.

1.84.2 8407.3 Correcting value limit

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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.

- Off: No limitation, the target can be exceeded.
- On: Limitation active, target is not exceeded.

1.85 8408 ELSM® 1

ELSM® 1

1.85.1 8408.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Bit 0
- 1= Bit 1
- 2= Activate flying start function
- **3= Activate stator resistance measurement**
- 4= Disable torque limiting via frequency
- 5= Disable torque limiting via rotor flux deviation
- 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= Bit 15
- 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 – standard (4x pulses)
- 28= Measure rotor position – slow (8x pulses)
- 29= Measure rotor position – fast (2x pulses)
- 30= Bit 30
- 31= Use encoder speed

Control word

1.85.2 8408.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
 - **1= On**
- On: Upon enable, resistance is measured.
– Off: The resistance is not measured.

1.85.3 8408.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Activation of the flying start function for the ELSM® control mode.

– On: The flying start function is active. Upon enable, the internal voltage is determined. If a voltage is measured, the rotating field is synchronized to the determined speed.

– Off: No flying start function. Enable always begins with an adjustment process.

1.85.4 8408.20 Transition speed – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Transition speed from open-loop to closed-loop control with reference to the value calculated at motor startup.

1.85.5 8408.21 Transition speed – display value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Display of the speed value weighted with index 8408.20 for the transition from open-loop to closed-loop control.

1.85.6 8408.22 Overload factor – closed-loop control

Factory setting: 150000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 15000 to 2147483647

Setting of the maximum torque in closed-loop control with reference to the nominal motor torque.

1.85.7 8408.30 Overload factor – open-loop control

Factory setting: 150000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100000 to 2147483647

Setting of the maximum torque in open-loop control with reference to the nominal motor torque.

1.85.8 8408.31 Current amplitude display value – open-loop control

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Current amplitude display value – open-loop control

1.85.9 8408.40 Rotor adjustment – current amplitude setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Current setpoint for rotor adjustment with reference to the value calculated at motor startup.

1.85.10 8408.41 Rotor adjustment – current amplitude display value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the current amplitude for the adjustment weighted with index 8408.40.

1.85.11 8408.42 Rotor adjustment – setpoint current ramp duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10 to 10000

Rotor adjustment: Setpoint current ramp duration

1.85.12 8408.43 Rotor adjustment – min. evaluation duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100 to 100000

Rotor adjustment – min. evaluation duration

1.85.13 8408.44 Rotor adjustment – max. evaluation duration

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100 to 100000

Rotor adjustment: Evaluation of maximum duration

1.85.14 8408.45 Rotor adjustment – rotational frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: -3000 to 3000

Rotor adjustment: Rotational frequency

1.85.15 8408.46 Rotor adjustment – setting duration

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Rotor adjustment: Setting time

1.85.16 8408.47 Rotor adjustment – display value duration

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Rotor adjustment: Display value time

1.85.17 8408.48 Rotor adjustment – Kp

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 100000

Rotor adjustment: Kp

1.85.18 8408.49 Rotor adjustment – Ki

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 100000

Rotor adjustment – Ki

1.85.19 8408.60 Thermal motor protection – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 1000000

Thermal motor protection setting

1.85.20 8408.61 Thermal motor protection – display value

Factory setting: 1

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Thermal motor protection display value

1.86 8409 ELSM® 2

ELSM® 2

1.86.1 8409.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Bit 0
- 1= Bit 1
- 2= Activate flying start function
- **3= Activate stator resistance measurement**
- 4= Disable torque limiting via frequency

- 5= Disable torque limiting via rotor flux deviation
- 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= Bit 15
- 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 – standard (4x pulses)
- 28= Measure rotor position – slow (8x pulses)
- 29= Measure rotor position – fast (2x pulses)
- 30= Bit 30
- 31= Use encoder speed

Control word

1.86.2 8409.3 Measure stator resistance

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
 - **1= On**
- On: Upon enable, the resistance is measured.
- Off: The resistance is not measured.

1.86.3 8409.8 Flying start

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

Activation of the flying start function for the ELSM® control mode.

– On: The flying start function is active. Upon enable, the internal voltage is determined. If a voltage is measured, the rotating field is synchronized to the determined speed.

– Off: No flying start function. Enable always begins with an adjustment process.

1.86.4 8409.20 Transition speed – setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Transition speed from open-loop to closed-loop control with reference to the value calculated at motor startup.

1.86.5 8409.21 Transition speed – display value

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Display of the speed value weighted with index 8408.20 for the transition from open-loop to closed-loop control.

1.86.6 8409.22 Overload factor – closed-loop control

Factory setting: 150000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 150000 to 2147483647

Setting of the maximum torque in closed-loop control with reference to the nominal motor torque.

1.86.7 8409.30 Overload factor – open-loop control

Factory setting: 150000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100000 to 2147483647

Setting of the maximum torque in open-loop control with reference to the nominal motor torque.

1.86.8 8409.31 Current amplitude display value – open-loop control

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Current amplitude display value – open-loop control

1.86.9 8409.40 Rotor adjustment – current amplitude setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Current setpoint for rotor adjustment with reference to the value calculated at motor startup.

1.86.10 8409.41 Rotor adjustment – current amplitude display value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the current amplitude for the adjustment weighted with index 8408.40.

1.86.11 8409.42 Rotor adjustment – setpoint current ramp duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10 to 10000

Rotor adjustment: Setpoint current ramp duration

1.86.12 8409.43 Rotor adjustment – min. evaluation duration

Factory setting: 100

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100 to 100000

Rotor adjustment – min. evaluation duration

1.86.13 8409.44 Rotor adjustment – max. evaluation duration

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100 to 100000

Rotor adjustment: Evaluation of maximum duration

1.86.14 8409.45 Rotor adjustment – rotational frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: -3000 to 3000

Rotor adjustment – rotational frequency

1.86.15 8409.46 Rotor adjustment – setting duration

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1000000

Rotor adjustment – setting duration

1.86.16 8409.47 Rotor adjustment – display value duration

Factory setting: 0

Unit: ms

Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 100000
 Rotor adjustment: Display value time

1.86.17 8409.48 Rotor adjustment – Kp

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 10000 to 100000
 Rotor adjustment – Kp

1.86.18 8409.49 Rotor adjustment – Ki

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 10000 to 100000
 Rotor adjustment – Ki

1.86.19 8409.60 Thermal motor protection – setting

Factory setting: 100000
 Unit: 1E-03%
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 10000 to 1000000
 Thermal motor protection – setting

1.86.20 8409.61 Thermal motor protection – display value

Factory setting: 1
 Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 1 to 1000000
 Thermal motor protection –display value

1.87 8410 Power section – configuration data

Power section – configuration data

1.87.1 8410.41 DC link detection level – ON

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to Float32Max

DC link ON detection level

1.87.2 8410.42 DC link detection level – OFF

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to Float32Max

DC link OFF detection level

1.88 8411 Motor configuration data

Configuration data of the standard motor.

1.88.1 8411.5 Version number

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version number

1.88.2 8411.6 Motor type

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Motor type

1.88.3 8411.7 Number of pole pairs

Factory setting: 1

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 1 to 500

Number of pole pairs

1.88.4 8411.8 Nominal speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 36000

Nominal speed

1.88.5 8411.9 Maximum speed at motor shaft

Factory setting: 100

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 36000

Maximum permitted torque at the motor shaft.

1.88.6 8411.10 Nominal torque matching nominal current

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 50000

Nominal torque matching the nominal current

1.88.7 8411.11 Maximum torque at motor shaft

Factory setting: 0

Unit: Nm

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 50000

Maximum permitted torque at the motor shaft.

1.88.8 8411.12 Nominal current matching nominal torque

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 10000

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

1.88.9 8411.13 Maximum current

Factory setting: 0

Unit: A

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 10000

Maximum current (line current, rms)

1.88.10 8411.14 Nominal voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 2000

Nominal voltage (line voltage, rms)

1.88.11 8411.15 Nominal frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 20000

Nominal frequency

1.88.12 8411.16 Stator resistance at 20 °C

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

1.88.13 8411.17 Rotor resistance at 20 °C

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

1.88.14 8411.18 Nominal stator temperature

Factory setting: 0
Unit: °C
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Nominal stator temperature

1.88.15 8411.19 Temperature coefficient – stator resistance

Factory setting: 0
Unit: K
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Stator resistance temperature coefficient

1.88.16 8411.20 Temperature coefficient – rotor resistance

Factory setting: 0
Unit: K
Data type: Float32
Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Rotor resistance temperature coefficient

1.88.17 8411.21 Characteristic curve I(Psi_SigmaAbs) – L_Ref

Factory setting: 0

Unit: H

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaAbs): L_Ref

1.88.18 8411.22 Characteristic curve I(Psi_SigmaAbs_d) – p0

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaAbs_d): p0

1.88.19 8411.23 Characteristic curve I(Psi_SigmaAbs_d) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaAbs_d): p1

1.88.20 8411.24 Characteristic curve I(Psi_SigmaAbs_d) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaAbs_d): p2

1.88.21 8411.25 Characteristic curve I(Psi_SigmaAbs_q) – p0

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_SigmaAbs_q): p0

1.88.22 8411.26 Characteristic curve I(Psi_SigmaAbs_q) – p1

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_SigmaAbs_q): p1

1.88.23 8411.27 Characteristic curve I(Psi_SigmaAbs_q) – p2

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_SigmaAbs_q): p2

1.88.24 8411.28 Characteristic curve I(Psi_SigmaDiff) – L_Ref

Factory setting: 0
Unit: H
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_SigmaDiff): L_Ref

1.88.25 8411.29 Characteristic curve I(Psi_SigmaDiff_d) – p0

Factory setting: 0
Unit:
Data type: Float32
Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaDiff_d): p0

1.88.26 8411.30 Characteristic curve I(Psi_SigmaDiff_d) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaDiff_d): p1

1.88.27 8411.31 Characteristic curve I(Psi_SigmaDiff_d) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaDiff_d): p2

1.88.28 8411.32 Characteristic curve I(Psi_SigmaDiff_q) – p0

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaDiff_q): p0

1.88.29 8411.33 Characteristic curve I(Psi_SigmaDiff_q) – p1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_SigmaDiff_q): p1

1.88.30 8411.34 Characteristic curve I(Psi_SigmaDiff_q) – p2

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_SigmaDiff_q): p2

1.88.31 8411.35 Characteristic curve I(Psi_S) – I_Ref

Factory setting: 0
Unit: A
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_S): I_Ref

1.88.32 8411.36 Characteristic curve I(Psi_S) – L_Ref

Factory setting: 0
Unit: H
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_S): L_Ref

1.88.33 8411.37 Characteristic curve I(Psi_S) – p0

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve I(Psi_S): p0

1.88.34 8411.38 Characteristic curve I(Psi_S) – p1

Factory setting: 0
Unit:
Data type: Float32
Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_S): p1

1.88.35 8411.39 Characteristic curve I(Psi_S) – p2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve I(Psi_S): p2

1.88.36 8411.40 Characteristic curve M(I) – a1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve M(I): a1

1.88.37 8411.41 Characteristic curve M(I) – a2

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve M(I): a2

1.88.38 8411.42 Characteristic curve M(I) – a3

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Characteristic curve M(I): a3

1.88.39 8411.43 Characteristic curve M(I) – a4

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve M(I): a4

1.88.40 8411.44 Characteristic curve M(I) – a5

Factory setting: 0
Unit:
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
Characteristic curve M(I): a5

1.88.41 8411.45 Internal voltage at 1000 1/min

Factory setting: 0
Unit: V
Data type: Float32
Data length: 1
Resolution: -
Range of values: -3.402823E+38 to Float32Max
U_{p0} at 1000 1/min

1.88.42 8411.46 Encoder offset

Factory setting: 0
Unit: °
Data type: Float32
Data length: 1
Resolution: -
Range of values: -360 to 360
Encoder offset

1.88.43 8411.47 Inertia of motor and brake

Factory setting: 0
Unit: kgm²
Data type: Float32
Data length: 1

Resolution: -

Range of values: 0 to Float32Max

Inertia of motor and brake

1.88.44 8411.200 HMI motor identification

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

HMI motor ID

1.89 8412 Speed controller configuration data

Speed controller configuration data

1.89.1 8412.2 Speed setpoint filter

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Speed setpoint filter

1.89.2 8412.3 Actual speed value filter

Factory setting: 1000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Actual speed value filter P1

1.89.3 8412.4 P gain

Factory setting: 100000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000
P gain

1.89.4 8412.5 Time constant

Factory setting: 40000
Unit: μ s
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000000
Time constant

1.89.5 8412.6 Gain – velocity precontrol

Factory setting: 100000
Unit: 1E-03%
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000000
Velocity precontrol gain

1.89.6 8412.7 Acceleration precontrol filter

Factory setting: 5000
Unit: μ s
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 100000000
Acceleration precontrol filter

1.89.7 8412.8 Gain – acceleration precontrol

Factory setting: 100000
Unit: 1E-03%
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000000
Gain of acceleration precontrol

1.89.8 8412.13 Inertia of the load

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1 to 2147483647

Inertia of the load

1.89.9 8412.200 HMI stiffness

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

HMI stiffness

1.89.10 8412.201 HMI zero clearance

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

HMI zero clearance

1.90 8413 Position controller configuration data

Position controller configuration data

1.90.1 8413.1 P gain

Factory setting: 50000

Unit: 1E-03/s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

P gain

1.91 8415 Power section – determine calibration data

Power section – determine calibration data

1.91.1 8415.1 Determined gain factor – motor current measurement path U

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Determined gain factor – motor current measurement path U

1.91.2 8415.2 Determined gain factor – motor current measurement path V

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Determined gain factor – motor current measurement path V

1.91.3 8415.3 Determined gain factor – motor current measurement path W

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Determined gain factor – motor current measurement path W

1.91.4 8415.4 Determined offset – DC link voltage measurement

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Determined offset – DC link voltage measurement

1.91.5 8415.5 Determined offset – output voltage measurement path UV

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Determined offset – output voltage measurement path UV

1.91.6 8415.6 Determined offset – output voltage measurement path VW

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Determined offset – output voltage measurement path VW

1.91.7 8415.10 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

Activation

1.91.8 8415.11 Status word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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= Error code bit 0

- 17= Error code bit 1
- 18= Error code bit 2
- 19= Error code bit 3
- 20= Error code bit 4
- 21= Error code bit 5
- 22= Error code bit 6
- 23= Error code bit 7

Status word

1.91.9 8415.12 Start measurement

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

1.92 8417 Determine resolver calibration data

Determine resolver calibration data

1.92.1 8417.1 Determined gain factor

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Determined resolver gain factor

1.92.2 8417.2 Determined calibration details

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Sine greater than cosine

Determined calibration details

1.92.3 8417.10 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Activation

1.92.4 8417.11 Status word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Ready
- 1= Measurement in progress
- 2= Data determined
- 5= Fault
- 8= Measurement finished
- 16= Error code bit 0
- 17= Error code bit 1
- 18= Error code bit 2
- 19= Error code bit 3
- 20= Error code bit 4
- 21= Error code bit 5
- 22= Error code bit 6
- 23= Error code bit 7

Status word

1.92.5 8417.12 Start measurement

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= None**
- 1= Gain factor

Start measurement

1.93 8418 Encoder calibration – rotating 1

Encoder calibration – rotating 1

1.93.1 8418.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.94 8419 Encoder calibration – rotating 2

Encoder calibration – rotating 2

1.94.1 8419.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

1.95 8420 Encoder calibration – standstill 1

Encoder calibration – standstill 1

1.95.1 8420.1 Voltage time area setpoint

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1000000

Voltage time area setpoint

1.95.2 8420.2 Ks

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 20000

Ks

1.95.3 8420.3 AlphaS

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

AlphaS

1.95.4 8420.4 Amplitude of the 4th harmonic

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 95443718

Amplitude of the 4th harmonic

1.95.5 8420.5 Phase position of the 4th harmonic

Factory setting: 0

Unit: $1/(2^{32})$ rev
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 4294967295
 Phase position of the 4th harmonic

1.95.6 8420.6 Amplitude of the 6th harmonic

Factory setting: 0
 Unit: $1/(2^{32})$ rev
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 95443718
 Amplitude of the 6th harmonic

1.95.7 8420.7 Phase position of the 6th harmonic

Factory setting: 0
 Unit: $1/(2^{32})$ rev
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 4294967295
 Phase position of the 6th harmonic

1.95.8 8420.9 Time constant angle monitor

Factory setting: 500000
 Unit: μs
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 10000000
 Time constant angle monitor

1.95.9 8420.10 Control word

Factory setting:
 Data type: Bit field
 Data length: 1
 Range of values:

- 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

1.96 8421 Encoder calibration – standstill 2

Encoder calibration – standstill 2

1.96.1 8421.1 Voltage time area setpoint

Factory setting: 0

Unit: μ Vs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 1000000

Voltage time area setpoint

1.96.2 8421.2 Ks

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 20000

Ks

1.96.3 8421.3 AlphaS

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

AlphaS

1.96.4 8421.4 Amplitude of the 4th harmonic

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 95443718

Amplitude of the 4th harmonic

1.96.5 8421.5 Phase position of the 4th harmonic

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Phase position of the 4th harmonic

1.96.6 8421.6 Amplitude of the 6th harmonic

Factory setting: 0

Unit: $1/(2^{32})$ rev
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 95443718
Amplitude of the 6th harmonic

1.96.7 8421.7 Phase position of the 6th harmonic

Factory setting: 0
Unit: $1/(2^{32})$ rev
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Phase position of the 6th harmonic

1.96.8 8421.9 Time constant angle monitor

Factory setting: 500000
Unit: μ s
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000000
Time constant angle monitor

1.96.9 8421.10 Control word

Factory setting:
Data type: Bit field
Data length: 1
Range of values:

- 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

1.97 8422 Net torque 1

Net torque 1

1.97.1 8422.1 Inertia

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Inertia

1.97.2 8422.2 Filter time

Factory setting: 1000

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Filter time

1.98 8423 Net torque 2

Net torque 2

1.98.1 8423.1 Inertia

Factory setting: 0

Unit: 1E-07 kgm²

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Inertia

1.98.2 8423.2 Filter time

Factory setting: 1000

Unit: µs

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000000

Filter time

1.99 8425 Smart motor setup

Smart motor startup

1.99.1 8425.1 Perform smart motor setup?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to perform a simple startup for the power-adjusted motor.

– Yes: Startup is performed.

– No: No action.

1.99.2 8425.2 Country-specific combination of nominal motor voltage and nominal motor frequency

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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.

1.99.3 8425.3 Country-specific combination of nominal motor voltage and nominal motor frequency

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

1.100 8430 Internal data backup

Internal data backup

1.100.1 8430.1 Status 1

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Status 1

1.100.2 8430.2 Command 1

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

1.100.3 8430.3 Description 1

Factory setting:

Data type: String8Bit (fill level array)

Data length: 21

Resolution:

Range of values:

Description 1

1.100.4 8430.8 Operating hours counter 1

Factory setting: 0

Unit: min

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Operating hours counter 1

1.100.5 8430.9 Date and time 1

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Date and time 1

1.100.6 8430.10 Parameter layout 1

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Parameter layout 1 (attritab version)

1.101 8431 Parameter setup

Parameters of the parameter setup function block

1.101.1 8431.1. Perform basic initialization?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Perform basic initialization

1.101.2 8431.2 Restore delivery state?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter can be used to set all device settings to their default values. The parameter is reset automatically.

1.101.3 8431.13 Scope of parameters in the event of a download error

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 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). Total parameter set: Value 1.

1.101.4 8431.100 CRC device parameter set

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

CRC device parameter set

1.102 8432 Non-volatile memory – direct access

NV direct access

1.102.1 8432.6 Content as data array

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 32768

Resolution: 1

Range of values: 0 to 255

Content as data array

1.103 8433 Scope control

Scope control

1.103.1 8433.1 Control word

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Scope control word

1.103.2 8433.2 Status word

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Scope status word

1.103.3 8433.3 Reference time

Factory setting:

- 0
- 0

Unit:

Data type: Uint8 (DataArray)

Data length: 8

Resolution: 1

Range of values: 0 to 255

Reference time of the scope measurement (64 bits)

1.103.4 8433.5 Trigger time

Factory setting:

- 0
- 0

Unit:

Data type: UInt8 (DataArray)

Data length: 8

Resolution: 1

Range of values: 0 to 255

Trigger time of the scope measurement.

1.103.5 8433.7 Maximum number of sampling points

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Indicates the maximum number of sampling points per channel.

1.104 8434 Scope configuration

Scope configuration

1.104.1 8434.1 Configuration ID

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Scope configuration ID

1.104.2 8434.2 Maximum number of recording channels

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1
Resolution: 1
Range of values: 0 to 65535
Maximum number of recording channels

1.104.3 8434.3 Maximum number of trigger channels

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 65535
Maximum number of trigger channels

1.104.4 8434.10 Minimum configurable sampling cycle

Factory setting: 0
Unit: μ s
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Minimum configurable sampling cycle

1.104.5 8434.11 Maximum configurable sampling cycle

Factory setting: 0
Unit: μ s
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Maximum configurable sampling cycle

1.104.6 8434.12 System time resolution

Factory setting: 0
Unit: ns
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
Resolution of the system time

1.104.7 8434.13 Scope time resolution

Factory setting: 0

Unit: ns

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Resolution of the scope time

1.104.8 8434.30 Scope memory size

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Size of the scope memory in bytes (for diagnostics and test).

1.105 8435 Scope setting values

Scope setting values

1.105.1 8435.1 Recording mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **1= Trace mode**
- 2= Streaming mode
- 3= Streaming prefilter mode
- 4= Trace data logger

Recording mode

1.105.2 8435.2 Sampling cycle

Factory setting: 1000

Unit: μ s

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Scope sampling cycle

1.105.3 8435.3 Post-trigger recording

Factory setting: 50

Unit: %

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 100

Post-trigger recording

1.105.4 8435.8 Memory optimization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Memory optimization

1.105.5 8435.9 Application index

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Standard**
- 1= Control technology
- 2= Data logger
- 3= ASMOS

Application index

1.105.6 8435.10 Recording channel – index

Factory setting:

- 8364.44 Actual speed in user units
- 8364.43 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
- 0.0 No function
- 8365.1 Fault code

Data type: Parameter pointer (DataArray)

Data length: 10

Range of values:

- 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
- 8364.43 Speed controller setpoint speed in user units
- 8364.44 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, r.m.s. value
- 8364.160 DC link voltage – instantaneous value
- 8367.10 Process output data
- 8367.11 Process output data
- 8367.12 Process output data
- 8367.13 Process output data
- 8367.14 Process output data
- 8367.15 Process output data
- 8367.16 Process output data
- 8367.17 Process output data
- 8367.18 Process output data
- 8367.19 Process output data
- 8367.20 Process output data
- 8367.21 Process output data
- 8367.22 Process output data
- 8367.23 Process output data
- 8367.24 Process output data
- 8367.25 Process output data
- 8368.4 Process input data
- 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)

1.105.7 8435.20 Recording channel – offset array

Factory setting:

- 0
- 0

Unit:

Data type: Uint32 (DataArray)

Data length: 10

Resolution: 1

Range of values: 0 to 4294967295

Value of the respective recording channel.

1.105.8 8435.30 Recording channel – debug address

Factory setting:

- 0
- 0

Unit:

Data type: Uint32 (DataArray)

Data length: 10

Resolution: 1

Range of values: 0 to 4294967295

Debug address of the recording channel, array (array index -> recording channel number).

1.105.9 8435.40 Recording channel – data type

Factory setting:

Data type: Enum (DataArray)

Data length: 10

Range of values:

- 1= Uint8
- 2= Uint16
- 4= Uint32
- 260= Float
- 32769= Int8
- 32770= Int16
- **32772= Int32**

Data type of the respective recording channel.

1.105.10 8435.50 Recording channel – description

Factory setting: 0

Unit:

Data type: Uint8 (DataArray)

Data length: 120

Resolution: 1

Range of values: 0 to 255

Descriptions of the recording channel: 12 ASCII characters

1.105.11 8435.100 Trigger connection

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Trigger connection (AND/OR operation of several triggers)

1.105.12 8435.105 Trigger – delay mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= Dead time element
- 2= Pulse width
- 3= Pulse stretching

Trigger – delay mode

1.105.13 8435.106 Trigger – delay time

Factory setting: 0

Unit: μ s

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Trigger – delay time

1.105.14 8435.110 Trigger type

Factory setting:

- 514
- 0

Unit:

Data type: Uint16 (DataArray)

Data length: 3

Resolution: 1

Range of values: 0 to 65535

Trigger type

1.105.15 8435.120 Trigger source

Factory setting:

- 10
- 0

Unit:

Data type: Uint16 (DataArray)

Data length: 3

Resolution: 1

Range of values: 0 to 10

Trigger source

1.105.16 8435.130 Trigger – additional description parameter 1

Factory setting:

- 65535
- 0

Unit:

Data type: Uint32 (DataArray)

Data length: 3

Resolution: 1

Range of values: 0 to 4294967295

Trigger – additional description parameter 1

1.105.17 8435.140 Trigger – additional description parameter 2

Factory setting:

- 0
- 0

Unit:

Data type: Uint32 (DataArray)

Data length: 3

Resolution: 1

Range of values: 0 to 4294967295

Trigger – additional description parameter 2

1.106 8436 System time

System time

1.106.1 8436.1 System time

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 2

Resolution: 1

Range of values: 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.

1.106.2 8436.2 System time low part

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Low part of the system time to allow for scope recording.

1.106.3 8436.3 Time resolution

Factory setting: 1

Unit: ns

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Time resolution of the system time

1.106.4 8436.4 Time resolution in system time

Factory setting: 1

Unit: ns

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Time resolution tick

1.107 8437 Brake control

Brake control

1.107.1 8437.2 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Brake applied
- 1= Brake released

Status bits

1.108 8438 Function activation

Function activation

1.108.1 8438.1 TAN

Factory setting: 00000000.00.0

Data type: String8Bit (fill level array)

Data length: 14

Resolution:

Range of values:

TAN

1.109 8439 Thermal motor protection

Thermal motor protection of the active drive.

1.109.1 8439.1 Motor temperature – current parameter set

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Motor temperature in the current parameter set (KTY).

1.109.2 8439.2 Motor utilization – current parameter set

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Utilization in percent of the motor of the currently active parameter set: if no model is active, then this value is set to zero. The error threshold is 100%.

1.109.3 8439.3 Status bits – current parameter set

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Prewarning
- 1= Prewarning – sensor
- 2= Prewarning – model

Status bits of the currently active parameter set (copy of 8442.55 or 8443.55).

1.109.4 8439.50 Thermal motor protection initialized

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Thermal motor protection initialized

1.110 8440 Thermal motor protection 1

1.110.1 8440.1 Thermal motor monitoring used

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No monitoring
- **1= Monitoring 1**
- 2= Monitoring 2

Thermal motor monitoring used (TMU)

1.111 8441 Thermal motor protection 2

1.111.1 8441.1 Thermal motor monitoring used

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No monitoring
- 1= Monitoring 1
- **2= Monitoring 2**

Thermal motor monitoring used (TMU)

1.112 8442 General data – thermal motor protection 1

General data – thermal motor protection 1

1.112.1 8442.1 Temperature sensor type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No sensor**
- 1= TF
- 2= TH
- 3= KTY
- 4= PK

Temperature sensor type

1.112.2 8442.2 Connection

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No connection
- **1= Connector**
- 2= Terminal
- 3= Connector option

Connection

1.112.3 8442.3 Sensor temperature error threshold

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 30000

A fault is triggered when this temperature is exceeded. If this value is "0", then no utilization is calculated from the sensor temperature.

1.112.4 8442.4 Prewarning threshold

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 101000

If a valid utilization exceeds the prewarning threshold, the "Prewarning threshold response" (.5) is triggered. The prewarning threshold refers to the relative utilizations (indices .53 and .54).

1.112.5 8442.5 Prewarning threshold response

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 1= Warning
- **2= Application stop (with output stage inhibit)**
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

Programs the response of the drive to an exceeded prewarning threshold (8442.4).

1.112.6 8442.6 Evaluation sequence control

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

1.112.7 8442.7 Enable sensor evaluation?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Sensor evaluation enable

1.112.8 8442.51 Temperature sensor temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the measured temperature of the temperature sensor of the motor.

1.112.9 8442.52 Motor model temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Calculated motor temperature based on the motor model.

1.112.10 8442.53 Temperature sensor evaluation

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Utilization of the motor temperature sensor in percent:

– 0%: Motor temperature sensor below 40 °C.

– 101%: Switch-off temperature reached (index 8442.3).

1.112.11 8442.54 Motor model utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Motor utilization in percent: If no model is active, this value is set to zero. The error threshold is 100%.

1.112.12 8442.55 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Prewarning
- 1= Prewarning – sensor
- 2= Prewarning – model

Status bits

1.112.13 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

Range of values: 0 to 4294967295

Backup due to device reset

1.113 8443 General data – thermal motor protection 2

General data – thermal motor protection 2

1.113.1 8443.1 Temperature sensor type

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No sensor**
- 1= TF
- 2= TH
- 3= KTY
- 4= PK

Temperature sensor type

1.113.2 8443.2 Connection

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No connection

- **1= Connector**
 - 2= Terminal
 - 3= Connector option
- Connection

1.113.3 8443.3 Sensor temperature error threshold

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.113.4 8443.4 Prewarning threshold

Factory setting: 0

Unit: 1E-03%

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 101000

If a valid utilization exceeds the prewarning threshold, the "Prewarning threshold response" (.5) is triggered. The prewarning threshold refers to the relative utilizations (indices .53 and .54).

1.113.5 8443.5 Prewarning threshold response

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 1= Warning
- **2= Application stop (with output stage inhibit)**
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

Programs the response of the drive to an exceeded prewarning threshold (8443.4).

1.113.6 8443.6 Evaluation sequence control

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

1.113.7 8443.7 Enable sensor evaluation?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Sensor evaluation enable

1.113.8 8443.51 Temperature sensor temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Indicates the measured temperature of the temperature sensor of the motor.

1.113.9 8443.52 Motor model temperature

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Calculated motor temperature based on the motor model.

1.113.10 8443.53 Temperature sensor evaluation

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Utilization of the motor temperature sensor in percent.

– 0%: Motor temperature sensor below 40 °C.

– 101%: Switch-off temperature reached (index 8442.3).

1.113.11 8443.54 Motor model utilization

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Motor utilization in percent: If no model is active, this value is set to zero. The error threshold is 100%.

1.113.12 8443.55 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Prewarning
- 1= Prewarning – sensor
- 2= Prewarning – model

Status bits

1.113.13 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

Range of values: 0 to 4294967295

Backup due to device reset.

1.114 8444 TMU model 1 for synchronous motor

1.114.1 8444.1 Version

Factory setting: 0

Unit:

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version of the model

1.114.2 8444.2 Model temperature error threshold

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 30000

Motor-dependent switch-off temperature of the model.

1.114.3 8444.3 Stator resistance

Factory setting: -1

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: -1 to 1000

Stator resistance (phase value in star connection at 20 °C)

1.114.4 8444.4 Heat transfer resistance winding/iron – R_thWE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thWE (heat transfer resistance winding, iron)

1.114.5 8444.5 Heat transfer resistance iron/ambient – R_thEU

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thEU (heat transfer resistance iron, ambient)

1.114.6 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: -

Range of values: -3.402823E+38 to Float32Max

R_thuK (heat transfer resistance winding U to KTY, also applies to winding V to KTY)

1.114.7 8444.7 Heat transfer resistance KTY/iron – R_thKE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thKE (heat transfer resistance KTY, iron)

1.114.8 8444.8 Thermal capacity windings U, V, W – C_thW

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

C_thW (thermal capacitance winding u, v, w)

1.114.9 8444.8 Thermal capacity iron – C_thE

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

C_thE (thermal capacity iron)

1.114.10 8444.9 Thermal capacity KTY – C_thK

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

C_thK (thermal capacity KTY)

1.114.11 8444.10 Power loss depending on speed – p_vfe0

Factory setting: 0

Unit: J

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

p_vfe0 (power loss depending on speed)

1.114.12 8444.12 Power loss depending on square speed – p_vfeq

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

p_vfeq (power loss depending on square speed)

1.114.13 8444.13 Luenberger coefficient L1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L1

1.114.14 8444.13 Luenberger coefficient L2 = L3

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L2 = L3

1.114.15 8444.15 Luenberger coefficient L4

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L4

1.114.16 8444.16 Luenberger coefficient L5

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L5

1.115 8445 TMU model 2 for synchronous motor

1.115.1 8445.1 Version

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Version of the model

1.115.2 8445.2 Model temperature error threshold

Factory setting: 0

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 30000

Motor-dependent switch-off temperature of the model

1.115.3 8445.3 Stator resistance

Factory setting: -1

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: -1 to 1000

Stator resistance (phase value in star connection at 20 °C)

1.115.4 8445.4 R_thWE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thWE (heat transfer resistance winding, iron)

1.115.5 8445.5 R_thEU

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thEU (heat transfer resistance iron, ambient)

1.115.6 8445.6 R_thuK

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thuK (heat transfer resistance winding U to KTY, also applies to winding V to KTY)

1.115.7 8445.7 R_thKE

Factory setting: 0

Unit: K/W

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

R_thKE (heat transfer resistance KTY, iron)

1.115.8 8445.8 C_thW

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

C_thW (thermal capacitance winding u, v, w)

1.115.9 8445.9 C_thE

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

C_thE (thermal capacity iron)

1.115.10 8445.10 C_thK

Factory setting: 0

Unit: J/K

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

C_thK (thermal capacity KTY)

1.115.11 8445.11 p_vfe0

Factory setting: 0

Unit: J

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

p_vfe0 (power loss depending on speed)

1.115.12 8445.12 p_vfeq

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

p_vfeq (power loss depending on square speed)

1.115.13 8445.13 Luenberger coefficient L1

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L1

1.115.14 8445.14 Luenberger coefficient L2 = L3

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L2 = L3

1.115.15 8445.15 Luenberger coefficient L4

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L4

1.115.16 8445.16 Luenberger coefficient L5

Factory setting: 0

Unit:

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Luenberger coefficient L5

1.116 8446 I2t model for TMU 1**1.116.1 8446.1 Nominal current**

Factory setting: 0

Unit: A

Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: 0 to 10000
 Nominal current (rms)

1.116.2 8446.2 Time constant

Factory setting: 0
 Unit: s
 Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: -3.402823E+38 to Float32Max
 Time constant

1.116.3 8446.10 - 8446.17 Array size 8 Relative current characteristic

Factory setting: 0
 Unit:
 Data type: Float32 (Array)
 Data length: 8
 Resolution: -
 Range of values: -3.402823E+38 to Float32Max
 Relative current characteristic

1.116.4 8446.20 - 8446.27 Array size 8 Stator frequency characteristic

Factory setting: 0
 Unit: Hz
 Data type: Float32 (Array)
 Data length: 8
 Resolution: -
 Range of values: -3.402823E+38 to Float32Max
 Stator frequency characteristic

1.117 8447 I2t model for TMU 2

1.117.1 8447.1 Nominal current

Factory setting: 0
 Unit: A
 Data type: Float32
 Data length: 1
 Resolution: -

Range of values: 0 to 10000

Nominal current (rms)

1.117.2 8447.2 Time constant

Factory setting: 0

Unit: s

Data type: Float32

Data length: 1

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Time constant

1.117.3 8447.10 - 8447.17 Array size 8 Relative current characteristic

Factory setting: 0

Unit:

Data type: Float32 (Array)

Data length: 8

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Relative current characteristic

1.117.4 8447.20 - 8447.27 Array size 8 Stator frequency characteristic

Factory setting: 0

Unit: Hz

Data type: Float32 (Array)

Data length: 8

Resolution: -

Range of values: -3.402823E+38 to Float32Max

Stator frequency characteristic

1.118 8448 Ex protection function category 2 – data 1

The inverter allows for implementing monitoring for category 2.

This function can be activated in any operating mode with a motor (no group operation!).

For this purpose, 5 frequency points are defined and a maximum current is assigned to each point. The current must be permanently below the characteristic curve defined by the points. This area can be left briefly (lxt monitoring).

The inverter monitors the combination of motor and inverter for $I_{N_inverter} \leq 2 \times I_{N_motor}$. If the threshold is exceeded, fault 52.3 = "Error messages of ex protection function category 2". "Inverter too large" will be issued.

For motors from SEW-EURODRIVE, the points are loaded during startup. For third party motors, these points must be entered manually.

The following always applies:

- Frequency A < frequency B < frequency C < frequency D < frequency E
- Current limit A < current limit B < 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.

1.118.1 8448.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On
- Off: No frequency-dependent current monitoring.
- On: Frequency-dependent current monitoring.

1.118.2 8448.2 Frequency point A

Factory setting: 5000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 60000

Value for minimum operating frequency fA. The operation time with frequency A is 60 seconds regardless of the current value. After expiry of this time, the inverter switches off and issues fault 52.5 "Error messages of Ex protection function category 2". Violation of time duration $f < 5 \text{ Hz}$.

1.118.3 8448.3 Current point A

Factory setting: 50000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency fA. There is a linear gradient between current limits A and B.

1.118.4 8448.4 Frequency point B

Factory setting: 10000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency fB.

1.118.5 8448.5 Current point B

Factory setting: 80000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency fB. There is a linear gradient between current limits B and C.

1.118.6 8448.6 Frequency point C

Factory setting: 25000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency fC.

1.118.7 8448.7 Current point C

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency fC. There is a linear gradient between current limits C and D.

1.118.8 8448.8 Frequency point D

Factory setting: 50000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency f_D .

1.118.9 8448.9 Current point D

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency f_D . There is a linear gradient between current limits D and E.

1.118.10 8448.10 Frequency point E

Factory setting: 87000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency f_E .

1.118.11 8448.11 Current point E

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limit that is permitted with operating frequency f_E .

1.118.12 8448.15 Motor assignment

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Motor 1**
- **1= Motor 2**

This parameter is used to set the motor model to be calculated in parameter set 1:

- Motor 1: The motor of parameter set 1 is monitored with the settings of index 8848.
- Motor 2: The motor of parameter set 2 is monitored with the settings of index 8848.

1.118.13 8448.16 Motor started up

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

Motor started up

1.118.14 8448.20 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Current limit of Ex protection function category 2 – active

If the motor is operated too long outside the operating range permitted for continuous operation, the current is limited to the permitted value. Bit 0 indicates this limitation.

1.119 8449 Ex protection function category 2 – data 2

The inverter allows for implementing monitoring for category 2.

This function can be activated in any operating mode with a motor (no group operation!).

For this purpose, 5 frequency points are defined and a maximum current is assigned to each point. The current must be permanently below the characteristic curve defined by the points. This area can be left briefly (Ixt 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 ex protection function category 2". "Inverter too large" will be issued.

For motors from SEW-EURODRIVE, the points are loaded during startup. For third party motors, these points must be entered manually.

The following always applies:

- Frequency A < frequency B < frequency C < frequency D < frequency E
- Current limit A < current limit B < 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.

1.119.1 8449.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- **1= On**
- Off: No frequency-dependent current monitoring.
- On: Frequency-dependent current monitoring.

1.119.2 8449.2 Frequency point A

Factory setting: 5000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 60000

Value for minimum operating frequency f_A . The operation time with operating frequency A is 60 seconds regardless of the current value. After expiry of this time, the inverter switches off and issues fault 52.5 "Error messages of Ex protection function category 2". Violation of time duration $f < 5 \text{ Hz}$ ".

1.119.3 8449.3 Current point A

Factory setting: 50000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency f_A . There is a linear gradient between current limits A and B.

1.119.4 8449.4 Frequency point B

Factory setting: 10000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency f_B .

1.119.5 8449.5 Current point B

Factory setting: 80000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency f_B . There is a linear gradient between current limits B and C.

1.119.6 8449.6 Frequency point C

Factory setting: 25000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency f_C .

1.119.7 8449.7 Current point C

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency f_C . There is a linear gradient between current limits C and D.

1.119.8 8449.8 Frequency point D

Factory setting: 50000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency f_D .

1.119.9 8449.9 Current point D

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limitation that is permitted with operating frequency f_D . There is a linear gradient between current limits D and E.

1.119.10 8449.10 Frequency point E

Factory setting: 87000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 5000 to 104000

Value for operating frequency fE.

1.119.11 8449.11 Current point E

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 0 to 150000

Current limit that is permitted with operating frequency fE.

1.119.12 8449.15 Motor assignment

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Motor 1**
- 1= Motor 2

This parameter is used to set the motor model to be calculated in parameter set 1:

- Motor 1: The motor of parameter set 1 is monitored with the settings of index 8848.
- Motor 2: The motor of parameter set 2 is monitored with the settings of index 8848.

1.119.13 8449.16 Motor started up

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

Motor started up

1.119.14 8449.20 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Current limit of Ex protection function category 2 – active

If the motor is operated too long outside the operating range permitted for continuous operation, the current is limited to the permitted value. Bit 0 indicates this limitation.

1.120 8450 Ex protection function category 2

Ex protection function category 2

1.120.1 8450.1 Status bits – current parameter set

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Current limit of Ex protection function category 2 – active

Status bits of the currently active parameter set.

1.121 8455 EtherCAT®/SBusPLUS

EtherCAT®/SBusPLUS

1.121.1 8455.1 Baud rate

Factory setting: 0

Unit: Baud

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Current EtherCAT®/SBusPLUS baud rate.

1.121.2 8455.2 Address

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Current EtherCAT®/SBusPLUS address.

1.121.3 8455.3 Timeout

Factory setting: 500
 Unit: ms
 Data type: Int32
 Data length: 1
 Resolution: 10
 Range of values: 0 to 650000
 EtherCAT®/SBusPLUS timeout time.

1.121.4 8455.4 Device ID

Factory setting: 0
 Unit:
 Data type: UInt32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 65535
 Device ID that can be set using rotary switches S1 and S2 on the front of the device.

1.121.5 8455.5 Status

Factory setting:
 Data type: Enum
 Data length: 1
 Range of values:

- **0= Startup**
- 1= Not connected
- 2= Connected
- 3= Timeout

 Status

1.122 8456 EtherCAT®/SBusPLUS diagnostics

EtherCAT®/SBusPLUS diagnostics

1.122.1 8456.1 Port A – Invalid frame counter

Factory setting: 0
 Unit:
 Data type: UInt32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 255
 Port A – Invalid frame counter

1.122.2 8456.2 Port A – RX error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 255
Port A – RX error counter

1.122.3 8456.3 Port B – Invalid frame counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 255
Port B – Invalid frame counter

1.122.4 8456.4 Port B - RX error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 255
Port B – RX error counter

1.122.5 8456.5 Port A – Forwarded error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 255
Port A – Forwarded error counter

1.122.6 8456.6 Port B – Forwarded error counter

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1

Resolution: 1
 Range of values: 0 to 255
 Port B – Forwarded error counter

1.122.7 8456.7 Processing unit error counter

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 255
 Processing unit error counter

1.122.8 8456.8 Port A – Lost link count

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 255
 Port A – Lost link count

1.122.9 8456.9 Port B – Lost link count

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 255
 Port B – Lost link count

1.122.10 8456.10 Slave controller revision

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 255
 Slave controller revision

1.122.11 8456.11 Slave controller build

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 65535
Slave controller build

1.122.12 8456.12 AIControl

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
AIControl

1.122.13 8456.13 AIStatus

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
AIStatus

1.122.14 8456.14 AIStatusCode

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1
Resolution: 1
Range of values: 0 to 4294967295
AIStatusCode

1.122.15 8456.18 EEPROM status

Factory setting: 0
Unit:
Data type: Uint32
Data length: 1

Resolution: 1
 Range of values: 0 to 4294967295
 EEPROM status

1.122.16 8456.19 "RUN" status LED

Factory setting: 0
 Unit:
 Data type: Uint32 (fill level array)
 Data length: 20
 Resolution: 1
 Range of values: 0 to 4294967295
 Read "RUN" status LED.

1.122.17 8456.20 "ERROR" status LED

Factory setting: 0
 Unit:
 Data type: Uint32 (fill level array)
 Data length: 20
 Resolution: 1
 Range of values: 0 to 4294967295
 Read "ERROR" status LED.

1.122.18 8456.21 1 ms task counter

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 4294967295
 1 ms task counter

1.122.19 8456.22 Current cycle time of main task

Factory setting: 0
 Unit:
 Data type: Uint32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 4294967295
 Current cycle time of the main task

1.122.20 8456.23 Maximum cycle time of main task

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 65535

Maximum cycle time of the main task

1.123 8480 FPGA registers

FPGA registers

1.123.1 8480.54 FPGA part number power supply module

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

FPGA part number of the power supply module.

1.123.2 8480.57 FPGA compatibility ID power supply module

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Compatibility ID of the FPGA of the power supply module.

1.124 8495 Test module standby mode

Test module standby mode.

1.124.1 8495.1 Standby mode test flags

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI_n 24 V

- 1= DOut 24 V
- 2= DriveSafety encoder 12 V
- 3= EncResolverOne 24 V
- 4= EncResolverTwo 24 V
- 5= STOManCtrlDev 24 V
- 6= NvSnt
- 7= HvSnt

Standby mode test flags

1.125 8500 FCB selection

FCB selection

1.125.1 8500.1 Current FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> 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
- 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 DriveSafety

- 24= FCB 24
- 25= FCB 25 Motor parameter measurement
- 26= FCB 26 Stop at user limits

Indicates the currently active FCB.

1.125.2 8500.2 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= FCB 00 Standard
- 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
- 25= FCB 25 Motor parameter measurement
- 26= FCB 26 Stop at user limits

Status bits

1.125.3 8500.3 Activate FCB

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= FCB 00 Standard (-> FCB 02)**
- 1= FCB 01 Output stage inhibit
- 2= FCB 02 Stop default
- 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 limits

Activate FCB.

1.125.4 8500.4 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= FCB 00 Standard
- 1= FCB 01 Output stage inhibit
- 2= FCB 02 Stop default
- 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 limits

Control bits

1.125.5 8500.5 Active FCB source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= DI00
- **1= Standard FCB**
- 2= Control words or DI01 to DI0x
- 3= Activation via parameter
- 4= Manual mode
- 5= Parameter set changeover
- 6= Fixed setpoint processing
- 7= Fault response
- 8= Power supply monitoring
- 9= Safety option
- 10= Prepare restart
- 11= State control
- 12= Test manager

Name of the function unit of the firmware that has requested the current FCB.

1.126 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.

1.126.1 8501.1 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Release brake with inhibited output stage

Control bits

1.126.2 8501.2 Release brake with inhibited output stage – enable?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Yes: The control bit "Release brake with inhibited output stage" is evaluated.

If FCB 01 is active, an edge from 0 to 1 releases the brake. An edge from 1 to 0 applies the brake.

No: The control bit "Release brake with inhibited output stage" is not evaluated.

The brake will apply if the parameter is set to "No" and the output stage is inhibited.

1.127 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 for startup or for teach mode without higher-level controller.

1.127.1 8504.1 Function status

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Function status

1.127.2 8504.2 Supported functions

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Speed controlled manual mode
- 1= Position controlled manual mode
- 2= Load cycling
- 3= Cycle mode
- 4= Emergency mode – external encoder defective
- 16= Inhibit output stage
- 17= Brake activation
- 18= Reference travel

Bit-wise coding of the functions supported in manual mode.

1.127.3 8504.3 Timeout response

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 2= Application stop (with output stage inhibit)
- **3= Emergency stop (with output stage inhibit)**
- 4= Inhibit output stage

This parameter is used to set the response to a bus timeout during manual mode.

1.127.4 8504.4 Terminal evaluation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

This parameter is used to specify whether the programmable terminals are to be taken into account in manual mode.

- On: All programmable terminal functions (such as limit switches) are taken into account except for FCB activation.
- Off: All programmable terminal functions are not taken into account.

1.127.5 8504.5 Control word evaluation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

This parameter is used to specify whether the control word commands are to be taken into account in manual mode.

- On: All control word commands (such as limit switches) are taken into account except for FCB activation.
- Off: All control word commands are not taken into account.

1.127.6 8504.6 Jerk limitation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- **1= On**

Activates jerk limitation in manual mode. The jerk time application limit (8367.14) is used.

1.127.7 8504.7 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Speed controlled manual mode
- **1= Position controlled manual mode**

- 2= Load cycling
- 3= Cycle mode
- 4= Emergency mode – external encoder defective
- 16= Inhibit output stage
- 17= Brake activation
- 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).

1.127.8 8504.8 Setpoint velocity 1

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

This parameter specifies the setpoint velocity in user units when parameter set 1 is active. The setpoint velocity 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 velocity is overwritten with the value at the time when manual mode with positioning is initialized.

1.127.9 8504.9 Setpoint acceleration 1

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

This parameter specifies the setpoint acceleration in user units when parameter set 1 is active. It is used in all manual mode functions.

1.127.10 8504.10 Setpoint position 1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies the setpoint position in user units when parameter set 1 is active. The setpoint position is used in the manual mode function "positioning".

1.127.11 8504.11 Load cycling – position 11

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies load cycling position 1 in user units when parameter set 1 is active. Load cycling position 1 is used in the manual mode function "load cycling". This setting is only relevant if the actuator supports load cycling.

1.127.12 8504.12 Load cycling – position 12

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies load cycling position 2 in user units when parameter set 1 is active. Is used in the manual mode function "load cycling". This setting is only relevant if the actuator supports load cycling.

1.127.13 8504.13 Cycle function – travel path 1

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies the travel path in user units when parameter set 1 is active. Is used in the manual mode function "cycle mode".

1.127.14 8504.14 Cycle idle time

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 500 to 3000

This parameter specifies the idle time once a target position has been reached with active load cycling or cycle operation function.

- 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.

1.128 8506 FCB 06 Interpolated speed control

FCB 06 is used for cyclic speed setpoint input from higher-level controllers.

In multi-axis applications, a controller usually calculates a path profile for several drive axes. The axis receives only setpoints (position/speed/torque and torque limits/pre-control values/mass moment of inertia) which it has to follow directly. The axis limits the setpoints using the application limits. The course of the profile of the path curve is controlled by the controller.

The setpoint cycle of the controller usually does not correspond to the setpoint cycle of the axis (500 µs). If the axis were to "see" the same setpoint for several cycles, a step-shaped actual value would result. To prevent this from happening, the axis can interpolate intermediate values. To do so, the setpoint cycle of the controller has to be known.

1.128.1 8506.1 Precontrol values via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

The user additionally provides the acceleration precontrol value for the current speed setpoint. This allows for faster 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.

- Yes: The precontrol values are adopted.

Acceleration precontrol via "SetpointBuffer.Acceleration" (8376.34)

- No: The precontrol values are calculated based on the change of the speed setpoint.

1.128.2 8506.2 Mass moment of inertia via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

– Yes:

The mass moment of inertia of the setpoint buffer is used (index 8376.44).

The torque precontrol of the setpoint buffer is used (index 8376.54).

– No:

The mass moment of inertia taken into operation in the active drive train is used. Torque precontrol is disabled.

1.128.3 8376.41 External position controller setpoint via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No

- 1= Yes

– Yes: The correcting value of a higher-level position controller is switched to the speed controller via "correcting value of external position controller" (8376.61).

– No: No additional correcting value is used in the speed controller.

1.129 8508 FCB 08 Interpolated torque control

FCB 08 is used for cyclic torque setpoint input from from higher-level controllers.

This higher-level controller usually calculates a track profile for several drive axes. The axis then only receives a setpoint (position, speed, torque, torque limits, precontrol values, mass moment of inertia) that it has to follow.

The inverter limits the setpoints using the application limits. The course of the profile of the path curve is controlled by the controller.

The cycle in which the controller sends the setpoints to the axis does not usually correspond with the setpoint processing cycle of the inverter. If the inverter were to "see" the same controller setpoint for several cycles, a step-shaped actual torque value would result.

To prevent this from happening, the axis can calculate intermediate values (interpolate) if it knows the controller cycle. The application inverter can be set to different cycle times of higher-level controllers.

1.129.1 8508.1 Mass moment of inertia via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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

– Yes:

The mass moment of inertia of the setpoint buffer is used (index 8376.44).

The torque precontrol of the setpoint buffer is used (index 8376.54).

– No:

The mass moment of inertia taken into operation in the active drive train is used. Torque precontrol is disabled.

1.130 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 several positioning modes, which are described as follows:

Absolute positioning:

The position setpoint in user units is interpreted as an absolute target and is converted and executed in system units.

The travel range in system units is $\pm (2^{31} - 2)$. If this travel range is exceeded after conversion, the FCB issues an error.

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 target calculated in system units is outside the travel range of $\pm (2^{32} - 2)$, the FCB issues an error.

Modulo in positive direction with absolute position specification:

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 specification:

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 specification:

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 the drive is determined using the last setpoint position (= current actual position after activation without an "In position" signal) and the current setpoint position. This value is used to determine the shortest possible route and, therefore, the direction of rotation for positioning.

1.130.1 8509.1 Operating mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Absolute**
- 1= Relative
- 2= Modulo absolute – positive direction
- 3= Modulo absolute – negative direction
- 4= Modulo absolute – shortest distance
- 5= Absolute without referencing

– 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". "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 notation is -2^{31} to $+2^{31}-1$ in system units.

– 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". "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". "Position setpoint violation" is generated and the drive is stopped.

- Absolute without referencing: As for absolute but without checking whether the drive has been referenced.

1.130.2 8509.2 Use "feed enable" control bits?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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.

- Yes: Feed enable is used.
- No: Feed enable is not used.

1.130.3 8509.3 Use "accept position" control bit?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

A positioning process is to be started by the FCB only under certain conditions. This can be set using the user parameter "Accept position". 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.

– 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 (for example "+50") is not possible because the provided target position has not changed during the repeated positioning process.

1.130.4 8509.4 Lag error window 1

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

This parameter specifies from which lag error the drive signals a fault, parameter set 1.

1.130.5 8509.5 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Feed enable
- 1= Accept position

Control bits

1.130.6 8509.7 Limited jerk time

Factory setting: 0

Unit: ms

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

Limited jerk time

1.131 8510 FCB 10 Interpolated position control

FCB 10 is used for cyclic position setpoints from higher-level controllers.

In multi-axis applications, a higher-level controller usually calculates a track profile for several drive axes. The axis receives only setpoints (position/speed/torque and torque limits/precontrol values/mass moment of inertia) which it has to follow directly. The axis limits the setpoints using the application limits. The course of the profile of the path curve is controlled by the controller.

The setpoint cycle of the controller usually does not correspond to the setpoint cycle of the axis. If the axis were to "see" the same setpoint for several cycles, a step-shaped actual 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.

1.131.1 8510.1 Precontrol values via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

The user additionally provides the acceleration as speed precontrol and 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.

– Yes: The precontrol values of the setpoint buffer are used:

Speed precontrol via "SetpointBuffer.Velocity" (8376.14).

Acceleration precontrol via "SetpointBuffer.AccelerationPrecontrol" (8376.34).

– No:

The precontrol values are calculated internally based on the change of position.

1.131.2 8510.2 Mass moment of inertia via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 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

– Yes:

The mass moment of inertia of the setpoint buffer is used (index 8376.44).

The torque control of the setpoint buffer is used (index 8376.54).

– No:

The mass moment of inertia taken into operation in the active drive train is used. Torque precontrol is disabled.

1.131.3 8510.3 Mean filter time value

Factory setting: 500

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 500

Range of values: 500 to 30000

Setting of the filter time constant for interpolating position control.

1.131.4 8510.4 Lag error window 1

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

This parameter specifies from which lag error the drive signals a fault, parameter set 1.

1.132 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.

1.132.1 8512.1 Status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Requested
- 1= Search reference point
- 2= Go to home position
- 3= Referencing finished
- **4= Deactivated**

Status

1.132.2 8512.2 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 2= Reference cam

This parameter indicates the current reference travel status.

1.133 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.

1.133.1 8518.1 Procedure

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No method
- **1= With rotating motor**
- 2= With stopped motor

This parameter is used to set the method used for rotor position identification.

– None: – 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.

1.133.2 8518.2 Operating mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Deactivated
- **1= Manual**
- 2= Automatic

Mode

1.133.3 8518.3 Storage location

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No storage
- **1= Inverter**
- 2= Encoder

This parameter is used to set the storage location for the offset determined between rotor position and encoder.

– No storage: The value is not stored.

– Inverter: The value is stored in the inverter (index 8518.52).

- Encoders: The value is written to the encoder. Only possible for encoders with storage capability.

1.133.4 8518.4 Use fixed offset memory?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

Use fixed offset memory?

1.133.5 8518.5 Fixed offset

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Fixed offset

1.133.6 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

Range of values: 0 to 1000000

Injected measurement current with reference to nominal motor current

1.133.7 8518.7 Motor settling time

Factory setting: 5000000

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1000 to 60000000

Time until angle monitor has settled.

1.133.8 8518.40 Write control

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Inactive**
- 1= Write

Write control

1.133.9 8518.50 Write status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Not ready**
- 1= Ready
- 2= Saving in progress
- 3= Saving finished

Write status

1.133.10 8518.51 Encoder adjustment status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Inactive**
- 1= Current build-up
- 2= Wait 1
- 3= Rotate forward
- 4= Wait 2
- 5= Rotate reverse
- 6= Wait 3
- 7= Finished
- 8= Hardware limit switch positive
- 9= Hardware limit switch negative
- 10= Fault
- 11= Fault: Wrong encoder direction
- 12= Fault: Too many increments
- 13= Fault: Too few increments
- 14= Fault: No encoder movement
- 15= Fault: Hardware limit switches too close
- 16= Fault 1: Hardware limit switches
- 17= Fault 2: Hardware limit switches
- 18= Fault 3: Hardware limit switches

Encoder adjustment status

1.133.11 8518.52 Measured encoder offset

Factory setting: 0

Unit: $1/(2^{32})$ rev

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

Measured encoder offset

1.133.12 8518.53 Write position for absolute encoder

Factory setting: 0

Unit: 1/65536 rev

Data type: UInt32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Write position for absolute encoder

1.133.13 8518.54 Delta Y/Y0

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 100000

Delta Y/Y0

1.133.14 8518.55 Ldq

Factory setting: 0

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 200000

Ratio of series inductance and shunt inductance of the motor model

1.133.15 8518.56 Y0

Factory setting: 0

Unit: 1E-03 A/Vs

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Rotor position dependent part of the inverse complex inductance of the motor model

1.133.16 8518.57 Measurement current

Factory setting: 0

Unit: mA

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Measurement current

1.133.17 8518.58 Measurement current with reference to nominal motor current

Factory setting: 0

Unit: 1E-03%

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 1000000

Measurement current with reference to nominal motor current.

1.133.18 8518.59 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Incremental encoder calibrated

Status bits

1.134 8520 FCB 20 jog mode

FCB 20 is used for teach 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.

1.134.1 8520.1 Velocity setpoint via setpoint buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No**

- 1= Yes

– Yes: The velocity is specified by the setpoint buffer (8376.14). Another setpoint cannot be selected.

– No: Velocity setpoint 1 (8520.2/.3) or velocity setpoint 2 (8520.4/.5) is used. Parameter set 1.

1.134.2 8520.2 Velocity setpoint 11 – positive

Factory setting: 2000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Positive velocity setpoint 1 for jog mode, parameter set 1.

1.134.3 8520.3 Velocity setpoint 11 – negative

Factory setting: 2000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Negative velocity setpoint 1 for jog mode, parameter set 1.

1.134.4 8520.4 Velocity setpoint 12 – positive

Factory setting: 2000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Positive velocity setpoint 2 for jog mode, parameter set 1.

1.134.5 8520.5 Velocity setpoint 12 – negative

Factory setting: 2000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Negative velocity setpoint 2 for jog mode, parameter set 1.

1.134.6 8520.6 Profile values via profile value buffer?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No

- **1= Yes**

– Yes: The profile values used in jog mode are retrieved from the setpoint buffer (acceleration, deceleration, jerk time; index 8377.21/.31/.41).

– No: The profile values are retrieved from the parameters of FCB 20 (index 8520.7/.8/.9). Parameter set 1.

1.134.7 8520.7 Acceleration 1

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Acceleration setpoint for jog mode, parameter set 1.

1.134.8 8520.8 Deceleration 1

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Deceleration value for jog mode, parameter set 1.

1.134.9 8520.9 Jerk time 1

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2000

Jerk time for jog mode, parameter set 1.

1.134.10 8520.10 Lag error window 1

Factory setting: 65536

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 65536 to 2147483647

Maximum lag error for jog mode, parameter set 1.

1.134.11 8520.11 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Jog positive
- 1= Jog negative
- 2= Velocity setpoint 2

The control bits of these parameters are set by digital inputs and control words.

1.135 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 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 in positive direction compared to the set limit torques.
- The application inverter performs a check 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.

Please note: The application torque must be considered for calculating the test torque, e.g. hoist test "downward".

1.135.1 8521.1 Brake test mode

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **2= Bipolar torque**
- 3= Positive torque
- 4= Negative torque

– 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.

1.135.2 8521.3 Test torque

Factory setting: 1000

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

The test torque is the torque the inverter builds up during the test at the applied brake. Ideally, the brake maintains this torque without slipping.

1.135.3 8521.6 Test time

Factory setting: 1000

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100 to 5000

Setting of the brake test duration.

1.135.4 8521.8 Status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Measurement in progress
- 1= Measurement interrupted
- 2= Brake tested not OK
- 3= Brake tested OK

Status

1.135.5 8521.9 Logged torque

Factory setting: 0

Unit: 1E-01% nominal motor torque

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

This parameter indicates the torque present when the brake slips during the test. If the brake does not slip, the value remains 0.

1.136 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.

1.136.1 8525.1 Control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

Control word

1.136.2 8525.2 Perform only balance measurement?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

– 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.

1.136.3 8525.3 Motor temperature

Factory setting: 2000

Unit: 1E-2 °C

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -5000 to 15000

Motor temperature entry. The more precise the entered value, the more accurate will be the parameter measurement.

1.136.4 8525.4 Record raw data?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

"Record raw data" = "Yes" disables standard scope.

1.136.5 8525.49 Active control word

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 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

Control word that is applied when starting the measurement. The measurement is made with these settings.

1.136.6 8525.50 Measurement status

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **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.

1.136.7 8525.51 Time remaining

Factory setting: 0

Unit: s

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Time remaining until end of measurement.

1.136.8 8525.52 Stator resistance phase U

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: -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.

1.136.9 8525.53 Stator resistance phase V

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: -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.

1.136.10 8525.54 Stator resistance phase W

Factory setting: 0

Unit: Ohm

Data type: Float32

Data length: 1

Resolution: -

Range of values: -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.

1.136.11 8525.130 Rotor adjustment Kp

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 1000000

Rotor adjustment Kp

1.136.12 8525.131 Rotor adjustment Ki

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 1000000

Rotor adjustment Ki

1.136.13 8525.132 Rotor adjustment – current amplitude setting

Factory setting: 100000

Unit: 1E-03%

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 10000 to 1000000

Rotor adjustment – current amplitude setting

1.136.14 8525.133 Rotor adjustment – current amplitude display value

Factory setting: 0

Unit: mA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Rotor adjustment – current amplitude display value

1.137 8526 FCB 26 Stop at user limits

FCB 26 is used for stops at user 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.

1.137.1 8526.1 Position controlled?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No

- 1= Yes

– No: The drive controls the speed to "0".

– Yes: The drive is subject to position control.

1.137.2 8526.2 Control bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Stop with position control

Control bits

1.137.3 8526.3 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Stop with position control – active

Status bits

1.138 8550 Speed monitoring 1

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 index 8550.2 "Deceleration time 1" or 8551.2 "Deceleration time 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.

1.138.1 8550.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= Motor mode
- 2= Regenerator mode
- **3= Motor/regenerator mode**
- Off: No monitoring,
- Motor mode: Monitoring in motor operation.
- Generator mode: Monitoring in generator mode.
- Motor/regenerator 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.

1.138.2 8550.2 Delay time

Factory setting: 50

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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 monitoring responds.

1.138.3 8550.3 Reset time factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 10000

When the control output limit of the speed controller is reached, a counter for the delay time is incremented every millisecond. If the speed controller leaves its control limit before the delay time expires, the counter is decremented until "0" is reached. You can use this parameter to set a factor that specifies how fast the counter decrements when leaving the control output limit compared to the delay time. 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.

1.139 8551 Speed monitoring 2

The speed required by the setpoint can only be achieved if there is sufficient torque available to meet the load requirements. If the torque limit is reached, the application inverter assumes that the intended speed cannot be reached. Speed monitoring responds if this condition persists for the duration specified in index 8550.2 "Deceleration time 1" or 8551.2 "Deceleration time 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.

1.139.1 8551.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= Motor mode
- 2= Regenerator mode
- **3= Motor/regenerator mode**

– Off: No monitoring,

– Motor mode: Monitoring in motor operation.

– Generator mode: 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.

1.139.2 8551.2 Delay time

Factory setting: 50

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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 monitoring responds.

1.139.3 8551.3 Reset time factor

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 10000

When the control output limit of the speed controller is reached, a counter for the delay time is incremented every millisecond. If the speed controller leaves its control limit before the delay time expires, the counter is decremented until "0" is reached. You can use this parameter to set a factor that specifies how fast the counter decrements when leaving the control output limit compared to the delay time. 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.

1.140 8552 FCB 12 Reference travel data 1

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 are set using parameter "8552.1 Type".

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 section below. 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 can result in a reference position that varies by a motor revolution 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 velocity (reference velocity 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 parameter "8552.3 Go to home position". 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 homing position is set using parameter 8552.7 "Home position". The travel velocity to the home position is set using parameter 8552.10 "Homing velocity".

Note: When selecting "Referencing 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).

1.140.1 8552.1 Type

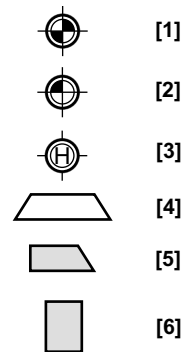
Factory setting:

Data type: Enum

Data length: 1

Range of values:

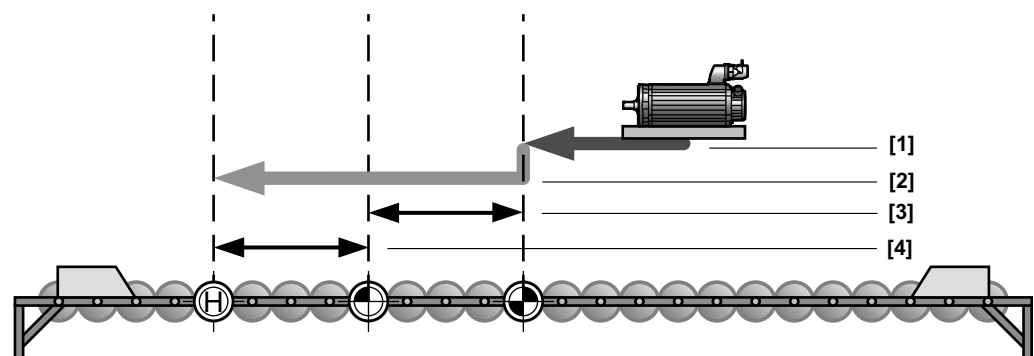
- 0= Deactivated
- 1= Zero pulse – negative direction
- 2= Reference cam – negative end
- 3= Reference cam – positive end
- 4= Positive limit switch
- 5= Negative limit switch
- 7= Reference cam flush – positive limit switch
- 8= Reference cam flush – negative limit switch
- **9= Referencing without reference travel**
- 10= Fixed stop positive
- 11= Fixed stop negative



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 8552.2 "Referencing to zero pulse" must be set to "Yes" for this type of reference travel.



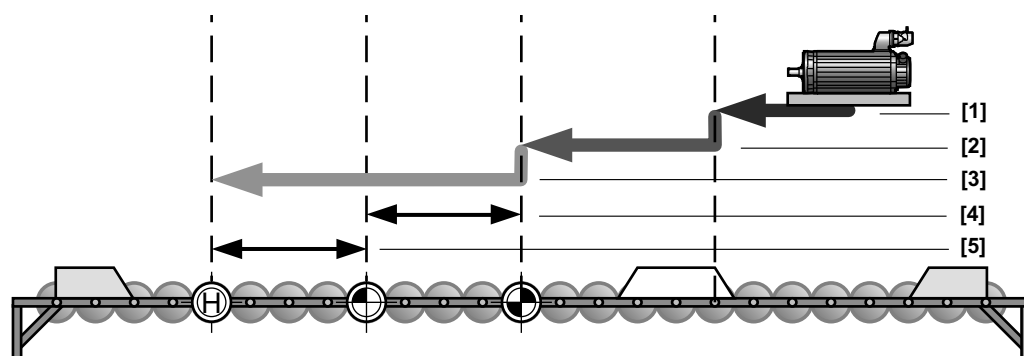
1240733707

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

The reference position is the first zero pulse left of the start position for reference travel. A reference cam is not required. Only parameter 8552.9 "Retraction speed" is used for reference travel.

- Negative end of reference cam

Parameter 8552.2 "Reference to zero pulse" is set to "Yes".



1240736139

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

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".

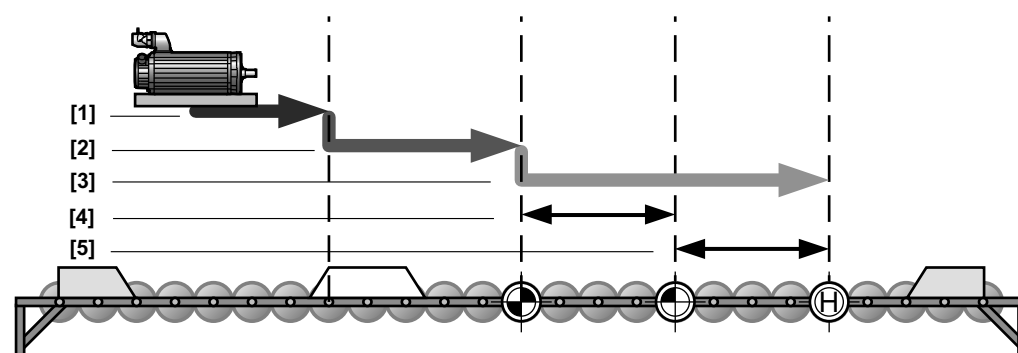
Reference travel starts with search velocity in negative direction of rotation up to the first rising edge of the reference cam. As soon as the reference cam is detected, the velocity changes to retraction speed.

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.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Positive end of reference cam

Parameter 8552.2 "Referencing to zero pulse" is set to "Yes".



1240741387

[1] 8552.8 Search velocity

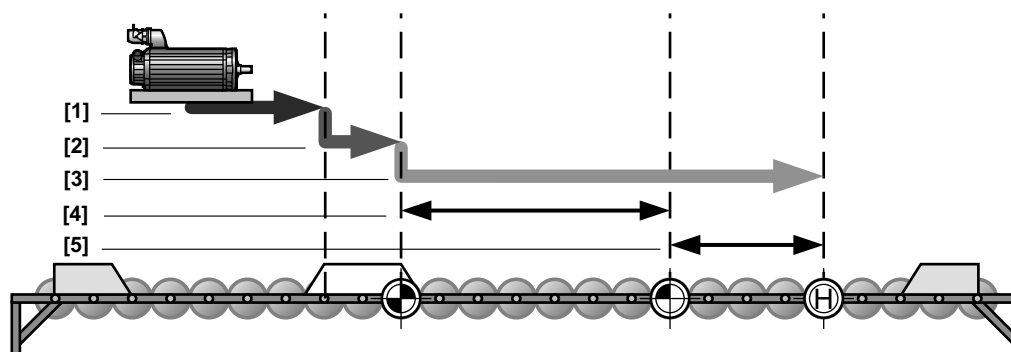
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

Parameter 8552.2 "Referencing to zero pulse" is set to "No".



1240743819

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

The reference position is the positive end of the reference cam or the first positive zero pulse after the end of the reference cam.

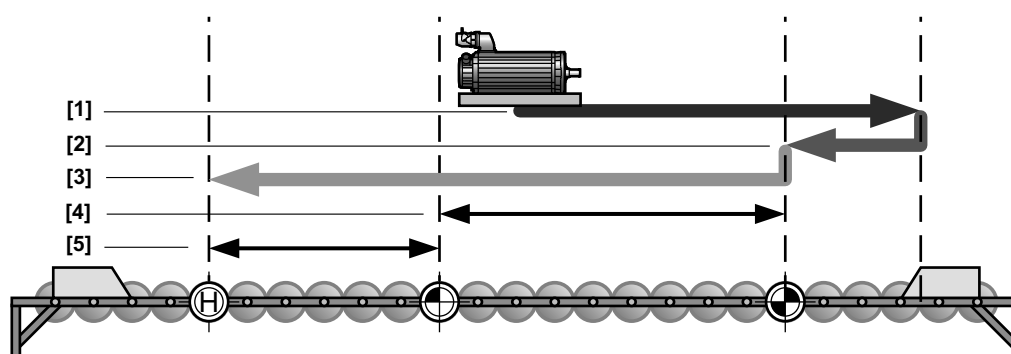
A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in positive direction of rotation. Search velocity is used up to the first rising edge of the reference cam. As soon as the reference cam is detected, the velocity 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.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Limit switch positive



1240746251

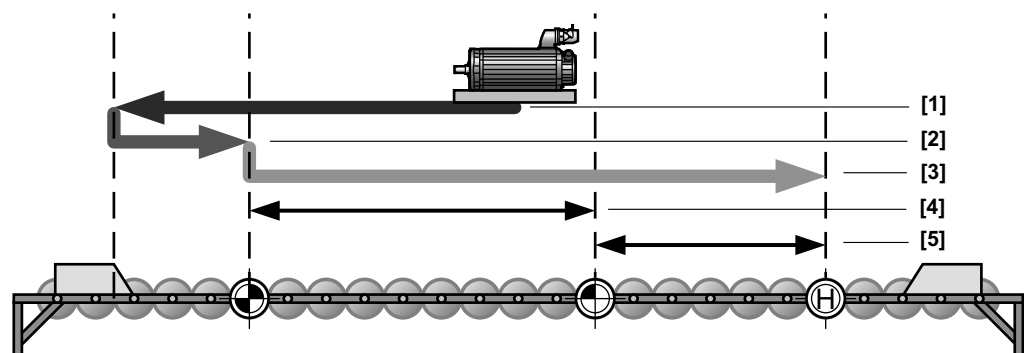
- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

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 velocity is used up to the falling edge of the positive limit switch, then clear velocity is used.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Limit switch negative



1240966283

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

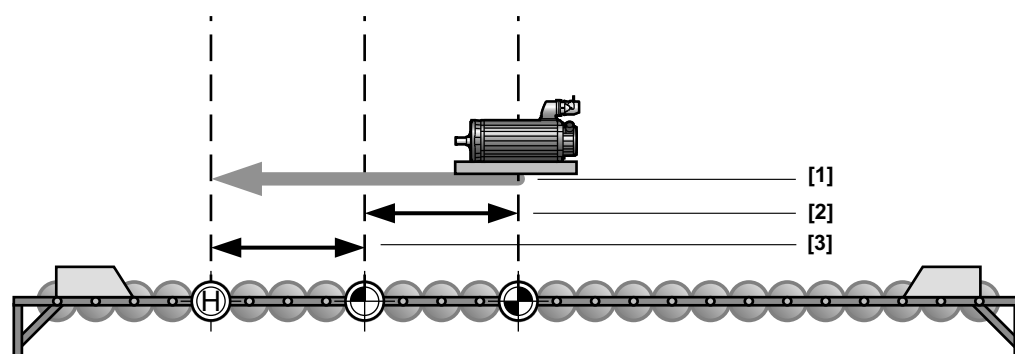
[5] 8552.7 Home position

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 velocity is used up to the falling edge of the negative limit switch, then clear velocity is used.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– No reference travel



1240968715

[1] 8552.10 Homing velocity

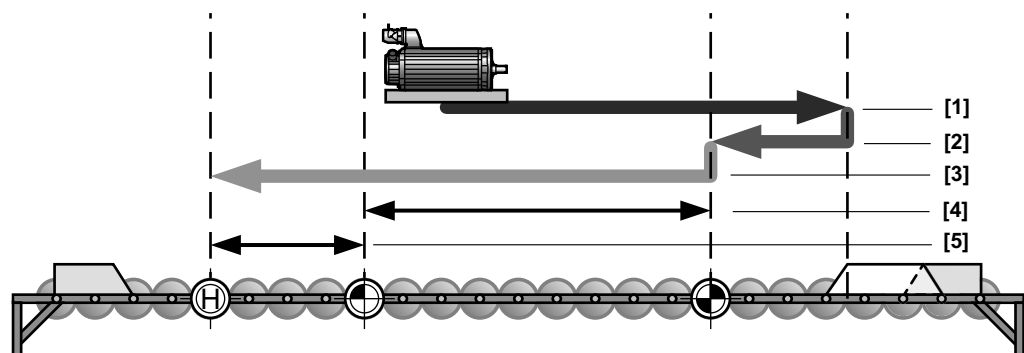
[2] 8552.5 Reference offset

[3] 8552.7 Home position

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. Doing so helps the machine operator to know where exactly the drive is located.

– Reference cam overlaps with positive limit switch

Parameter 8552.2 "Referencing to zero pulse" is set to "Yes".



1240971147

[1] 8552.8 Search velocity

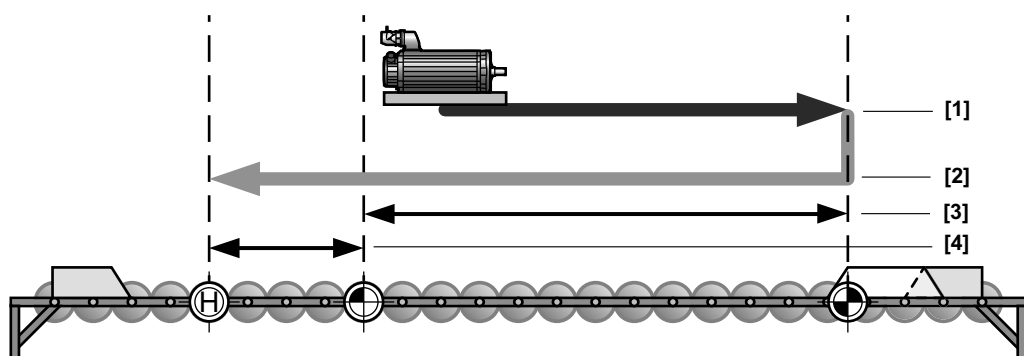
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

Parameter 8552.2 "Reference to zero pulse" is set to "No".



1240973579

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

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".

1 Parameter description

8552 FCB 12 Reference travel data 1

Reference travel starts in positive direction of rotation. Search velocity is used up to the first rising edge of the reference cam, then retraction speed is used. In contrast to the type "Negative end reference cam", the drive starts to the right and turns on the reference cam.

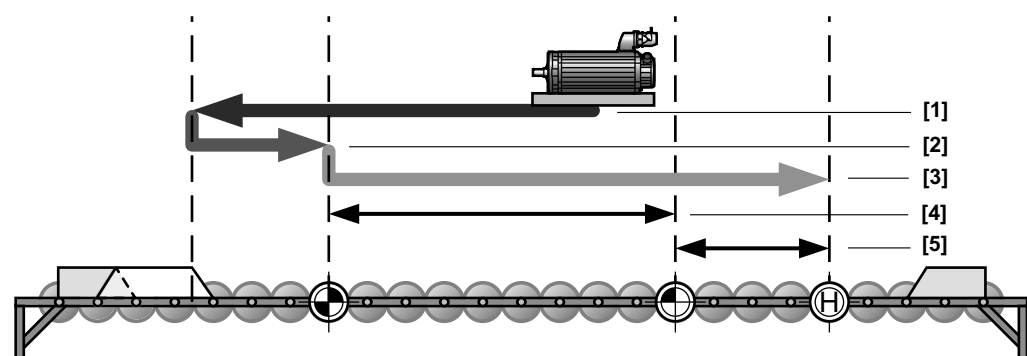
Depending on the setting of "referencing to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

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 contact is made with the hardware limit switch during reference travel.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Reference cam overlaps with negative limit switch

Parameter 8552.2 "Referencing to zero pulse" is set to "Yes".



1240976907

[1] 8552.8 Search velocity

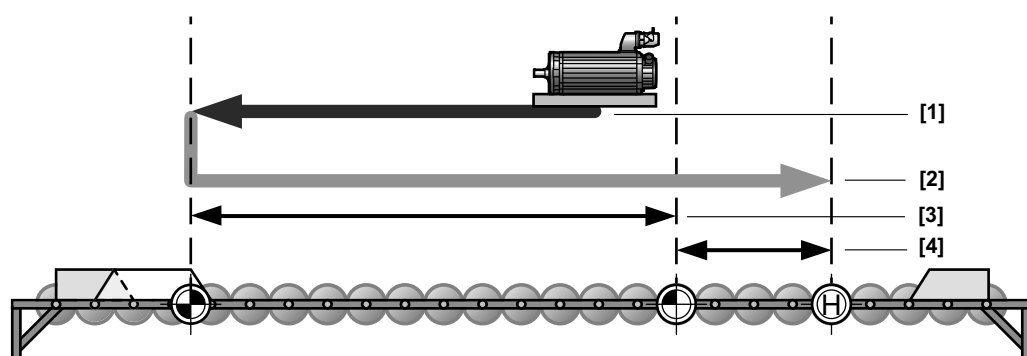
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

Parameter 8552.2 "Referencing to zero pulse" is set to "No".



1241043339

[1] 8552.8 Search velocity

[2] 8552.10 Homing velocity

[3] 8552.5 Reference offset

[4] 8552.7 Home position

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 velocity 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.

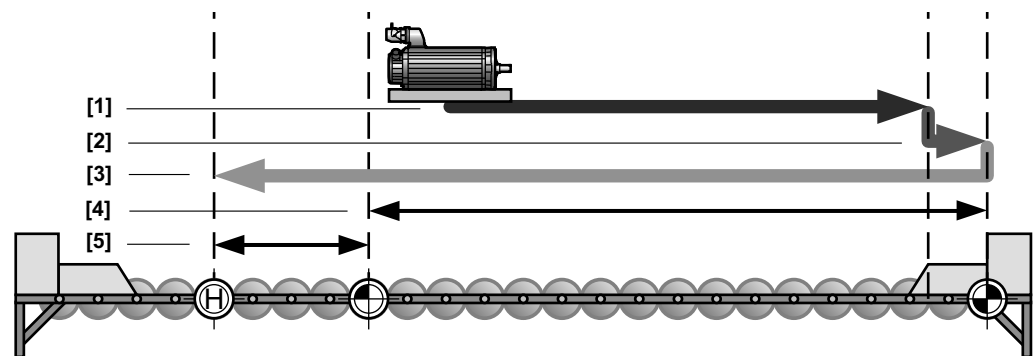
Depending on the setting of "referencing to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

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 contact is made with the hardware limit switch during reference travel.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Fixed stop positive

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Hardware limit switch".



1241045771

[1] 8552.8 Search velocity

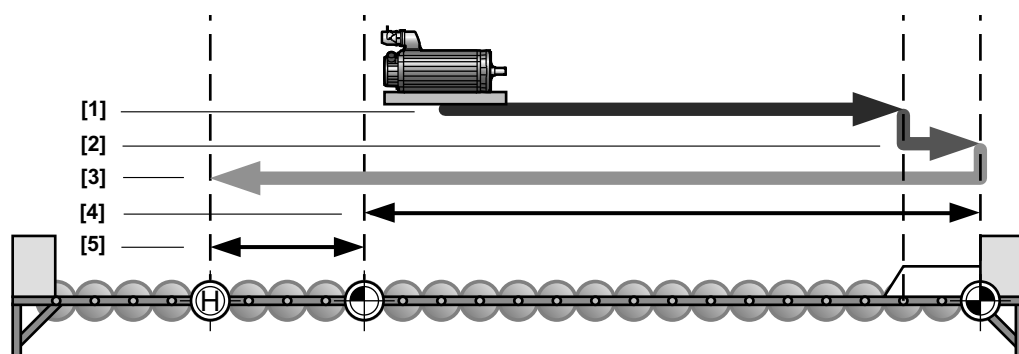
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Reference cam".



1241048203

[1] 8552.8 Search velocity

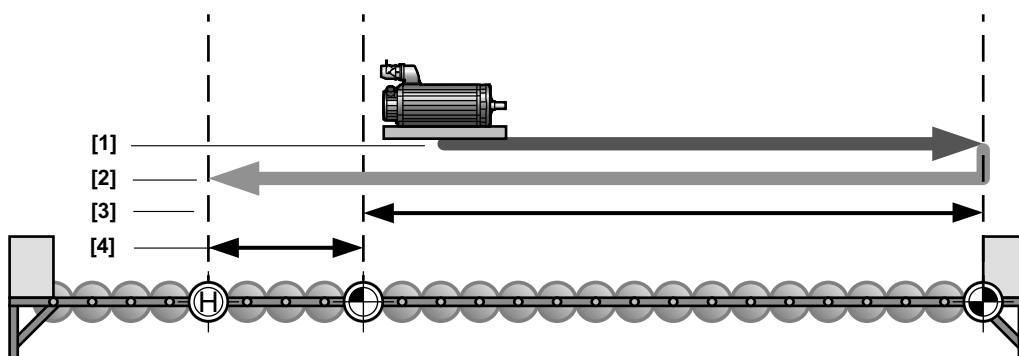
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "None".



1242546699

[1] 8552.9 Retraction speed

[2] 8552.10 Homing velocity

[3] 8552.5 Reference offset

[4] 8552.7 Home position

The reference position is the positive fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective velocity without any damage.

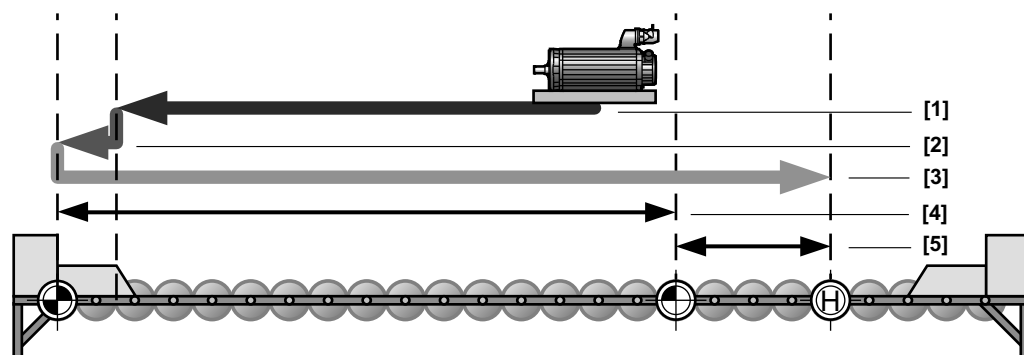
Reference travel starts in positive direction of rotation. If parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "None", reference travel will start with retraction speed.

With the setting "Hardware limit switch" or "Reference cam", reference travel starts with the search velocity and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter 8552.15 "Dwell time at the fixed stop" can be used to set the duration for which the torque (parameter 8552.14 "Torque limit") is maintained on the fixed stop until referencing.

– Fixed stop negative

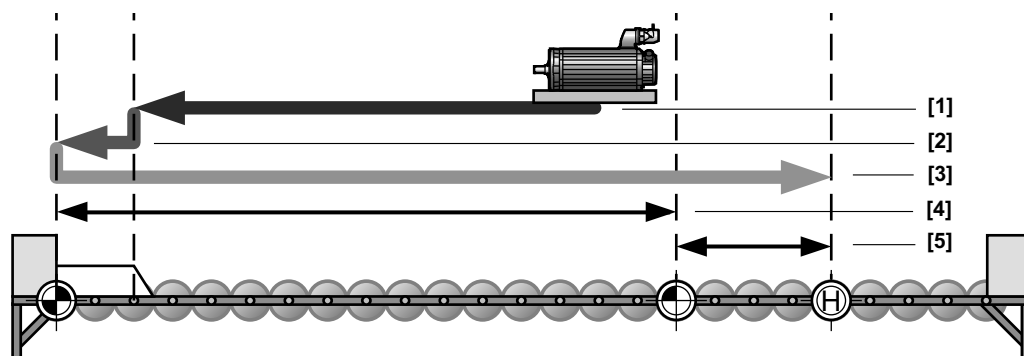
Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Hardware limit switch".



1242549131

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

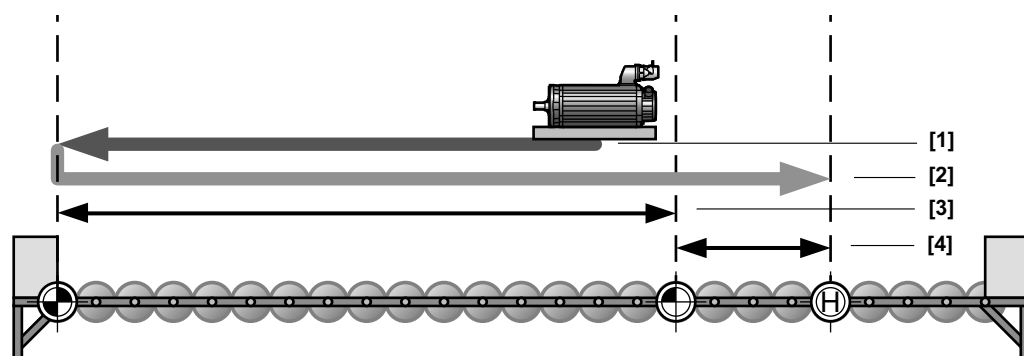
Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Reference cam".



1242551819

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "None".



1242554251

[1] 8552.9 Retraction speed

[2] 8552.10 Homing velocity

[3] 8552.5 Reference offset

[4] 8552.7 Home position

The reference position is the negative fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective velocity without any damage.

Reference travel starts in negative direction of rotation. If parameter 8552.4 "Hardware limit switches for velocity changeover" 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 velocity and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter 8552.15 "Dwell time at fixed stop" can be used to set the duration for which the torque (parameter 8552.14 "Torque limit") is maintained on the fixed stop until referencing.

1.140.2 8552.2 Reference to zero pulse?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

This parameter is used to set whether the zero pulse of the encoder is to be used as reference point. Doing so allows for compensating wear or inaccuracy of the reference cam.

– Yes: The zero pulse is used as reference point.

– No: The zero pulse is not used as reference point.

1.140.3 8552.3 Go to home position?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to set whether a certain position is to be approached after completed referencing.

– Yes: After completed reference travel, the position set in index 8557.7 is approached automatically.

– No: After completed reference travel, the drive remains at the reference point.

1.140.4 8552.4 Hardware limit switches for velocity changeover

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= None**
- 1= Hardware limit switch
- 2= Reference cam

This parameter specifies at which event the search velocity is to be changed over from "search velocity" (index 8552.8) to "clear velocity" (index 8552.9). This parameter is only relevant for "referencing to fixed stop".

- None: The search velocity is used up to the fixed stop.

– Hardware limit switch: The velocity is changed once the hardware limit switch is detected.

– Reference cam: The velocity changes to retraction speed when the reference cam is detected.

1.140.5 8552.5 Reference offset

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -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.

1.140.6 8552.7 Home position

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setting of the home position that is to be approached automatically after completed reference travel with active parameter 8552.3.

1.140.7 8552.8 Search velocity

Factory setting: 2000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Setting of the search velocity for reference travel.

1.140.8 8552.9 Retraction speed

Factory setting: 500000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Setting of the retraction speed (moving clear of the reference cam, limit switch, etc.) for reference travel.

1.140.9 8552.10 Homing velocity

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Setting of the velocity for approaching the home position after completed reference travel.

1.140.10 8552.11 Acceleration

Factory setting: 300000

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

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Setting of the acceleration for reference travel.

1.140.11 8552.12 Deceleration

Factory setting: 300000
Unit: 1E-02/(min*s) user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 2147483647
Setting of the deceleration for reference travel.

1.140.12 8552.13 Jerk time

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 2000
Setting of the jerk time for reference travel.

1.140.13 8552.14 Torque limit

Factory setting: 1000
Unit: 1E-01% nominal motor torque
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000
This parameter is used to limit the torque when referencing to fixed stop.

1.140.14 8552.15 Dwell time at fixed stop

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000
This parameter is used to set how long the fixed stop (torque limit index 8552.14 reached) remains hit until the drive signals "referenced".

1.141 8553 FCB 12 Reference travel data 2

General information about reference travel:

For applications using absolute positioning commands, you must define the reference point (machine zero). 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 are set using parameter "8552.1 Type".

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 section below. 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 can result in a reference position that varies by a motor revolution 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 velocity (reference velocity 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 parameter "8552.3 Go to home position". 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 homing position is set using parameter 8552.7 "Home position". The travel velocity to the home position is set using parameter 8552.10 "Homing velocity".

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).

1.141.1 8553.1 Type

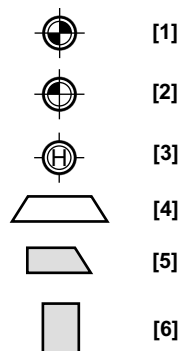
Factory setting:

Data type: Enum

Data length: 1

Range of values:

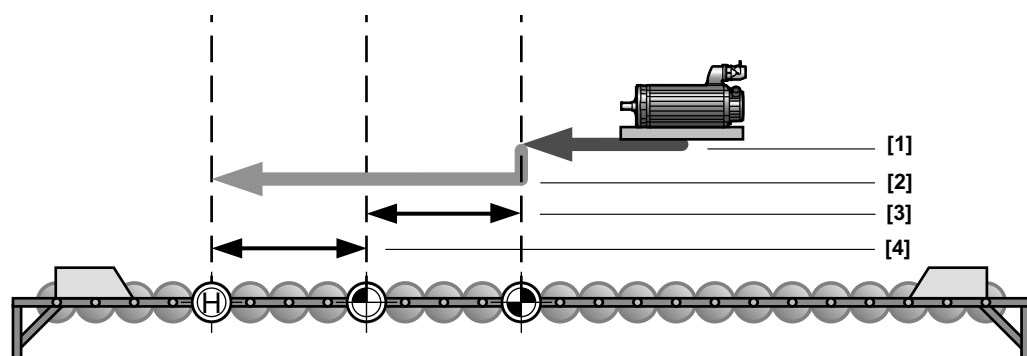
- 0= Deactivated
- 1= Zero pulse negative direction
- 2= Reference cam – negative end
- 3= Reference cam – positive end
- 4= Positive limit switch
- 5= Negative limit switch
- 7= Reference cam flush – positive limit switch
- 8= Reference cam flush – negative limit switch
- **9= Referencing without reference travel**
- 10= Fixed stop positive
- 11= Fixed stop negative



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 8552.2 "Reference to zero pulse" must be set to "Yes" for this type of reference travel.



1240733707

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

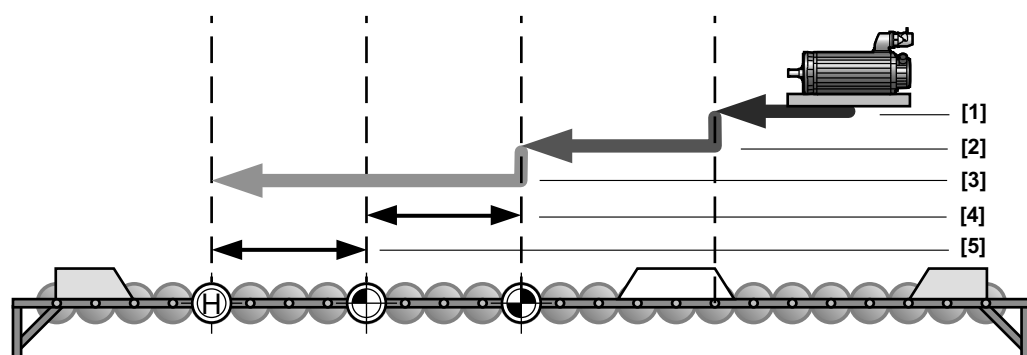
[4] 8552.5 Reference offset

[5] 8552.7 Home position

The reference position is the first zero pulse left of the start position of reference travel. A reference cam is not required. Only parameter 8552.9 "Retraction speed" is used for reference travel.

– Negative end of reference cam

Parameter 8552.2 "Reference to zero pulse" is set to "Yes".



1240736139

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

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".

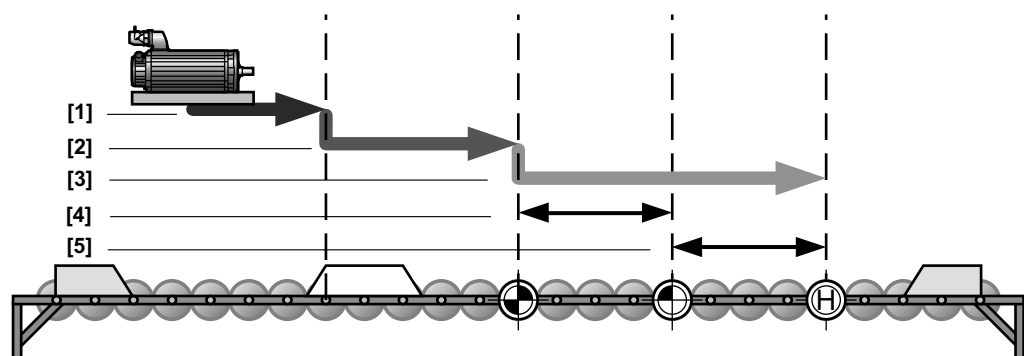
Reference travel starts with search velocity in negative direction of rotation up to the first rising edge of the reference cam. As soon as the reference cam is detected, the velocity changes to retraction speed.

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.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Positive end of reference cam

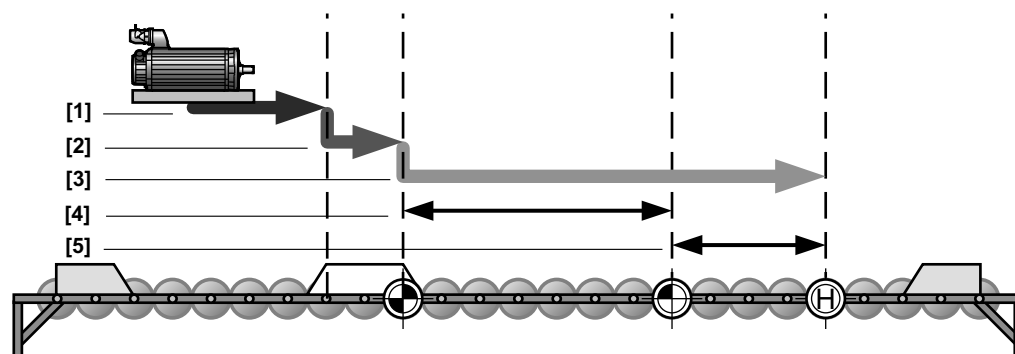
Parameter 8552.2 "Reference to zero pulse" is set to "Yes".



1240741387

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

Parameter 8552.2 "Reference to zero pulse" is set to "No".



1240743819

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

The reference position is the positive end of the reference cam or the first positive zero pulse after the end of the reference cam.

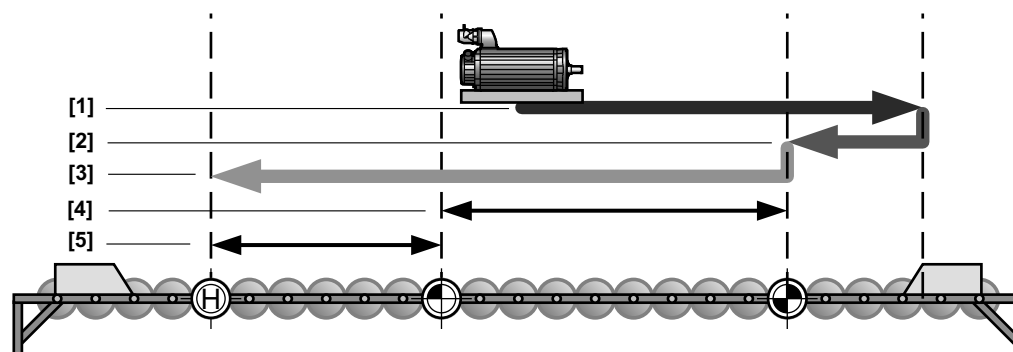
A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in positive direction of rotation. Search velocity is used up to the first rising edge of the reference cam. As soon as the reference cam is detected, the velocity 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.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Limit switch positive



1240746251

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

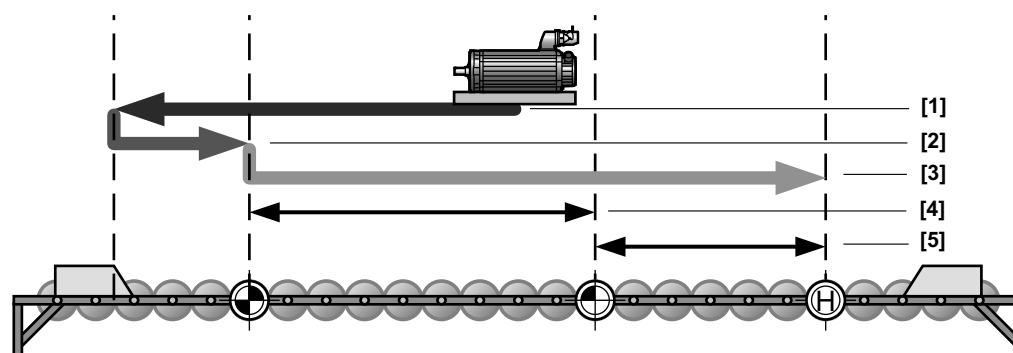
[5] 8552.7 Homing

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 velocity is used up to the falling edge of the positive limit switch, then clear velocity is used.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Limit switch negative



1240966283

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

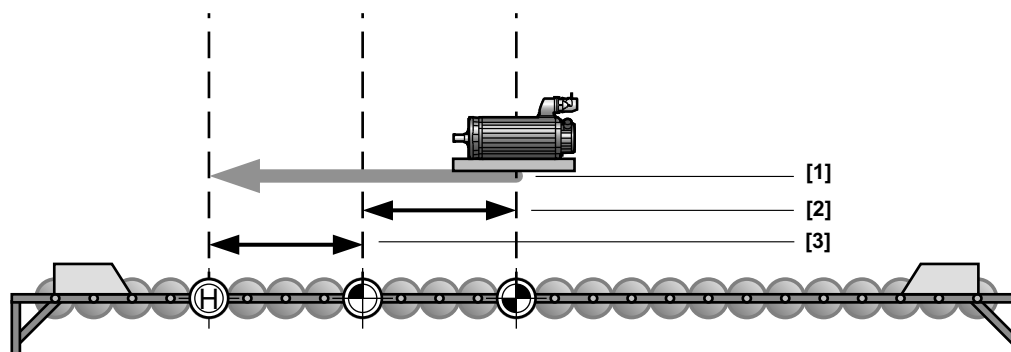
[5] 8552.7 Homing

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 velocity is used up to the falling edge of the negative limit switch, then clear velocity is used.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– No reference travel



1240968715

[1] 8552.10 Homing velocity

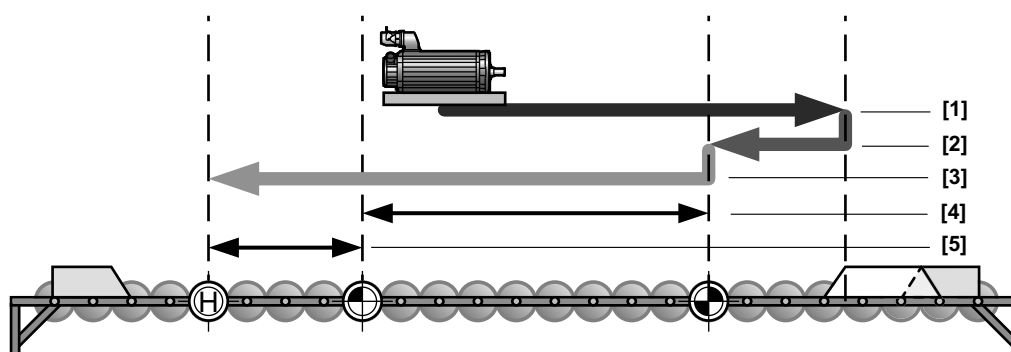
[2] 8552.5 Reference offset

[3] 8552.7 Home position

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 "zero" 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

Parameter 8552.2 "Reference to zero pulse" is set to "Yes".



1240971147

[1] 8552.8 Search velocity

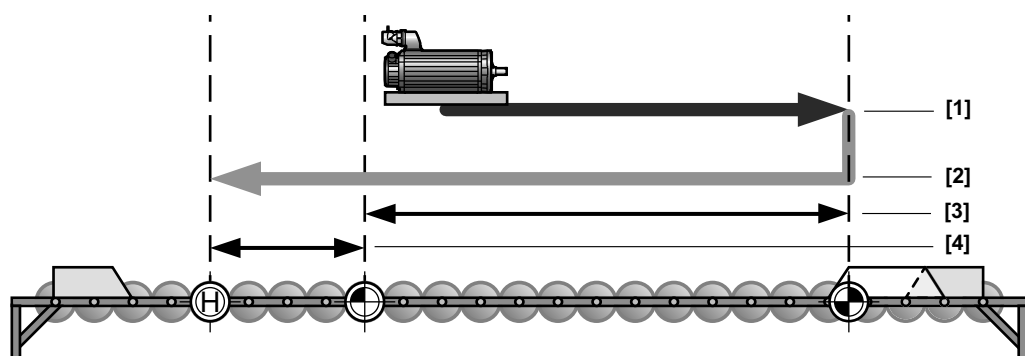
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

Parameter 8552.2 "Reference to zero pulse" is set to "No".



1240973579

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

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 velocity 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.

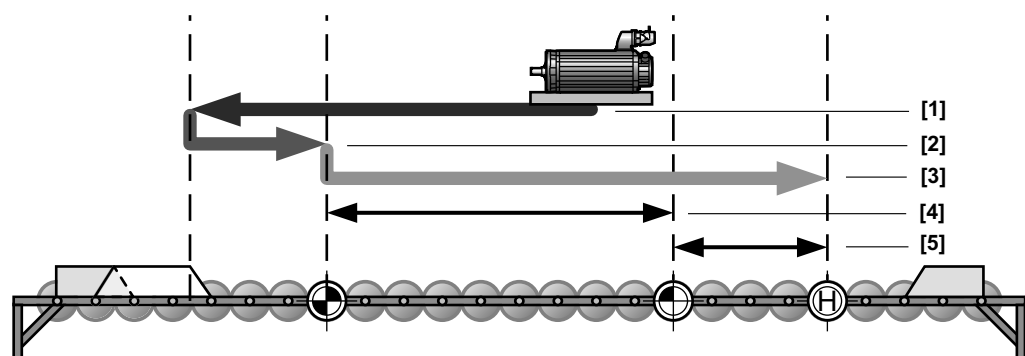
Depending on the setting of "reference to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

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.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

– Reference cam overlaps with negative limit switch

Parameter 8552.2 "Reference to zero pulse" is set to "Yes".

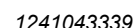


1240976907

[1] 8552.8 Search velocity

[2] 8552.9 Retraction speed

Parameter 8552.2 "Reference to zero pulse" is set to "No".



[4] 8552.7 Home position

A bit in control word 0 – 3 must be set to "Reference cam".

Reference travel starts in negative direction of rotation. Search velocity 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.

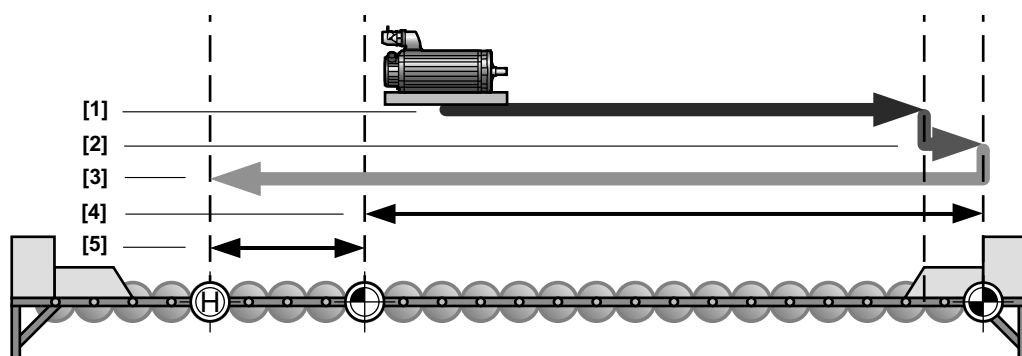
Depending on the setting of "reference to zero pulse", referencing is either performed to the falling edge of the reference cam or to the zero pulse after the falling edge of the reference cam.

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.

Parameter 8552.4 "Hardware limit switches for velocity changeover" is not relevant for this reference travel type.

- Fixed stop positive

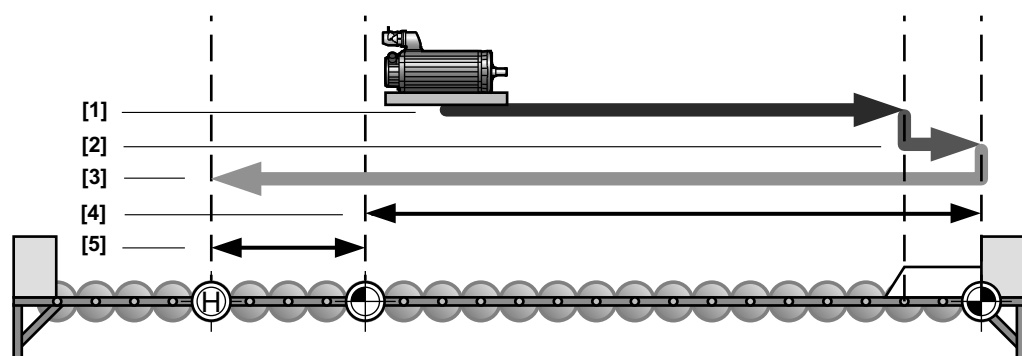
Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Hardware limit switch".



1241045771

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

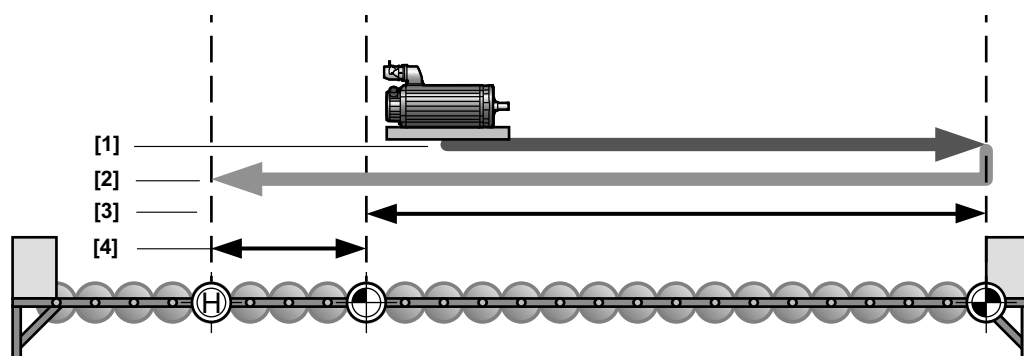
Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Reference cam".



1241048203

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "None".



1242546699

[1] 8552.9 Retraction speed

[2] 8552.10 Homing velocity

[3] 8552.5 Reference offset

[4] 8552.7 Home position

The reference position is the positive fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective velocity without any damage.

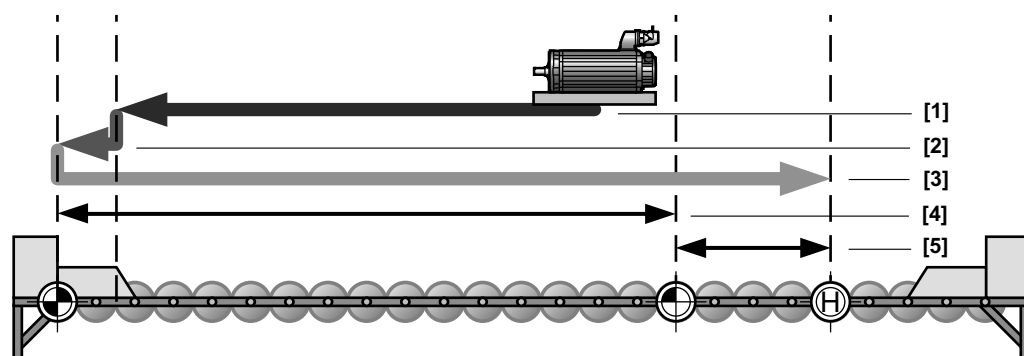
Reference travel starts in positive direction of rotation. If parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "None", reference travel will start with retraction speed.

With the setting "Hardware limit switch" or "Reference cam", reference travel starts with the search velocity and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter 8552.15 "Dwell time at fixed stop" can be used to set the duration for which the torque (parameter 8552.14 "Torque limit") is maintained on the fixed stop until referencing.

– Fixed stop negative

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Hardware limit switch".



1242549131

[1] 8552.8 Search velocity

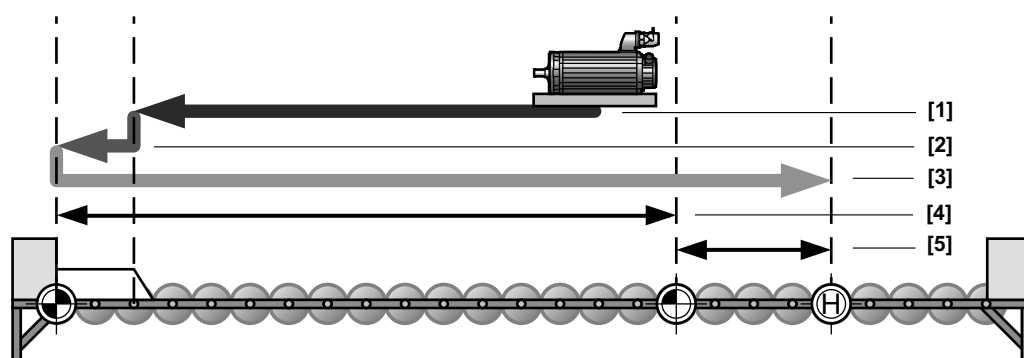
[2] 8552.9 Retraction speed

[3] 8552.10 Homing velocity

[4] 8552.5 Reference offset

[5] 8552.7 Home position

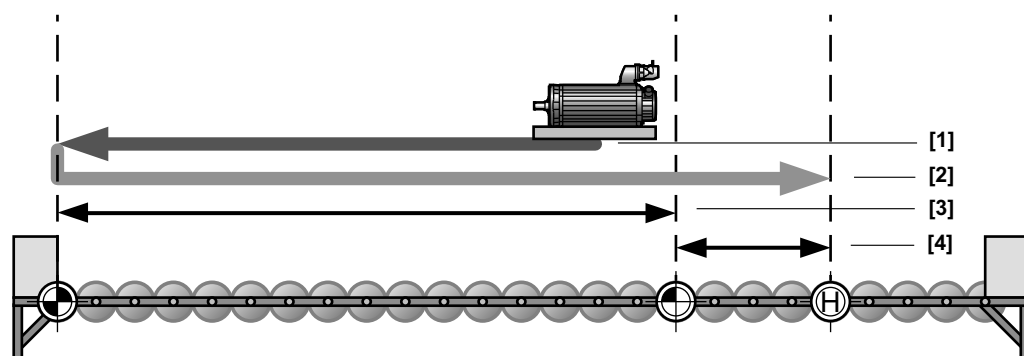
Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "Reference cam".



1242551819

- [1] 8552.8 Search velocity
- [2] 8552.9 Retraction speed
- [3] 8552.10 Homing velocity
- [4] 8552.5 Reference offset
- [5] 8552.7 Home position

Parameter 8552.4 "Hardware limit switches for velocity changeover" is set to "None".



1242554251

- [1] 8552.9 Retraction speed
- [2] 8552.10 Homing velocity
- [3] 8552.5 Reference offset
- [4] 8552.7 Home position

The reference position is the negative fixed stop. The machine must be designed so that the fixed stop withstands the impact of the respective velocity without any damage.

Reference travel starts in negative direction of rotation. If parameter 8552.4 "Hardware limit switches for velocity changeover" 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 velocity and reduces to retraction speed when hitting the hardware switch or reference cam.

Parameter 8552.15 "Dwell time at fixed stop" can be used to set the duration for which the torque (parameter 8552.14 "Torque limit") is maintained on the fixed stop until referencing.

1.141.2 8553.2 Reference to zero pulse?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to set whether the zero pulse of the encoder is to be used as reference point. Doing so allows for compensating wear or inaccuracy of the reference cam.

- Yes: The zero pulse is used as reference point.
- No: The zero pulse is not used as reference point.

1.141.3 8553.3 Go to home position?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to set whether a certain position is to be approached after completed referencing.

- Yes: After completed reference travel, the position set in index 8557.7 is approached automatically.
- No: After completed reference travel, the drive remains at the reference point.

1.141.4 8553.4 Hardware limit switches for velocity changeover

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= None**
- 1= Hardware limit switch
- 2= Reference cam

This parameter specifies at which event the search velocity is to be changed over from "search velocity" (index 8552.8) to "retraction speed" (index 8552.9). This parameter is only relevant for "referencing to fixed stop".

- None: The search velocity is used up to the fixed stop.
- Hardware limit switch: The velocity is changed once the hardware limit switch is detected.
- Reference cam: The velocity changes to retraction speed when the reference cam is detected.

1.141.5 8553.5 Reference offset

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter is used to define the reference offset. The offset is required if the cam is not located at the machine zero.

1.141.6 8553.7 Home position

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Setting of the home position that is to be approached automatically after completed reference travel with active parameter 8552.3.

1.141.7 8553.8 Search velocity

Factory setting: 2000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Setting of the search velocity for reference travel.

1.141.8 8553.9 Retraction speed

Factory setting: 500000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Setting of the retraction speed (moving clear of the reference cam, limit switch, etc.) for reference travel.

1.141.9 8553.10 Homing velocity

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 360000000
Setting of the velocity for approaching the home position after completed reference travel.

1.141.10 8553.11 Acceleration

Factory setting: 300000
Unit: 1E-02/(min*s) user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 2147483647
Setting of the acceleration for reference travel.

1.141.11 8553.12 Deceleration

Factory setting: 300000
Unit: 1E-02/(min*s) user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 2147483647
Setting of the deceleration for reference travel.

1.141.12 8553.13 Jerk time

Factory setting: 0
Unit: ms
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 2000
Setting of the jerk time for reference travel.

1.141.13 8553.14 Torque limit

Factory setting: 1000
Unit: 1E-01% nominal motor torque
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 10000
This parameter is used to limit the torque when referencing to fixed stop.

1.141.14 8553.15 Dwell time at fixed stop

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 10000

This parameter is used to set how long the fixed stop (torque limit index 8552.14 reached) remains hit until the drive signals "referenced".

1.142 8554 User unit position 1

Properties of the user unit "position" of parameter set 1.

1.142.1 8554.1 Numerator

Factory setting: 65536

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.142.2 8554.2 Denominator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.142.3 8554.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- 2= 1E-02

- 3= 1E-03

- 4= 1E-04

- 5= 1E-05

- 6= 1E-06

Power of ten resolution

1.142.4 8554.4 Unit

Factory setting: revolutions

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.143 8555 User unit position 2

Properties of the user unit "position" of parameter set 2.

1.143.1 8555.1 Numerator

Factory setting: 65536

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.143.2 8555.2 Denominator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.143.3 8555.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- **2= 1E-02**
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.143.4 8555.4 Unit

Factory setting: revolutions

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.144 8556 User unit position active

Properties of the user unit "position" of the active parameter set.

1.144.1 8556.1 Numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.144.2 8556.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.144.3 8556.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.144.4 8556.4 Unit

Factory setting:

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.145 8557 User unit velocity 1

Properties of the user unit "velocity" of parameter set 1.

1.145.1 8557.1 Numerator

Factory setting: 10000

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.145.2 8557.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.145.3 8557.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.145.4 8557.4 Unit

Factory setting: rev/min

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.146 8558 User unit velocity 2

Properties of the user unit "velocity" of parameter set 2.

1.146.1 8558.1 Numerator

Factory setting: 10000

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.146.2 8558.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.146.3 8558.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.146.4 8558.4 Unit

Factory setting: rev/min

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.147 8559 User unit velocity active

Properties of the user unit "velocity" of the currently active parameter set.

1.147.1 8559.1 Numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.147.2 8559.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.147.3 8559.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.147.4 8559.4 Unit

Factory setting:

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.148 8560 User unit acceleration 1

Properties of the user unit "acceleration" of parameter set 1.

1.148.1 8560.1 Numerator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.148.2 8560.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

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

1.148.3 8560.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= 1E-00
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.148.4 8560.4 Unit

Factory setting: rev/(min*s)

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.149 8561 User unit acceleration 2

Properties of the user unit "acceleration" of parameter set 2.

1.149.1 8561.1 Numerator

Factory setting: 100

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

Numerator

1.149.2 8561.2 Denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 2147483647

Denominator

1.149.3 8561.3 Resolution

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= 1E-00**
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04
- 5= 1E-05
- 6= 1E-06

Power of ten resolution

1.149.4 8561.4 Unit

Factory setting: rev/(min*s)
Data type: String8Bit (fill level array)
Data length: 17
Resolution:
Range of values:
Unit

1.150 8562 User unit acceleration active

Properties of the user unit "acceleration" of the currently active parameter set.

1.150.1 8562.1 Numerator

Factory setting: 1
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 1 to 2147483647
Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

1.150.2 8562.2 Denominator

Factory setting: 1
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 1 to 2147483647
Numerator and denominator can be used to determine the ratio of physical SI unit and user unit.

1.150.3 8562.3 Resolution

Factory setting:
Data type: Enum
Data length: 1
Range of values:

- **0= 1E-00**
- 1= 1E-01
- 2= 1E-02
- 3= 1E-03
- 4= 1E-04

- 5= 1E-05

- 6= 1E-06

Power of ten resolution

1.150.4 8562.4 Unit

Factory setting:

Data type: String8Bit (fill level array)

Data length: 17

Resolution:

Range of values:

Arbitrary unit defined by the user. This unit is also available under "PO configuration" and "Process values".

1.151 8563 Brake function 1

This parameter is used to activate and deactivate the brake function.

1.151.1 8563.1 Activation?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off

- **1= On**

This function is only effective in operating modes with encoder. For operating modes without encoder, this setting is ignored, which means the brake function is always active. This function determines whether the brake is to be applied or not when enable is revoked (enable = "0"). When the brake function is disabled, the brake is not applied when motor standstill is detected. The output stage remains enabled. The drive maintains the speed "0" (no position hold control!) with released brake until another FCB is activated.

– Yes: Brake function is active.

– No

1.152 8564 Brake function 2

This parameter is used to activate and deactivate the brake function.

1.152.1 8564.1 Activation?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This function is only effective in operating modes with encoder. For operating modes without encoder, this setting is ignored, which means the brake function is always active. This function determines whether the brake is to be activated when the enable is withdrawn (enable = "0"). When the brake function is disabled, the brake is not applied when motor standstill is detected. The output stage remains enabled. The drive maintains the speed "0" (no position hold control!) with released brake until another FCB is activated.

- Yes: Brake function active.
- No: Brake function is not active.

1.153 8565 Encoder assignment 1

Encoder assignment 1

1.153.1 8565.1 Connected encoders

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Encoder 1
- 1= Encoder 2

This parameter specifies the encoders connected to the inverter. Startup sets the parameter to the correct value.

1.153.2 8565.2 Actual speed source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No encoder
- **1= Encoder 1**
- 2= Encoder 2

This parameter is used to specify the encoder that acts as source for generating the actual speed. Startup sets the parameter to the correct value.

1.153.3 8565.3 Actual position source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No encoder
- **1= Encoder 1**
- 2= Encoder 2

This parameter is used to specify the encoder that acts as source for generating the actual position. Startup sets the parameter to the correct value.

1.154 8566 Encoder assignment 2

Encoder assignment 2

1.154.1 8566.1 Connected encoders

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Encoder 1
- 1= Encoder 2

This parameter specifies the encoders connected to the inverter. Startup sets the parameter to the correct value.

1.154.2 8566.2 Actual speed source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No encoder**
- 1= Encoder 1
- 2= Encoder 2

This parameter is used to specify the encoder that acts as source for generating the actual speed. Startup sets the parameter to the correct value.

1.154.3 8566.3 Actual position source

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No encoder**
- 1= Encoder 1
- 2= Encoder 2

This parameter is used to specify the encoder that acts as source for generating the actual position. Startup sets the parameter to the correct value.

1.155 8567 "Motor at standstill" signal data 1

"Motor at standstill" signal data 1

1.155.1 8567.1 Speed threshold

Factory setting: 100000

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100000 to 2000000

This parameter is used to set the speed (value) at the the motor shaft at which the application inverter signals a motor standstill.

1.155.2 8567.2 Filter time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.156 8568 "Motor at standstill" signal data 2

"Motor at standstill" signal data 2

1.156.1 8568.1 Speed threshold

Factory setting: 100000

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 100000 to 500000

This parameter is used to set the speed (value) at the motor shaft at which the application inverter signals a motor standstill.

1.156.2 8568.2 Filter time

Factory setting: 0

Unit: ms

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.157 8569 "Motor at standstill" signal

1.157.1 8569.1 Status bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Motor standstill – unfiltered
- 1= Motor standstill – filtered

This parameter is used to set the velocity (value) at which the application inverter signals a motor standstill.

1.158 8570.1 FCB 05 Speed control data 1

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.

1.158.1 8570.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

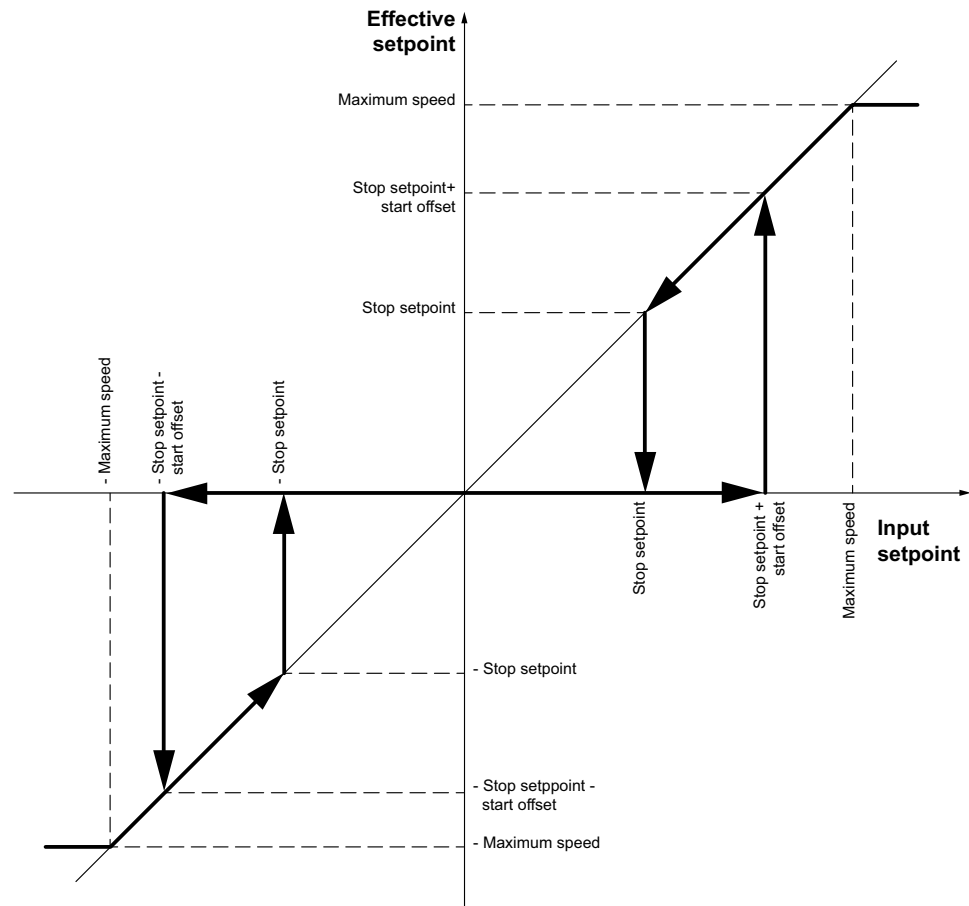
The specified speed setpoint is decisive when using the stop by setpoint function. The drive is only enabled if the speed setpoint is greater than the parameterized enable limit or if the setpoint stop function is disabled.

Enable setpoint = stop setpoint + start offset.

If the value of the speed setpoint is smaller than the stop setpoint, then the drive is stopped with the deceleration set in FCB "Speed control". If the brake function is activated, the brake will be applied at motor standstill and the output stage will be inhibited.

Observe the following special cases:

- When activating FCB "Speed control" when the stop by setpoint function is active, the drive will be stopped when the setpoint is smaller than the enable setpoint no matter whether the drive has been enabled by another FCB or not.
- If FCB "Speed control" is already active when the stop by setpoint function is activated, the drive will remain to be enabled when the setpoint is greater than the stop setpoint.
- Off: Stop by setpoint function deactivated.
- On: Stop by setpoint function activated.



16765965963

1.158.2 8570.2 Stop setpoint

Factory setting: 1600000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1600000 to 5000000

Setpoint of the stop function. If the speed setpoint value is smaller than the stop setpoint, the drive will be stopped.

1.158.3 8570.3 Start offset

Factory setting: 300000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 5000000

Start offset of the stop by setpoint function.

The drive is only enabled when the setpoint exceeds the enable setpoint = stop setpoint + start offset.

1.158.4 8570.10 Activation of speed skip function

Factory setting:

Data type: Enum

Data length: 1

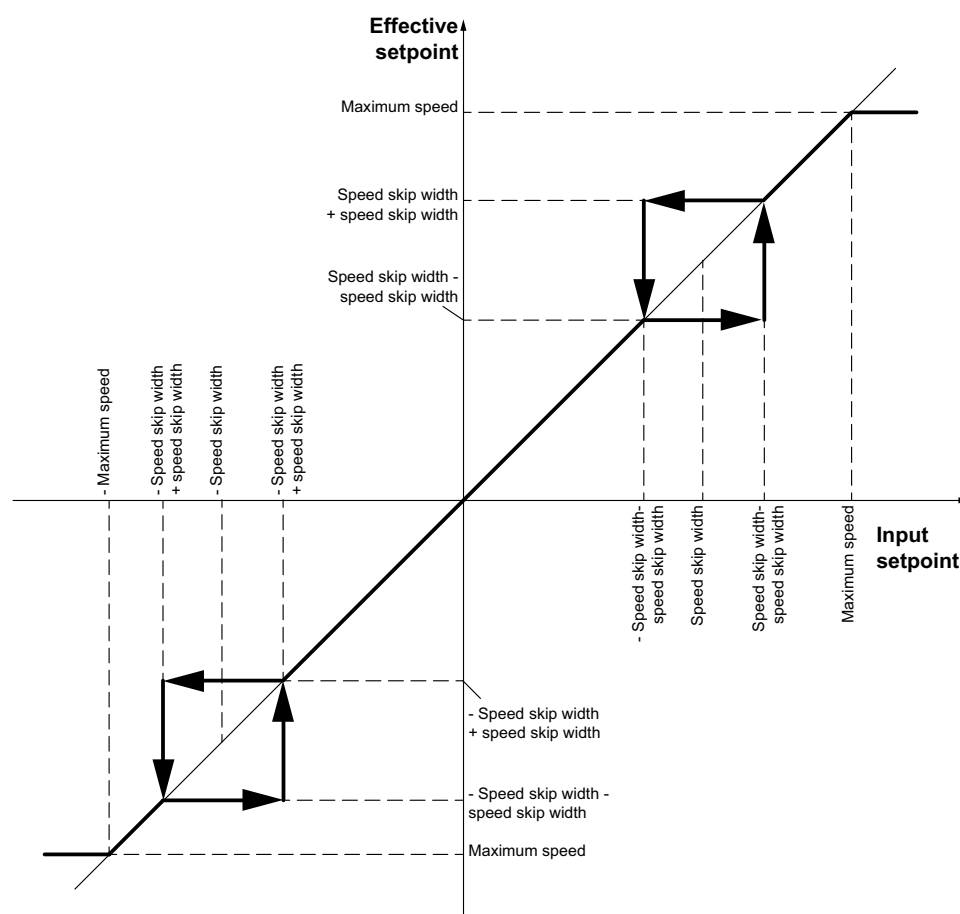
Range of values:

- **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.

– Off: No speed range is skipped.

– On: The speed skip center +/- speed skip bandwidth is skipped.



16765968395

1.158.5 8570.11 Speed – skip center

Factory setting: 15000000
Unit: 1E-4 /min user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 360000000
Speed skip function – resonance speed.

1.158.6 8570.12 Speed – skip width

Factory setting: 0
Unit: 1E-4 /min user unit
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 3000000
Speed skip function – speed skip hysteresis.

1.159 8571 FCB 05 Speed control data 2

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.

1.159.1 8571.1 Activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= Off
- 1= On

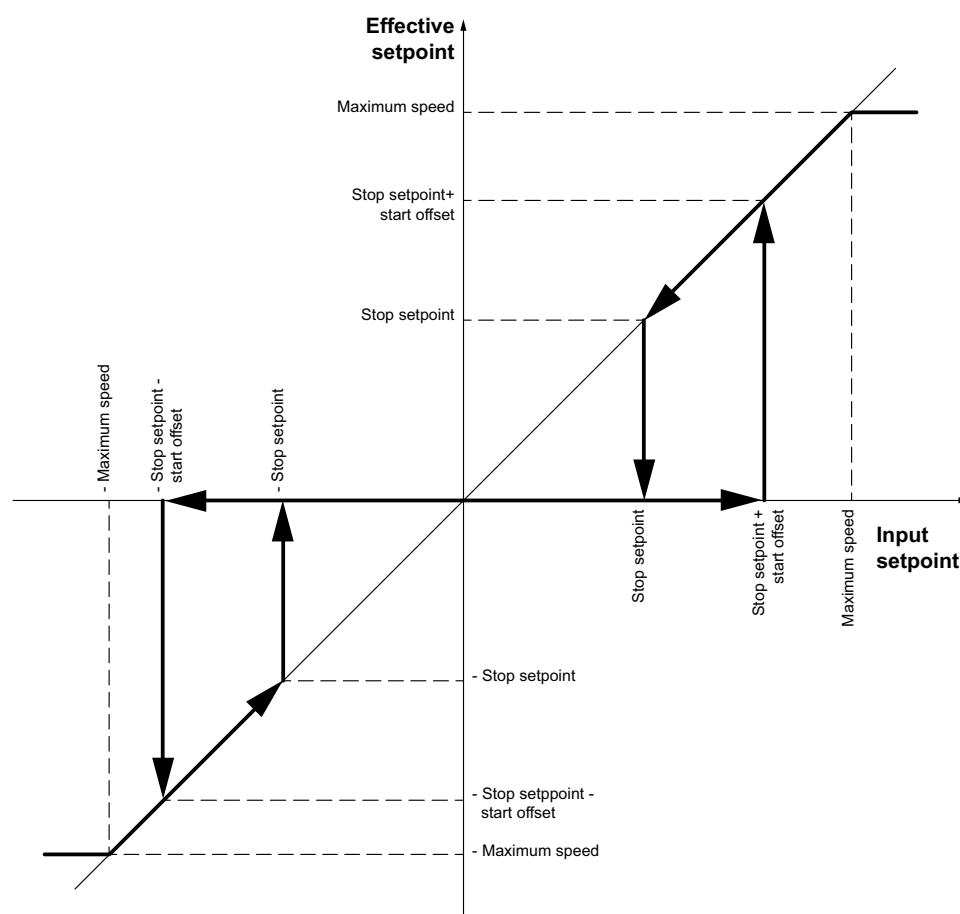
The specified speed setpoint is decisive when using the stop by setpoint function. The drive is only enabled if the speed setpoint is greater than the parameterized enable limit or if the stop by setpoint function is disabled.

Enable setpoint = stop setpoint + start offset.

If the value of the speed setpoint is smaller than the stop setpoint, then the drive is stopped with the deceleration set in FCB "Speed control". If the brake function is activated, the brake will be applied at motor standstill and the output stage will be inhibited.

Observe the following special cases:

- When activating FCB "Speed control" when the stop by setpoint function is active, the drive will be stopped when the setpoint is smaller than the enable setpoint no matter whether the drive has been enabled by another FCB or not.
- If FCB "Speed control" is already active when the stop by setpoint function is activated, the drive will remain to be enabled when the setpoint is greater than the stop setpoint.
- Off: Stop by setpoint function deactivated.
- On: Stop by setpoint function activated.



16765965963

1.159.2 8571.2 Stop setpoint

Factory setting: 1600000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1600000 to 5000000

Setpoint of the stop function. If the speed setpoint value is smaller than the stop setpoint, the drive will be stopped.

1.159.3 8571.3 Start offset

Factory setting: 300000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 5000000

Start offset of the stop by setpoint function.

The drive is only enabled when the setpoint exceeds the enable setpoint = stop setpoint + start offset.

1.159.4 8571.10 Activation of speed skip function

Factory setting:

Data type: Enum

Data length: 1

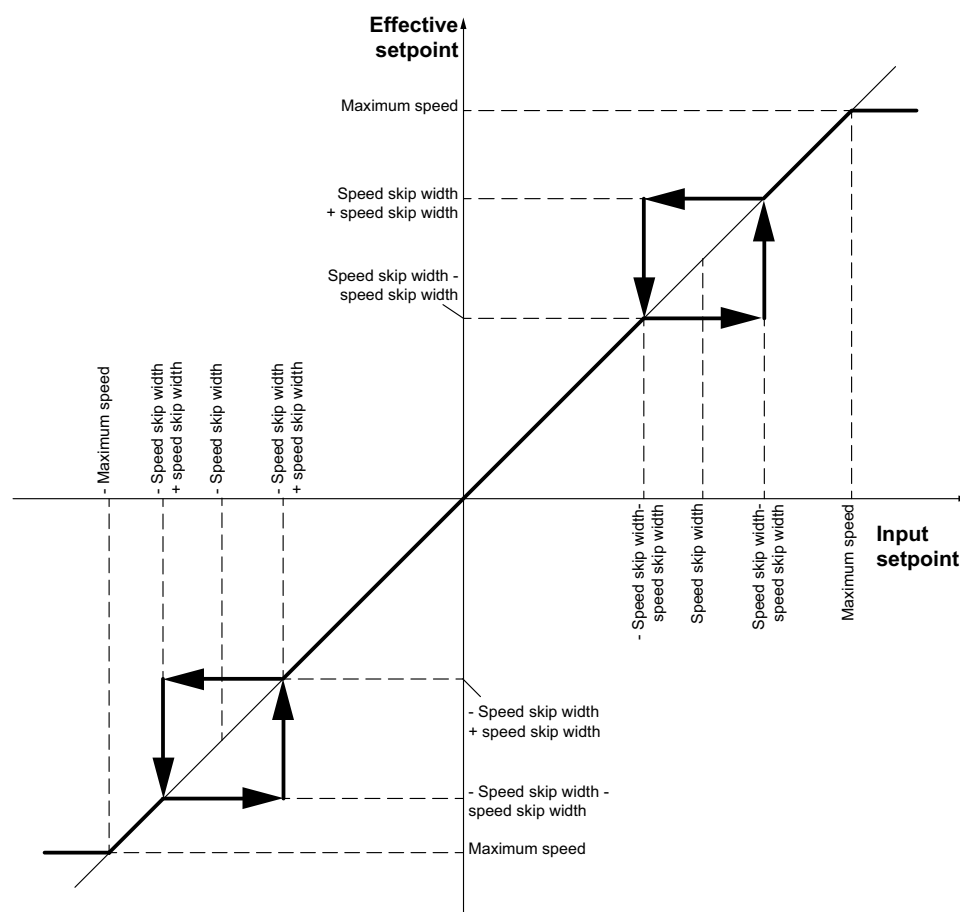
Range of values:

- 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.

– Off: No speed range is skipped.

– On: The speed skip center +/- speed skip bandwidth is skipped.



16765968395

1.159.5 8571.11 Speed – skip center

Factory setting: 15000000

Unit: 1E-4 /min user unit

Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 360000000
 Speed skip function – resonance speed.

1.159.6 8571.12 Speed – skip width

Factory setting: 0
 Unit: 1E-4 /min user unit
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: 0 to 3000000
 Speed skip function – speed skip hysteresis.

1.160 8572 Limit switch data 1

MOVI-C® allows for monitoring hardware limit switches depending on the selected parameter set. 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.

1.160.1 8572.1 Hardware limit switch hit response

Factory setting:
 Data type: Enum
 Data length: 1
 Range of values:

- 0= No response
- **3= Emergency stop (with output stage inhibit)**
- 53= Emergency stop (with output stage inhibit) with self-reset

Response to a hit hardware limit switch:

- No response
- Emergency stop (with output stage inhibit): The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop (with 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 limit switch.

1.160.2 8572.2 Software limit switch hit response

Factory setting:
 Data type: Enum
 Data length: 1

Range of values:

- 0= No response
- **3= Emergency stop (with output stage inhibit)**
- 53= Emergency stop (with output stage inhibit) with self-reset
- No response.
- Emergency stop (with output stage inhibit): The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop (with 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 error is automatically acknowledged and the drive out of the limit switch.

1.160.3 8572.3 Software limit switch negative monitoring

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

The application inverter allows for monitoring the position within two software limit switches. If a position outside the limit switches is specified, the drive does not move but the response set in index 8572.2 is performed.

Preliminary value description:

- On: The negative software limit switch is monitored.
- Off: The negative software limit switch is not monitored.

1.160.4 8572.4 Software limit switch negative

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies the position of the negative software limit switch.

1.160.5 8572.5 Software limit switch positive monitoring

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

The application inverter allows for monitoring the position within two software limit switches. If a position outside the limit switches is specified, the drive does not move but the response set in index 8572.2 is performed.

Preliminary value description:

- On: The positive SW limit switch is monitored.
- Off: The positive software limit switch is not monitored.

1.160.6 8572.6 Software limit switch positive

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies the position of the positive software limit switch.

1.161 8573 Limit switch data 2

MOVI-C® allows for monitoring hardware limit switches depending on the selected parameter set. 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.

1.161.1 8573.1 Hardware limit switch hit response

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- **3= Emergency stop (with output stage inhibit)**
- 53= Emergency stop (with output stage inhibit) with self-reset

Response to a hit hardware limit switch:

- No response
- Emergency stop (with output stage inhibit): The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop (with 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 limit switch.

1.161.2 8573.2 Software limit switch hit response

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- **3= Emergency stop (with output stage inhibit)**
- 53= Emergency stop (with output stage inhibit) with self-reset
- No response.
- Emergency stop (with output stage inhibit): The drive is decelerated at the emergency stop ramp, then the output stage is inhibited.
- Emergency stop (with 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 limit switch.

1.161.3 8573.3 Software limit switch negative monitoring

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

The application inverter allows for monitoring the position within two software limit switches. If a position outside the limit switch is specified, the drive does no move but the response set in index 8572.2 is performed.

Preliminary value description:

- On: The negative software limit switch is monitored.
- Off: The negative software limit switch is not monitored.

1.161.4 8573.4 Software limit switch negative

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies the position of the negative software limit switch.

1.161.5 8573.5 Software limit switch positive monitoring

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Off**
- 1= On

The application inverter allows for monitoring the position within two software limit switches. If a position outside the limit switch is specified, the drive does no move but the response set in index 8572.2 is performed.

Preliminary value description:

- On: The positive software limit switch is monitored.
- Off: The positive software limit switch is not monitored.

1.161.6 8573.6 Software limit switch positive

Factory setting: 0

Unit: 1/65536 rev user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

This parameter specifies the position of the positive software limit switch.

1.162 8576 Primary frequency input

Primary frequency input

1.162.1 8576.1 Input level

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Primary frequency input
Input level

1.162.2 8576.2 Maximum frequency

Factory setting: 10000000

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 1000

Range of values: 100000 to 120000000

Setting of the maximum input frequency. The maximum velocity (index 8576.4) is reached with the value set for this parameter.

1.162.3 8576.3 Determined frequency

Factory setting: 0

Unit: mHz

Data type: Int32

Data length: 1

Resolution: 100

Range of values: 0 to 2147483647

Display value: Indicates the frequency determined at the frequency input.

1.162.4 8576.4 Maximum velocity 1

Factory setting: 200000000

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Setting of the maximum velocity when parameter set 1 is active. The value set for this parameter is reached at maximum frequency (index 8576.2).

1.162.5 8576.5 Determined velocity setpoint

Factory setting: 0

Unit: 1E-4 /min user unit

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 360000000

Display value: Display value: Indicates the velocity setpoint calculated from the determined frequency.

1.163 8577 Cam switch

The purpose of a cam switch is to control actuators during a motion sequence or to control machine processes.

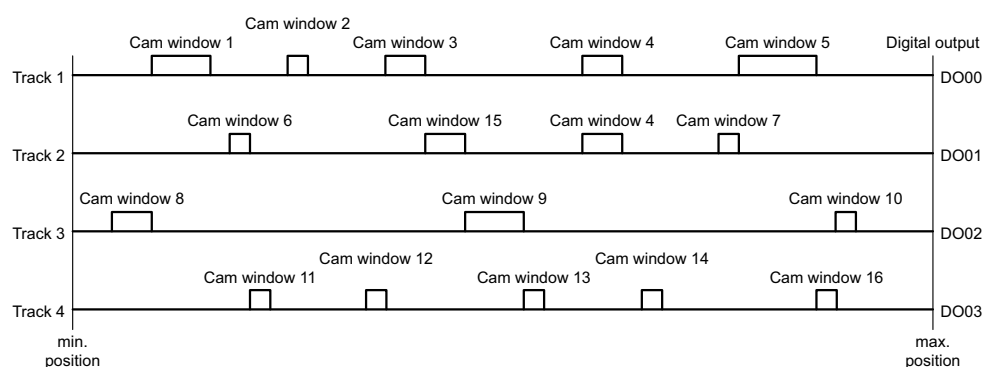
A cam switch consists of several cam tracks. Each cam track is assigned a binary switching signal. A cam track is divided into cam windows.

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 on a digital output or on a process data bit.

Following an example that shows 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.

1.163.1 8577.1 Activate?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No
- 1= Yes

This parameter can be used to activate the cam switch function.

- Yes: Activate cam switch function.
- No

1.163.2 8577.2 Result

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Track 0
- 1= Track 1
- 2= Track 2
- 3= Track 3

This parameter indicates in a bit-wise coded manner whether the drive is located at least on one cam of the respective track.

- Bit 0: At least one cam in track 0 is approached.
- Bit 1: At least one cam in track 1 is approached.
- Bit 2: At least one cam in track 2 is approached.
- Bit 3: At least one cam in track 3 is approached.

1.163.3 8577.3 Data source

Factory setting: 0.0 No function

Data type: Parameter pointer

Data length: 1

Range of values:

- 0.0 No function
- 8364.25 Actual position in system units
- 8364.26 Actual position in user units
- 8364.27 Actual position in user units modulo
- 8367.10 Process output data
- 8367.11 Process output data
- 8367.12 Process output data
- 8367.13 Process output data
- 8367.14 Process output data
- 8367.15 Process output data
- 8367.16 Process output data
- 8367.17 Process output data
- 8367.18 Process output data
- 8367.19 Process output data
- 8367.20 Process output data
- 8367.21 Process output data
- 8367.22 Process output data
- 8367.23 Process output data
- 8367.24 Process output data
- 8367.25 Process output data

This parameter can be used to choose the source from which the cam switch function obtains its actual position.

1.163.4 8577.4 PO data format

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter specifies the data format for access to PO data words. The parameter takes only effect when accessing PO data words.

PO data words have a width of 16 bits and can be combined to a 32-bit value using the PO data format.

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

1.163.5 8577.5 Modulo – min. interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

For the "actual position in user units – modulo" data source, the modulo value ranges of the encoder apply.

If other data sources are selected (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 – min. interpretation" and "Modulo – max. interpretation".

These parameters will only be evaluated if different values are entered.

1.163.6 8577.6 Modulo – max. interpretation

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -1073741824 to 1073741823

For the "actual position in user units – modulo" data source, the modulo value ranges of the encoder apply.

If other data sources are selected (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 – min. interpretation" and "Modulo – max. interpretation".

These parameters will only be evaluated if different values are entered.

1.163.7 8577.7 Force-on mask

Factory setting:

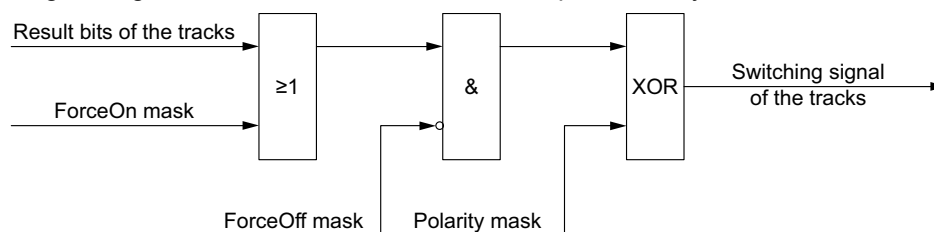
Data type: Bit field

Data length: 1

Range of values:

- 0= Track 0
- 1= Track 1
- 2= Track 2
- 3= Track 3

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 tracks.



– Bit 0 = 1: Track 0 is forced to "on".

- Bit 1 = 1: Track 1 is forced to "on".
- Bit 2 = 1: Track 2 is forced to "on".
- Bit 3 = 1: Track 3 is forced to "on".

1.163.8 8577.8 Force-off mask

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Track 0
- 1= Track 1
- 2= Track 2
- 3= Track 3

A force-off mask deactivates the tracks permanently. The force-off mask has a higher priority than the force-on mask.

- Bit 0 = 1: Track 0 is forced to "off".
- Bit 1 = 1: Track 1 is forced to "off".
- Bit 2 = 1: Track 2 is forced to "off".
- Bit 3 = 1: Track 3 is forced to "off".

1.163.9 8577.9 Polarity mask

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Track 0
- 1= Track 1
- 2= Track 2
- 3= Track 3

Using the polarity mask you can specify whether a track is "0" or "1" active.

- Bit 0 = 1: Track 0 is negated.
- Bit 1 = 1: Track 1 is negated.
- Bit 2 = 1: Track 2 is negated.
- Bit 3 = 1: Track 3 is negated.

1.163.10 8577.10 Cam track 1 – activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Using this parameter you can activate track 1.

- Yes: Track active: The cam signals are active.
- No: Track not active: The cam signals remain permanently set to "0".

1.163.11 8577.11 Cam track 1 – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 100

Range of values: -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. The risk of this method is that incorrect values are predicted due to a noisy actual value. 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.

1.163.12 8577.12 Cam track 1 – time window

Factory setting: 10000

Unit: μ s

Data type: UInt32

Data length: 1

Resolution: 1000

Range of values: 1000 to 64000

In connection with index 8577.11 "Cam track 1 – dead time" there is a risk of incorrectly predicted values due to a noisy actual value.

To achieve smoothing, you can specify a time base for the prediction.

This parameter

specifies the age of the predecessor value for linear extrapolation.

This time window is also the basis for the CAM direction parameter, which means the time base

also smoothens the direction definition of the cam source.

1.163.13 8577.13 Cam track 1 – hysteresis

Factory setting: 0

Unit:

Data type: UInt32

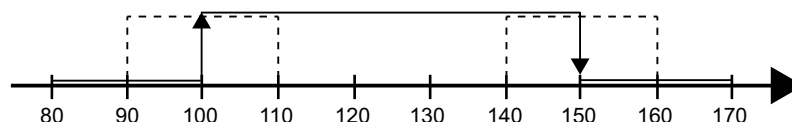
Data length: 1

Resolution: 1

Range of values: 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.

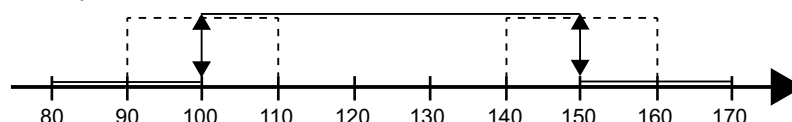
Example of only one activation direction:



Left limit 100, right limit 150, hysteresis: 10, from left.

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:



Left limit 100, right limit 150, hysteresis: 10, both directions

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

1.163.14 8577.14 Cam track 1 – cam window assignment

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Cam window 0
- 1= Cam window 1
- 2= Cam window 2
- 3= Cam window 3
- 4= Cam window 4
- 5= Cam window 5
- 6= Cam window 6
- 7= Cam window 7
- 8= Cam window 8
- 9= Cam window 9
- 10= Cam window 10
- 11= Cam window 11
- 12= Cam window 12
- 13= Cam window 13
- 14= Cam window 14
- 15= Cam window 15

Bits 0 to 15 can be used to assign cam windows 0 to 15 to the track.

Bit = "1" means, the windows are assigned.

1.163.15 8577.20 Cam track 2 – activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Activation of cam track 2

1.163.16 8577.21 Cam track 2 – dead time

Factory setting: 0
Unit: μ s
Data type: Int32
Data length: 1
Resolution: 100
Range of values: -500000 to 500000
Cam track 2, dead time

1.163.17 8577.22 Cam track 2 – time window

Factory setting: 10000
Unit: μ s
Data type: UInt32
Data length: 1
Resolution: 1000
Range of values: 1000 to 64000
Cam track 2, time window

1.163.18 8577.23 Cam track 2 – hysteresis

Factory setting: 0
Unit:
Data type: UInt32
Data length: 1
Resolution: 1
Range of values: 0 to 2147483647
Cam track 2, hysteresis

1.163.19 8577.24 Cam track 2 – cam window assignment

Factory setting:
Data type: Bit field
Data length: 1
Range of values:

- 0= Cam window 0
- 1= Cam window 1
- 2= Cam window 2
- 3= Cam window 3
- 4= Cam window 4
- 5= Cam window 5
- 6= Cam window 6
- 7= Cam window 7
- 8= Cam window 8

- 9= Cam window 9
- 10= Cam window 10
- 11= Cam window 11
- 12= Cam window 12
- 13= Cam window 13
- 14= Cam window 14
- 15= Cam window 15

Cam track 2, cam window assignment

1.163.20 8577.30 Cam track 3 – activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Activation of cam track 3

1.163.21 8577.31 Cam track 3 – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 100

Range of values: -500000 to 500000

Cam track 3, dead time

1.163.22 8577.32 Cam track 3 – time window

Factory setting: 10000

Unit: μ s

Data type: Uint32

Data length: 1

Resolution: 1000

Range of values: 1000 to 64000

Cam track 3, time window

1.163.23 8577.33 Cam track 3 – hysteresis

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Cam track 3, hysteresis

1.163.24 8577.34 Cam track 3 – cam window assignment

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Cam window 0
- 1= Cam window 1
- 2= Cam window 2
- 3= Cam window 3
- 4= Cam window 4
- 5= Cam window 5
- 6= Cam window 6
- 7= Cam window 7
- 8= Cam window 8
- 9= Cam window 9
- 10= Cam window 10
- 11= Cam window 11
- 12= Cam window 12
- 13= Cam window 13
- 14= Cam window 14
- 15= Cam window 15

Cam track 3, cam window assignment

1.163.25 8577.40 Cam track 4 – activation

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

Activation of cam track 4

1.163.26 8577.41 Cam track 4 – dead time

Factory setting: 0

Unit: μ s

Data type: Int32

Data length: 1

Resolution: 100

Range of values: -500000 to 500000

Cam track 4, dead time

1.163.27 8577.42 Cam track 4 – time window

Factory setting: 10000

Unit: μ s

Data type: Uint32

Data length: 1

Resolution: 1000

Range of values: 1000 to 64000

Cam track 4, time window

1.163.28 8577.43 Cam track 4 – hysteresis

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 2147483647

Cam track 4, hysteresis

1.163.29 8577.44 Cam track 4 – cam window assignment

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Cam window 0
- 1= Cam window 1
- 2= Cam window 2
- 3= Cam window 3
- 4= Cam window 4
- 5= Cam window 5
- 6= Cam window 6
- 7= Cam window 7
- 8= Cam window 8
- 9= Cam window 9
- 10= Cam window 10
- 11= Cam window 11
- 12= Cam window 12
- 13= Cam window 13
- 14= Cam window 14
- 15= Cam window 15

Cam track 4, cam window assignment

1.163.30 8577.50 Cam window 1 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 1 left limit

1.163.31 8577.51 Cam window 1 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 1 right limit

1.163.32 8577.52 Cam window 1 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

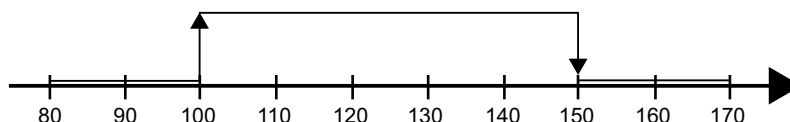
For each cam window you can specify the direction from which the window is to be approached so that the switching signal becomes active. This means the values must correspond to the activation direction. The following activation directions are possible:

- From no direction (cam window deactivated).
- From left.
- From right.
- From both directions.

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 but the cam was not approached from this direction.

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 desired behavior is achieved by the fact that the cam state is maintained when returning to a direction-dependent cam and is not reset immediately when the direction is reversed.

Example:

**1.163.33 8577.60 Cam window 2 – left limit**

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 2 left limit

1.163.34 8577.61 Cam window 2 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 2 right limit

1.163.35 8577.62 Cam window 2 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 2 activation direction

1.163.36 8577.70 Cam window 3 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 3 left limit

1.163.37 8577.71 Cam window 3 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 3 right limit

1.163.38 8577.72 Cam window 3 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 3 activation direction

1.163.39 8577.80 Cam window 4 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 4 left limit

1.163.40 8577.81 Cam window 4 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 4 right limit

1.163.41 8577.82 Cam window 4 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 4 activation direction

1.163.42 8577.90 Cam window 5 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 5 left limit

1.163.43 8577.91 Cam window 5 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 5 right limit

1.163.44 8577.92 Cam window 5 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 5 activation direction

1.163.45 8577.100 Cam window 6 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 6 left limit

1.163.46 8577.101 Cam window 6 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 6 right limit

1.163.47 8577.102 Cam window 6 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 6 activation direction

1.163.48 8577.110 Cam window 7 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 7 left limit

1.163.49 8577.111 Cam window 7 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 7 right limit

1.163.50 8577.112 Cam window 7 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 7 activation direction

1.163.51 8577.120 Cam window 8 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 8 left limit

1.163.52 8577.121 Cam window 8 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 8 right limit

1.163.53 8577.122 Cam window 8 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 8 activation direction

1.163.54 8577.130 Cam window 9 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 9 left limit

1.163.55 8577.131 Cam window 9 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 9 right limit

1.163.56 8577.132 Cam window 9 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 9 activation direction

1.163.57 8577.140 Cam window 10 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 10 – left limit

1.163.58 8577.141 Cam window 10 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 10 right limit

1.163.59 8577.142 Cam window 10 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 10 activation direction

1.163.60 8577.150 Cam window 11 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 11 left limit

1.163.61 8577.151 Cam window 11 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 11 right limit

1.163.62 8577.152 Cam window 11 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left

- 2= From right
 - 3= From both directions
- Cam window 11 activation direction

1.163.63 8577.160 Cam window 12 – left limit

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Cam window 12 left limit

1.163.64 8577.161 Cam window 12 – right limit

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Cam window 12 right limit

1.163.65 8577.162 Cam window 12 – activation direction

Factory setting:
Data type: Enum
Data length: 1
Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 12 activation direction

1.163.66 8577.170 Cam window 13 – left limit

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Cam window 13 left limit

1.163.67 8577.171 Cam window 13 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 13 right limit

1.163.68 8577.172 Cam window 13 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 13 activation direction

1.163.69 8577.180 Cam window 14 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 14 left limit

1.163.70 8577.181 Cam window 14 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 14 right limit

1.163.71 8577.182 Cam window 14 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 14 activation direction

1.163.72 8577.190 Cam window 15 – left window

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 15 left limit

1.163.73 8577.191 Cam window 15 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 15 right limit

1.163.74 8577.192 Cam window 15 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 15 activation direction

1.163.75 8577.200 Cam limit 16 – left limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 16 left limit

1.163.76 8577.201 Cam window 16 – right limit

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Cam window 16 right limit

1.163.77 8577.202 Cam window 16 – activation direction

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Deactivated**
- 1= From left
- 2= From right
- 3= From both directions

Cam window 16 activation direction

1.164 8580 Digital inputs I/O option

Assignment and display values for optional inputs and outputs.

1.164.1 8580.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13

Indicates the current states of the digital inputs of the option.

Bit x represents the state of digital input DI1x.

1.164.2 8580.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13

Indicates whether the programmed function is "0-active" (e.g. limit switch) on the digital input.

Bit x = 1 means the terminal DI1x is 0-active.

1.164.3 8580.3 Function status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DI10
- 1= DI11
- 2= DI12
- 3= DI13

Indicates whether the programmed function is active on the digital input taking account of index 8580.2.

Bit x = 1 means the function programmed for digital input DIx is active.

1.164.4 8580.10 Function DI10

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O option"

Assignment of digital input DI10 of the option card.

1.164.5 8580.11 Function DI11

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"

- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O option"

Assignment of digital input DI11 of the option card.

1.164.6 8580.12 Function DI12

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"
- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O option"

Assignment of digital input DI12 of the option card.

1.164.7 8580.13 Function DI13

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 0.0 Bit 0 "No function"
- 8314.2 Bit 0 "HW limit switch positive 1"
- 8314.2 Bit 1 "HW limit switch negative 1"
- 8314.2 Bit 2 "HW limit switch positive 2"
- 8314.2 Bit 3 "HW limit switch negative 2"
- 8322.3 Bit 0 "Activate parameter set 1"
- 8322.3 Bit 1 "Activate parameter set 2"
- 8349.18 Bit 0 "Data flexibilization layer input"
- 8354.21 Bit 0 "Fixed velocity setpoint bit 0"
- 8354.21 Bit 1 "Fixed velocity setpoint bit 1"
- 8354.21 Bit 2 "Fixed velocity 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 26 "FCB 26 Stop at user limits"
- 8501.1 Bit 0 "Release brake with inhibited output stage"
- 8509.5 Bit 0 "FCB 09 Position control – feed enable"
- 8509.5 Bit 1 "FCB 09 Position control – accept position"

- 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 velocity setpoint 2"
- 8526.2 Bit 0 "FCB 26 Stop at user limits – stop with position control"
- 8586.1 Bit 2 "Activate standby mode using I/O option"

Assignment of digital input DI13 of the option card.

1.165 8581 Digital outputs I/O option

Assignment and display values for optional inputs and outputs.

1.165.1 8581.1 Actual value

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11
- 2= DO12
- 3= DO13

Indicates the current states of the digital outputs of the option.

Bit x represents the state of digital output DO1x.

1.165.2 8581.2 Negation mask

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10
- 1= DO11
- 2= DO12
- 3= DO13

Indicates whether the programmed function is "0-active" on the digital output. Bit x = 1 means the terminal DO1x is 0-active.

1.165.3 8581.3 Function status

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= DO10

- 1= DO11
- 2= DO12
- 3= DO13

Indicates whether the programmed function is active on the digital output taking account of index 8581.2.

Bit x = 1 means the function programmed for digital output DOx is active.

1.165.4 8581.10 Function DO10

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal active"
- 8326.1 Bit 0 "Velocity window" signal active"
- 8327.1 Bit 0 "Setpoint limit with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limit with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limit with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limit with application limit – torque"
- 8327.1 Bit 5 "Setpoint limit with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO10 of the option card.

1.165.5 8581.11 Function DO11

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Velocity window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"

- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO11 of the option card.

1.165.6 8581.12 Function DO12

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Velocity window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO12 of the option card.

1.165.7 8581.13 Function DO13

Factory setting: 0.0 Bit 0 "No function"

Data type: Parameter bit pointer

Data length: 1

Range of values:

- 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 "Parameter set 1 active"
- 8322.1 Bit 1 "Parameter set 2 active"
- 8323.1 Bit 0 "Velocity reference" signal – active"
- 8324.1 Bit 0 "Setpoint/actual velocity comparison" signal – active"
- 8325.1 Bit 0 "Current reference" signal – active"
- 8326.1 Bit 0 "Velocity window" signal – active"
- 8327.1 Bit 0 "Setpoint limitation with application limit – velocity"
- 8327.1 Bit 1 "Setpoint limitation with application limit – acceleration"
- 8327.1 Bit 2 "Setpoint limitation with application limit – deceleration"
- 8327.1 Bit 3 "Setpoint limitation with application limit – jerk time"
- 8327.1 Bit 4 "Setpoint limitation with application limit – torque"
- 8327.1 Bit 5 "Setpoint limitation with drive train – maximum speed"
- 8327.1 Bit 6 "Setpoint limitation with 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 option "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 option"
- 8332.7 Bit 0 "24 V standby 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 flexibilization layer 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 12 "Basic initialization active"
- 8332.7 Bit 13 "Delivery state active"
- 8332.7 Bit 14 "Parameter download active"
- 8334.1 Bit 0 "DI00"
- 8334.1 Bit 1 "DI01"
- 8334.1 Bit 2 "DI02"
- 8334.1 Bit 3 "DI03"
- 8334.1 Bit 4 "DI04"
- 8334.1 Bit 5 "DI05"
- 8364.13 Bit 0 "User current limit reached"
- 8364.13 Bit 8 "User 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 limits – active"
- 8512.2 Bit 2 "FCB 12 Reference travel – reference cam"
- 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 0"
- 8577.2 Bit 1 "Cam switch – track 1"
- 8577.2 Bit 2 "Cam switch – track 2"
- 8577.2 Bit 3 "Cam switch – track 3"
- 8580.1 Bit 0 "DI10"
- 8580.1 Bit 1 "DI11"
- 8580.1 Bit 2 "DI12"
- 8580.1 Bit 3 "DI13"

Assignment of digital output DO13 of the option card.

1.166 8582 Analog inputs I/O option

Settings and displays for analog input Alx.

1.166.1 8582.1 AI2 offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Voltage offset of analog input AI2.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

1.166.2 8582.2 AI2 current offset

Factory setting: 0

Unit: μA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -20000 to 20000

Current offset of analog input AI2.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

1.166.3 8582.3 AI2 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1048575

Changing the numerator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint ± 3000 1/min or $\pm n_{\text{max}}$ is defined when the scaling of denominator/numerator = 1 and the input voltage is ± 10 V.

1.166.4 8582.4 AI2 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1048575

Changing the denominator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint ± 3000 1/min or $\pm n_{\text{max}}$ is defined when the scaling of denominator/numerator = 1 and the input voltage is ± 10 V.

1.166.5 8582.5 AI2 function

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No function**
- 1= ± 10 V input

- 2= 0 – 10 V input
- 3= 0 – 20 mA input
- 4= 4 – 20 mA input

This parameter is used to distinguish between voltage/current at analog input AI2.

1.166.6 8582.11 AI2 input voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Input voltage of analog input AI2 of the I/O option card.

1.166.7 8582.12 AI2 input current

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 20000

Input current of analog input AI2 of the I/O option card.

1.166.8 8582.13 AI2 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Scaled value AI2 of the I/O option card.

1.166.9 8582.14 AI2 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Scaled value AI2 of the I/O option card (unfiltered)

1.166.10 8582.21 AI3 offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Voltage offset of analog input AI3.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

1.166.11 8582.22 AI3 current offset

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -20000 to 20000

Current offset of analog input AI3.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

1.166.12 8582.23 AI3 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.166.13 8582.24 AI3 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1048575

Changing the denominator 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.

1.166.14 8582.25 AI3 function

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No function**
- 1= +/-10 V input
- 2= 0 – 10 V input
- 3= 0 – 20 mA input
- 4= 4 – 20 mA input

This parameter is used to distinguish between voltage/current at analog input AI3.

1.166.15 8582.31 AI3 input voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Input voltage of analog input AI3 of the I/O option card.

1.166.16 8582.32 AI3 input current

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 20000

Input current of analog input AI3 of the I/O option card.

1.166.17 8582.33 AI3 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Scaled value AI3 of the I/O option card.

1.166.18 8582.34 AI3 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Scaled value AI3 of the I/O option card (unfiltered)

1.166.19 8582.80 Sum of AI2 + AI3

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Sum of the scaled values AI2 + AI3

1.166.20 8582.81 Sum of AI2 + AI3 unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Sum of the scaled values AI2 + AI3 (unfiltered)

1.167 8583 Analog outputs I/O option

Settings and display values for the analog outputs.

1.167.1 8583.1 AO2 voltage offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Voltage offset of analog output AO2.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

1.167.2 8583.2 AO2 current offset

Factory setting: 0

Unit: μA

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -20000 to 20000

Current offset of analog output AO2.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

1.167.3 8583.3 AO2 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1048575

Changing the numerator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint ± 3000 1/min or $\pm n_{\text{max}}$ is defined when the scaling of denominator/numerator = 1 and the input voltage is ± 10 V.

1.167.4 8583.4 AO2 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 1 to 1048575

Changing the denominator affects the slope of the setpoint characteristic.

Depending on the function type, the setpoint ± 3000 1/min or $\pm n_{\text{max}}$ is defined when the scaling of denominator/numerator = 1 and the input voltage is ± 10 V.

1.167.5 8583.5 AO2 function

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No function**
- 1= ± 10 V output
- 3= 0 – 20 mA output
- 4= 4 – 20 mA output

This parameter is used to distinguish between voltage/current at analog output AO2.

1.167.6 8583.10 AO2 data source raw value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Raw value of the set data source of analog output AO2.

1.167.7 8583.11 AO2 output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Output voltage of analog output AO2 of the I/O option card.

1.167.8 8583.12 AO2 output current

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 0 to 20000

Output current of analog output AO2.

1.167.9 8583.13 AO2 scaled value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Scaled value AO2 of the I/O option card.

1.167.10 8583.14 AO2 scaled value unfiltered

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Scaled value AO2 of the I/O option card (unfiltered)

1.167.11 8583.16 AO2 data source

Factory setting: 8364.44 Actual speed in user units

Data type: Parameter pointer

Data length: 1

Range of values:

- 0.0 No function
- 8312.6 Output stage – total utilization
- 8364.44 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 AO2.

1.167.12 8583.21 AO3 voltage offset

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -10000 to 10000

Voltage offset of analog output AO3.

The zero crossing of the setpoint characteristic can be shifted along the "input voltage" axis.

1.167.13 8583.22 AO3 current offset

Factory setting: 0

Unit: μ A

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -20000 to 20000

Current offset of analog output AO3.

The offset can be used to shift the zero crossing of the setpoint characteristic curve.

1.167.14 8583.23 AO3 scaling numerator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.167.15 8583.24 AO3 scaling denominator

Factory setting: 1

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: 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.

1.167.16 8583.25 AO3 function

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No function**
- 1= +/-10 V output
- 3= 0 – 20 mA output
- 4= 4 – 20 mA output

This parameter is used to distinguish between voltage/current at analog output AO3.

1.167.17 8583.30 AO3 data source raw value

Factory setting: 0

Unit:

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -2147483648 to 2147483647

Raw value of the set data source of AO3

1.167.18 8583.31 AO3 output voltage

Factory setting: 0

Unit: mV

Data type: Int32

Data length: 1
Resolution: 1
Range of values: -10000 to 10000
Output voltage of analog output AO3 of the I/O option card.

1.167.19 8583.32 AO3 output current

Factory setting: 0
Unit: μ A
Data type: Int32
Data length: 1
Resolution: 1
Range of values: 0 to 20000
Output current of analog output AO3.

1.167.20 8583.33 AO3 scaled value

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Scaled value AO3 of the I/O option card

1.167.21 8583.34 AO3 scaled value unfiltered

Factory setting: 0
Unit:
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -2147483648 to 2147483647
Scaled value AO3 of the I/O option card (unfiltered)

1.167.22 8583.36 AO3 data source

Factory setting: 8364.128 Absolute apparent current – rms value
Data type: Parameter pointer
Data length: 1
Range of values:

- 0.0 No function
- 8312.6 Output stage – total utilization
- 8364.44 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 AO3.

1.168 8585 I/O option

I/O option

1.168.1 8585.1 Operating state

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= Initial state**
- 1= Plugged detection
- 2= Initialization state
- 3= Idle
- 4= Cyclic processing

Operating state of the I/O option card

1.168.2 8585.2 Error bits

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= CRC error FPGA
- 1= CRC error option
- 2= Timeout error option
- 3= Watchdog error option
- 4= Frame error option

Error bits of the I/O option card

1.168.3 8585.3 Configuration ID

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 255

Hardware ID of the I/O card that the microcontroller provides to the option card.

1.168.4 8585.4 Configuration

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 4294967295

Number of digital inputs/outputs of the I/O card.

The number of digital inputs is coded on the lowest byte, the number of digital outputs on the second byte, the number of analog inputs on the third byte, and the number of analog outputs on the fourth byte.

1.169 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. Switch off high-voltage switched-mode power supply in the power section of control unit devices.
2. Switch off supply voltage for local bus consumers of control unit devices.
3. Switch off all segments of a 7-segment display up to the decimal point at the bottom right of an inverter with 7-segment display.
4. Switch off voltage supply for a plugged-in keypad when using compact units.
5. If enabled by the user, switch off encoder supply.

1.169.1 8586.1 Activate standby mode?

Factory setting:

Data type: Bit field

Data length: 1

Range of values:

- 0= Control word
- 1= Digital inputs of the basic unit
- 2= Digital inputs of the I/O option
- 3= Fieldbus

This parameter is used to specify the channels for enabling/disabling standby mode.

1.169.2 8586.2 Switch off encoder/DriveSafety supply?

Factory setting:

Data type: Enum

Data length: 1

Range of values:

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

This parameter is used to set whether the encoder or DriveSafety is to be disabled when standby mode is activated.

- Yes: switch off supply.
- No

1.170 8587 Scope data channels

Scope data channels

1.170.1 8587.1 Data channel 1

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Range of values: 0 to 4294967295
Scope data channel 1

1.170.2 8587.2 Data channel 2

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Range of values: 0 to 4294967295
Scope data channel 2

1.170.3 8587.3 Data channel 3

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Range of values: 0 to 4294967295
Scope data channel 3

1.170.4 8587.4 Data channel 4

Factory setting: 0
Unit:
Data type: Uint32 (fill level array)
Data length: 65534
Resolution: 1
Range of values: 0 to 4294967295

Scope data channel 4

1.170.5 8587.5 Data channel 5

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope data channel 5

1.170.6 8587.6 Data channel 6

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope data channel 6

1.170.7 8587.7 Data channel 7

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope data channel 7

1.170.8 8587.8 Data channel 8

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope data channel 8

1.170.9 8587.9 Data channel 9

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope data channel 9

1.170.10 8587.10 Data channel 10

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope data channel 10

1.170.11 8587.100 Timestamp channel

Factory setting: 0

Unit:

Data type: Uint32 (fill level array)

Data length: 65534

Resolution: 1

Range of values: 0 to 4294967295

Scope timestamp channel

1.170.12 8587.101 Data status

Factory setting: 0

Unit:

Data type: Uint32

Data length: 1

Resolution: 1

Range of values: 0 to 255

The data status informs about the validity and fill level of the scope data buffer.

1.171 8603 General engineering data

General engineering data

1.171.1 8603.1 General information

Factory setting:

- 0
- 0

Unit:

Data type: Uint8 (fill level array)

Data length: 20

Resolution: 1

Range of values: 0 to 255

General

1.172 8610 EU 400 V/50 Hz

Country-specific configuration data for EU 400 V/50 Hz

1.172.1 8610.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 2000

Nominal motor voltage

1.172.2 8610.2 Nominal motor frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 20000

Nominal motor frequency

1.172.3 8610.3 Maximum speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 36000

Maximum speed

1.172.4 8610.4 Fixed setpoint 1

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 1

1.172.5 8610.5 Fixed setpoint 2

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 2

1.172.6 8610.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 3

1.172.7 8610.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 4

1.172.8 8610.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 5

1.172.9 8610.9 Fixed setpoint 6

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -3600000000 to 3600000000
Fixed velocity setpoint 6

1.173 8611 USA/CAN 460 V/60 Hz

Country-specific configuration data for USA/CAN 460 V/60 Hz

1.173.1 8611.1 Nominal motor voltage

Factory setting: 0
Unit: V
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 2000
Nominal motor voltage

1.173.2 8611.2 Nominal motor frequency

Factory setting: 0
Unit: Hz
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 20000
Nominal motor frequency

1.173.3 8611.3 Maximum speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 36000
Maximum speed

1.173.4 8611.4 Fixed setpoint 1

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 1

1.173.5 8611.5 Fixed setpoint 2

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 2

1.173.6 8611.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 3

1.173.7 8611.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 4

1.173.8 8611.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 5

1.173.9 8611.9 Fixed setpoint 6

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 6

1.174 8612 Configuration data BR/KR 380 V/60 Hz

Country-specific configuration data for BRA/KOR 380 V/60 Hz

1.174.1 8612.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 2000

Nominal motor voltage

1.174.2 8612.2 Nominal motor frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 20000

Nominal motor frequency

1.174.3 8612.3 Maximum speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 36000

Maximum speed

1.174.4 8612.4 Fixed setpoint 1

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 1

1.174.5 8612.5 Fixed setpoint 2

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 2

1.174.6 8612.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 3

1.174.7 8612.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 4

1.174.8 8612.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: -360000000 to 360000000
 Fixed velocity setpoint 5

1.174.9 8612.9 Fixed setpoint 6

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: -360000000 to 360000000
 Fixed velocity setpoint 6

1.175 8613 Configuration data BR/KR 440 V/60 Hz

Country-specific configuration data for BRA/KOR 440 V/60 Hz

1.175.1 8613.1 Nominal motor voltage

Factory setting: 0
 Unit: V
 Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: 0 to 2000
 Nominal motor voltage

1.175.2 8613.2 Nominal motor frequency

Factory setting: 0
 Unit: Hz
 Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: 0 to 20000
 Nominal motor frequency

1.175.3 8613.3 Maximum speed

Factory setting: 0
 Unit: 1/min

Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 36000
Maximum speed

1.175.4 8613.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 1

1.175.5 8613.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 2

1.175.6 8613.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 3

1.175.7 8613.7 Fixed setpoint 4

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 4

1.175.8 8613.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 5

1.175.9 8613.9 Fixed setpoint 6

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 6

1.176 8614 EU 230 V/50 Hz

Country-specific configuration data for EU 230 V/50 Hz

1.176.1 8614.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 2000

Nominal motor voltage

1.176.2 8614.2 Nominal motor frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 20000

Nominal motor frequency

1.176.3 8614.3 Maximum speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 36000
Maximum speed

1.176.4 8614.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 1

1.176.5 8614.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 2

1.176.6 8614.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 3

1.176.7 8614.7 Fixed setpoint 4

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 4

1.176.8 8614.8 Fixed setpoint 5

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 5

1.176.9 8614.9 Fixed setpoint 6

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -3600000000 to 3600000000

Fixed velocity setpoint 6

1.177 8615 USA/CAN 230 V/60 Hz

Country-specific configuration data for USA/CAN 230 V/60 Hz

1.177.1 8615.1 Nominal motor voltage

Factory setting: 0

Unit: V

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 2000

Nominal motor voltage

1.177.2 8615.2 Nominal motor frequency

Factory setting: 0

Unit: Hz

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 20000

Nominal motor frequency

1.177.3 8615.3 Maximum speed

Factory setting: 0

Unit: 1/min

Data type: Float32

Data length: 1

Resolution: -

Range of values: 0 to 36000

Maximum speed

1.177.4 8615.4 Fixed setpoint 1

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 1

1.177.5 8615.5 Fixed setpoint 2

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 2

1.177.6 8615.6 Fixed setpoint 3

Factory setting: 0

Unit: 1E-4 /min

Data type: Int32

Data length: 1

Resolution: 1

Range of values: -360000000 to 360000000

Fixed velocity setpoint 3

1.177.7 8615.7 Fixed setpoint 4

Factory setting: 0

Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: -360000000 to 360000000
 Fixed velocity setpoint 4

1.177.8 8615.8 Fixed setpoint 5

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: -360000000 to 360000000
 Fixed velocity setpoint 5

1.177.9 8615.9 Fixed setpoint 6

Factory setting: 0
 Unit: 1E-4 /min
 Data type: Int32
 Data length: 1
 Resolution: 1
 Range of values: -360000000 to 360000000
 Fixed velocity setpoint 6

1.178 8616 Configuration data BR/KR 220 V/60 Hz

Country-specific configuration data for BRA/KOR 220 V/60 Hz

1.178.1 8616.1 Nominal motor voltage

Factory setting: 0
 Unit: V
 Data type: Float32
 Data length: 1
 Resolution: -
 Range of values: 0 to 2000
 Nominal motor voltage

1.178.2 8616.2 Nominal motor frequency

Factory setting: 0
 Unit: Hz

Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 20000
Nominal motor frequency

1.178.3 8616.3 Maximum speed

Factory setting: 0
Unit: 1/min
Data type: Float32
Data length: 1
Resolution: -
Range of values: 0 to 36000
Maximum speed

1.178.4 8616.4 Fixed setpoint 1

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -3600000000 to 3600000000
Fixed velocity setpoint 1

1.178.5 8616.5 Fixed setpoint 2

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -3600000000 to 3600000000
Fixed velocity setpoint 2

1.178.6 8616.6 Fixed setpoint 3

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -3600000000 to 3600000000
Fixed velocity setpoint 3

1.178.7 8616.7 Fixed setpoint 4

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 4

1.178.8 8616.8 Fixed setpoint 5

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 5

1.178.9 8616.9 Fixed setpoint 6

Factory setting: 0
Unit: 1E-4 /min
Data type: Int32
Data length: 1
Resolution: 1
Range of values: -360000000 to 360000000
Fixed velocity setpoint 6

1.179 8622 Programmable fault response

These parameters can be used to set parameterizable fault responses.

1.179.1 8622.2 Heat sink utilization – prewarning

Factory setting:
Data type: Enum
Data length: 1
Range of values:

- 0= No response
- 1= Warning

This parameter is used to set the device response to an exceeded prewarning threshold for electromechanical utilization (index 8336.2).

– No response: The device ignores the event.

- Warning: The device issues a warning message.

1.179.2 8622.3 Positioning lag error

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 1= Warning
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- **4= Inhibit output stage**

This parameter is used to set the device response to a lag error (lag error window exceeded, index 8509.4).

1.179.3 8622.4 Line phase failure

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 1= Warning
- **2= Application stop (with output stage inhibit)**
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to a line phase failure (values below threshold defined by the user, index 8351.5).

1.179.4 8622.5 External fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 1= Warning
- **2= Application stop (with output stage inhibit)**
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to an external fault (e.g. triggered by terminal or control word).

1.179.5 8622.6 EtherCAT®/SBusPLUS timeout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 1= Warning
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage
- 51= Warning with self reset
- **52= Application stop (with output stage inhibit) with self reset**
- 53= Emergency stop (with output stage inhibit) with self reset
- 54= Inhibit output stage with self reset

This parameter is used to set the device response to an EtherCAT®/SBusPLUS timeout (timeout time, index 8455.3).

1.179.6 8622.7 External synchronization

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- **1= Warning**
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage
- 51= Warning with self reset
- 52= Application stop (with output stage inhibit) with self reset
- 53= Emergency stop (+output stage inhibit) with self-reset
- 54= Inhibit output stage with self reset

This parameter is used to set the device response to loss of external synchronization.

1.179.7 8622.8 Motor temperature current parameter set – prewarning

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- **1= Warning**
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

Motor temperature active parameter set – prewarning.

1.179.8 8622.10 Electromechanical utilization – prewarning

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- **1= Warning**
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to an exceeded prewarning threshold for electromechanical utilization (index 8336.2).

1.179.9 8622.13 Encoder warning

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **1= Warning**
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to an encoder warning.

1.179.10 8622.14 Encoder fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **2= Application stop (with output stage inhibit)**
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to an encoder fault.

1.179.11 8622.15 Additional encoder

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **1= Warning**

- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to a fault of an encoder that is not used for control (speed or positioning control).

1.179.12 8622.16 Response of encoder 1 to latest fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No response**
- 216= Encoder – fault
- 217= Additional encoder

Response of encoder 1 to latest fault

1.179.13 8622.17 Response of encoder 2 to latest fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No response**
- 216= Encoder – fault
- 217= Additional encoder

Response of encoder 2 to latest fault

1.179.14 8622.18 Response of encoder 1 to latest critical fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No response**
- 4= Inhibit output stage
- 216= Encoder – fault
- 217= Additional encoder

Response of encoder 1 to latest critical fault

1.179.15 8622.19 Response of encoder 2 to latest critical fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- **0= No response**
- 4= Inhibit output stage
- 216= Encoder – fault
- 217= Additional encoder

Response of encoder 2 to latest critical fault

1.179.16 8622.20 External braking resistor fault

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 0= No response
- 1= Warning
- 2= Application stop (with output stage inhibit)
- 3= Emergency stop (with output stage inhibit)
- **4= Inhibit output stage**

External braking resistor fault

1.179.17 8622.21 Application heartbeat timeout

Factory setting:

Data type: Enum

Data length: 1

Range of values:

- 1= Warning
- **2= Application stop (with output stage inhibit)**
- 3= Emergency stop (with output stage inhibit)
- 4= Inhibit output stage

This parameter is used to set the device response to a timeout of the application heartbeat.

1.180 8700 DS general status values

DS general status values that can be recorded using the scope function of the inverter.

1.180.1 8700.248 Address scope data A

Factory setting: 0

Unit:

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Range of values: -2147483648 to 2147483647

Data content of addresses that were configured via address scope on channel A.

1.180.2 8700.249 Address scope data B

Factory setting: 0

Unit:

Data type: Int32 (DataArray)

Data length: 4

Resolution: 1

Range of values: -2147483648 to 2147483647

Data content of addresses that were configured via address scope on channel B.

1.181 8701 DS scope configuration

DS scope configuration

1.181.1 8701.1 Parameter index

Factory setting: 0.0 No function

Data type: Parameter pointer (DataArray)

Data length: 8

Range of values: 0.0 No function

Parameter index

1.181.2 8701.2 Array offset

Factory setting: 0

Unit:

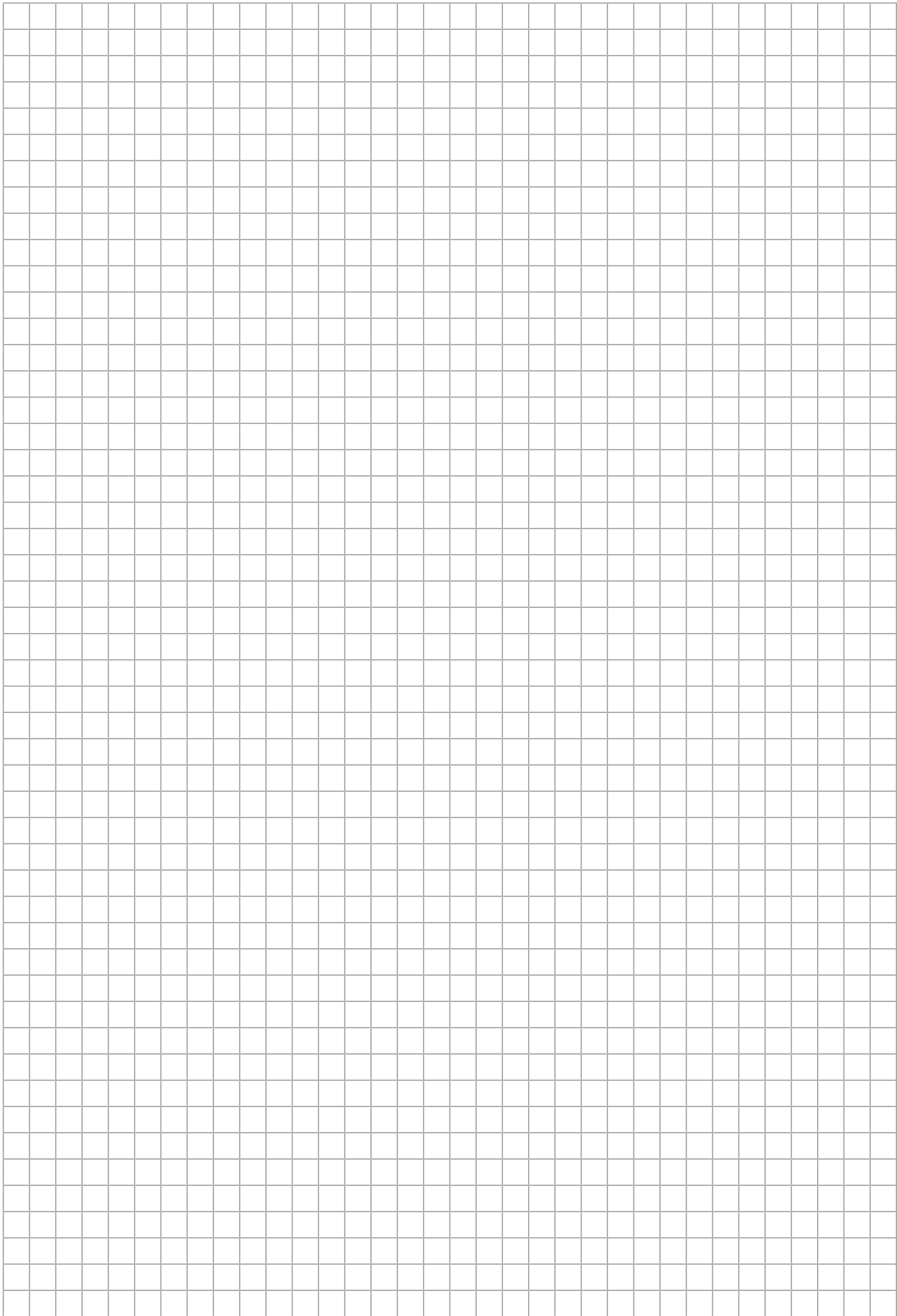
Data type: UInt32 (DataArray)

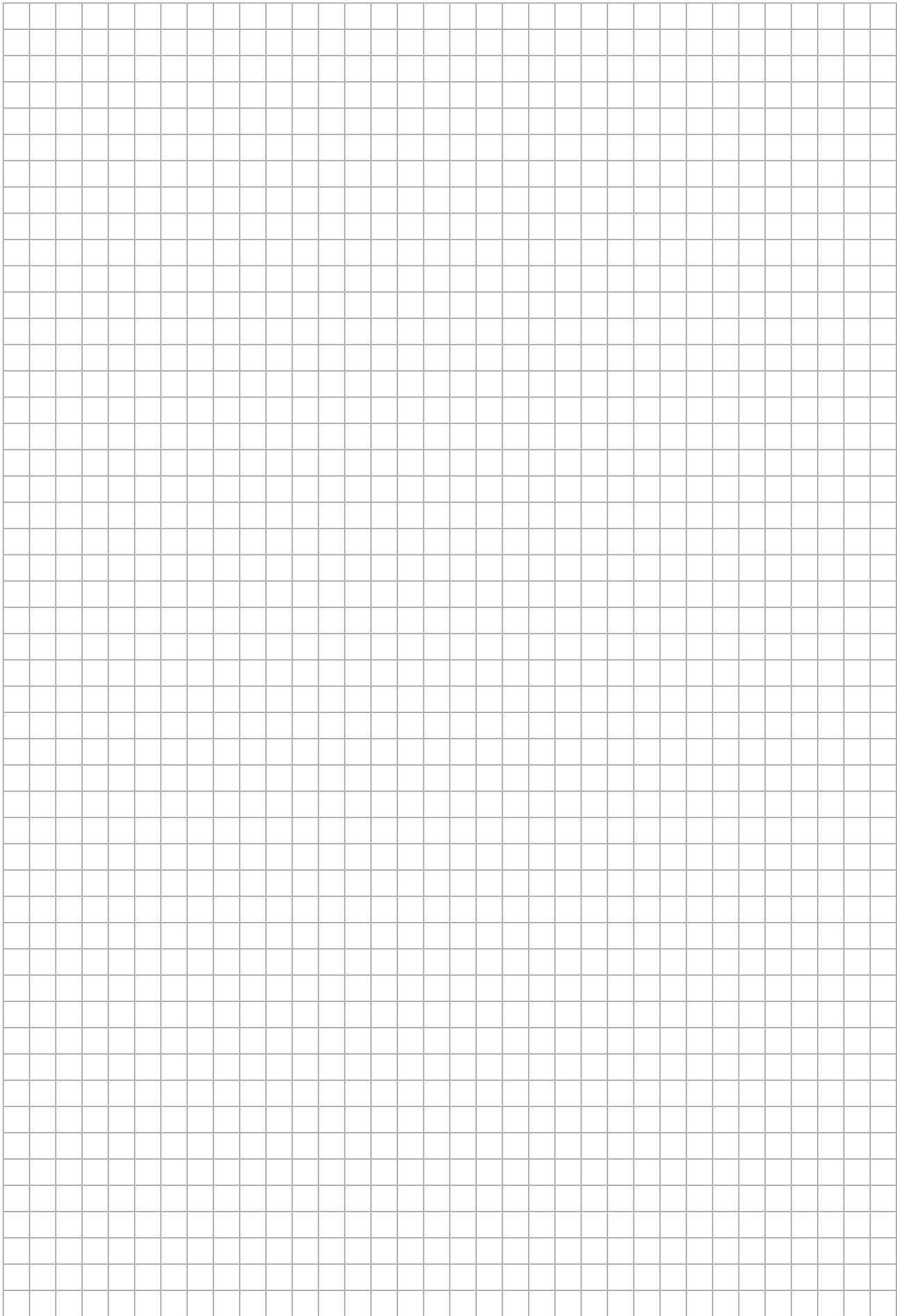
Data length: 8

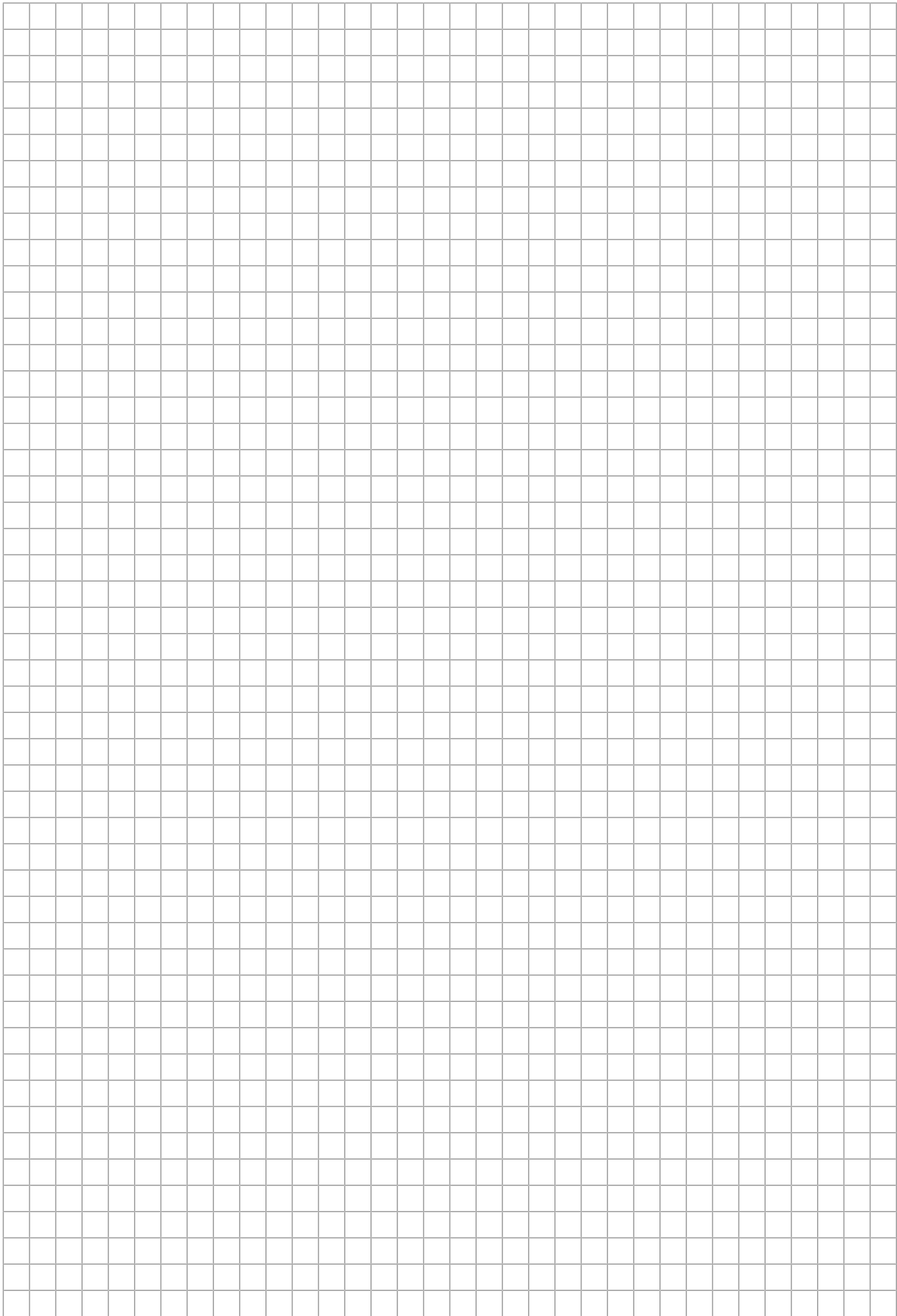
Resolution: 1

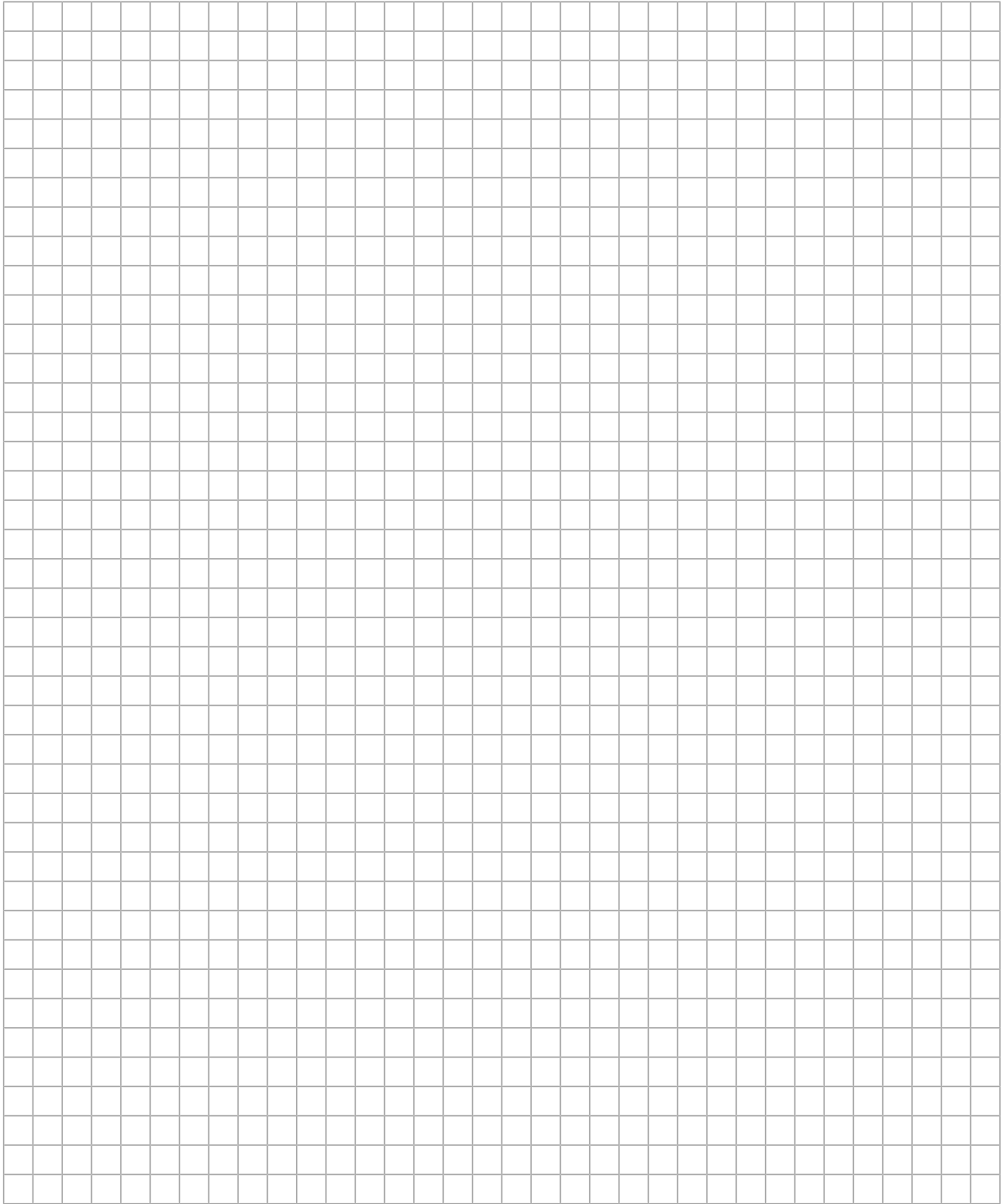
Range of values: 0 to 4294967295

Array offset











SEW-EURODRIVE
Driving the world

SEW
EURODRIVE

SEW-EURODRIVE GmbH & Co KG
P.O. Box 3023
76642 BRUCHSAL
GERMANY
Phone +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com
→ www.sew-eurodrive.com