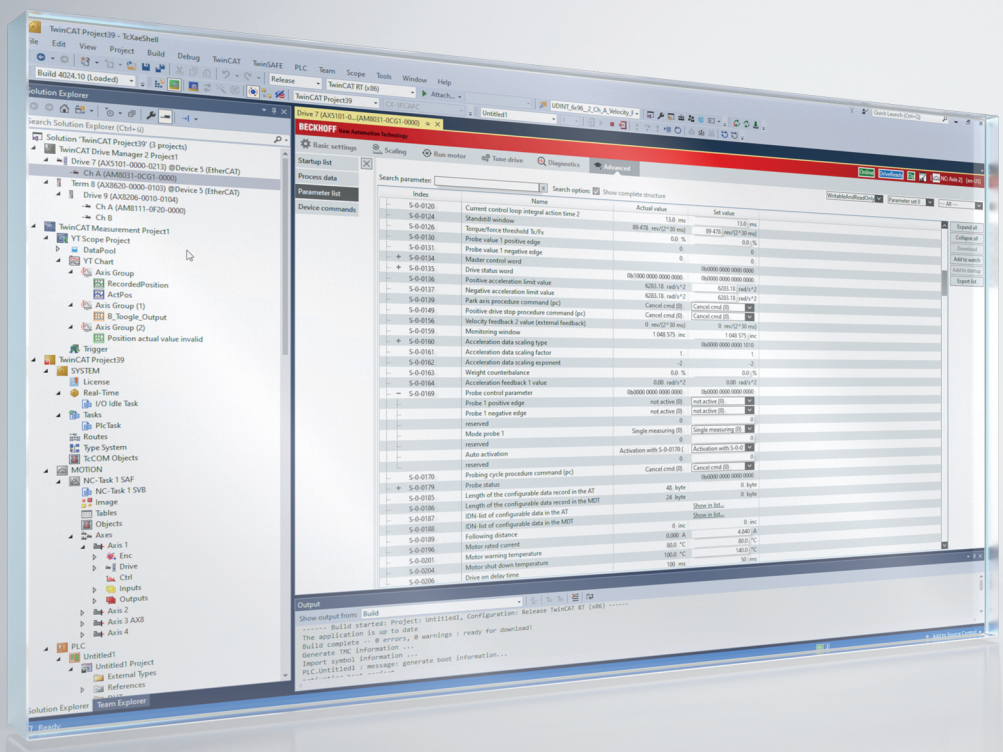
BECKHOFF New Automation Technology

IDN-Beschreibung | EN

AX5000

Digital Kompakt Servoverstärker



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1 Foreword

1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with applicable national standards.
It is essential that the documentation and the following notes and explanations are followed when installing and commissioning the components.
It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.
We reserve the right to revise and change the documentation at any time and without prior announcement.
No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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Patent Pending

The EtherCAT Technology is covered, including but not limited to the following patent applications and patents:
EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702
with corresponding applications or registrations in various other countries.

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1.2 Version numbers

Provision of revision levels

On request, you can obtain a list of revision levels for changes in the operating instructions.

- Send your request to: motion-documentation@beckhoff.de

Origin of the document

These operating instructions were originally written in German. All other languages are derived from the German original.

Product features

Only the product properties specified in the current operating instructions are valid. Further information given on the product pages of the Beckhoff homepage, in emails or in other publications is not authoritative.

2 Document structure

2.1 Contents of this documentation

This documentation describes standard parameters (S-IDNs) and product-specific parameters (P-IDNs) for the AX5000 series. The S-IDNs are specified based on the Sercos 2 standard, the P-IDNs are specified by Beckhoff Automation. Together, the parameter description and the functional descriptions form the documentation for the drive firmware.

Currently this documentation covers IDNs S-0-0001 to S-0-0909 and P-0-0001 to P-0-2002.

2.2 Structure of a parameter description

The description of an individual parameter consists of the following consecutive parts:

Part	Explanation
IDN number and title	The parameter has an IDN number and an English title.
Short description	The parameter is summarized in a few sentences.
Attributes	The parameter features are shown in tabular form.
Detailed description (optional)	The background to the parameter and any relationships with other parameters are explained in a further description.
Bit pattern (optional)	Bits and their meaning are shown in tabular form.
Further notes (optional)	Notes may refer to: IDNs involved Additional functional descriptions

2.2.1 IDN number

The IDN number in the title of the parameter description is made up as follows:

IDN number	Explanation
S-x-yyyy / P-x-yyyy 0000 0000 0000 0000 0=S 1=P	Bit 15 specifies the parameter type.
x=0..7	An x in the title indicates parameter set switchover.
yyyy=0..4095	The range of yyyy is 0 to 4095.

2.2.2 Parameter attributes

The following parameter attributes are shown:

Attribute	Explanation
Data type	The parameter matches one of the following data types: binary: The parameter is stored with a bit pattern. dec: The parameter contains signed decimal values. hex: The parameter contains hexadecimal values. idn: The parameter contains parameter lists. udec: The parameter contains unsigned decimal values. text: The parameter contains text.
Data length	The data length of the parameter is specified in bits.
Decimal point	The number of decimal places of the parameter is specified. Example: 5 decimal places: 20000 -> 0.2
Min value	A minimum value exists for this parameter.
Max value	A maximum value exists for this parameter.
Default value	Default value for the parameter (factory setting)
Unit	The unit of the parameter is specified in this field.
Changeable in EtherCAT state	The parameter can be changed to: Init (corresponds to Sercos CP0/1) PreOp (corresponds to Sercos CP2) SafeOp (corresponds to Sercos CP3) Op (corresponds to Sercos CP4) No (cannot be changed)
Cyclic transfer	The parameter can be transferred cyclically (im): DT (drive telegram) MDT (master data telegram) DT+MDT (drive telegram and master data telegram) No (cannot be transferred cyclically)
Device parameter	The parameter may be device-dependent, i.e. it may be different for each servo drive model. Example for a device parameter: Servo drive rated current (S-0-0112). Yes (device-dependent) No (device-independent)
Password level	EtherCAT supports passwords and two password levels to protect selected parameters.
Related to interface revision	The parameter is tied to a certain interface version: No from Rev. 203 (yes, valid from interface version 203) changed from Rev. 210 (yes, valid from interface version 210) Modified values are listed in the attribute table and are associated with an interface via “Rev. xxx”

2.2.3 Further parameter features

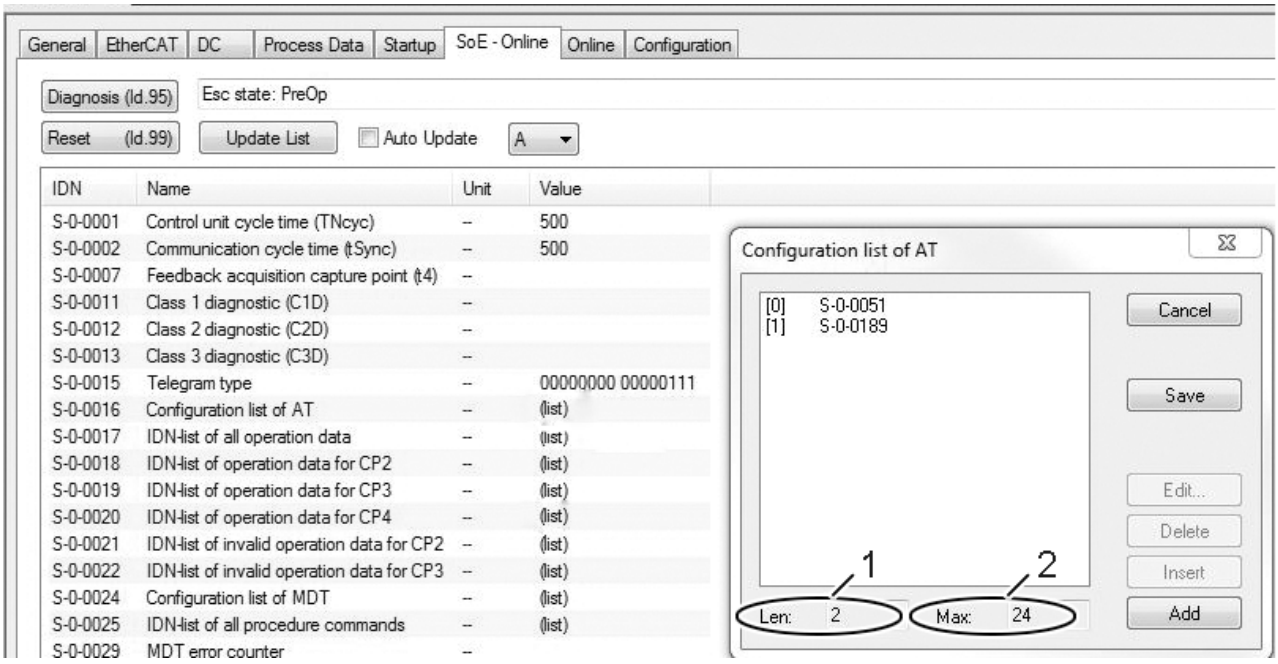
2.2.3.1 Parameter set switchover

Parameters with parameter set switchover are identified by an x in the title, e.g. S-x-0082.
If parameter set switchover is possible, up to 8 different data sets per parameter are available for selection, e.g. S-0-0082 to S-7-0082.

2.2.3.2 Additional length information

Parameters containing parameter lists, e.g. S-0-0016, can be extended and therefore have at least the following two additional features:

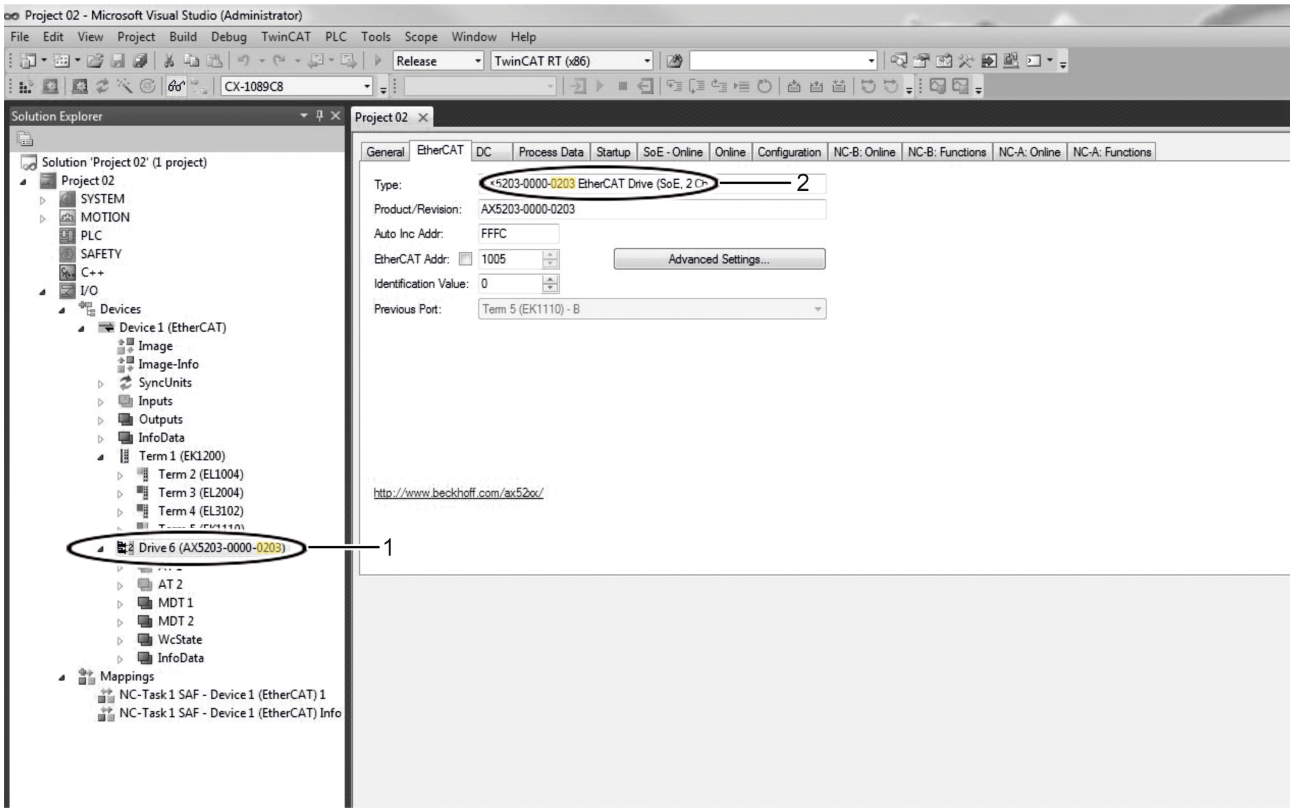
(1) Actual length	Indicates the current parameter length in bits.
(2) Maximum length	Indicates the maximum parameter length in bits.



These features are also listed in the parameter description.

2.2.4 Interface revisions

The functionality of some parameters depends on the interface revision of the servo drive. Beckhoff support may query the interface revision.



If the AX5000 is added, the interface revision is indicated in the structure (1) in the device name. This device name can be changed by the user. Therefore, please always read the interface revision at the location indicated above (2).

For further information please look into the involved IDN:

S-0-0030 [▶ 46]

Interface revisions were published for the two hardware versions of the AX5000. The Firmware column shows the highest released build number for an interface.

Hardware 1		Hardware 2	
Interface	Firmware	Interface	Firmware
004	V1.00 build0009	200	V2.03 build0026
005	V1.01 build0008	201	V2.04 build0016
006	V1.02 build0007	202	V2.05 build0008
007	V1.03 build0001	203	V2.06 build0023
008	V1.04 build0005	210	V2.10 build0007
009	V1.05 build0011		
011	V1.06 build0028		
012	V1.07 build0016		

3 S-Parameter

S-0-0001 Control unit cycle time (TNcyc)

The parameter contains information regarding the time intervals at which the numeric control makes new set values available.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	125
Default	500
Max value	20000
Unit	µs
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	from 200: Interpolation P-0-0556

This parameter must be transferred in PreOp from the master to the slave and is taken into account in the slave from SafeOp. S-0-0001 must be equal to S-0-0002.
When using a control mode which contains position control, S-0-0001 must be equal or greater than P-0-0004. If S-0-0001 is longer than P-0-0004, AX5000 interpolates the missing set values. Interpolation can be configured in P-0-0556.

For further information please look into the involved IDN:

S-0-0001 [▶ 23], S-0-0002 [▶ 24], P-0-0004, [▶ 211] P-0-0556 [▶ 794]

S-0-0002 Communication cycle time (tScyc)

The parameter contains information regarding the time intervals at which the fieldbus (EtherCAT) transfers the cyclic data of the master data telegram (MDT) and the drive telegram (AT).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	125
Default	500
Max value	20000
Unit	µs
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

This parameter must be transferred in PreOp from the master to the slave and is active in the slave from SafeOp. This parameter is defined as 125 µs, 250 µs etc. up to 20000 µs, in increments of 250 µs. Values permitted in S-0-0002 depend on the position controller cycle.

S-0-0007 Feedback acquisition capture point (t4)

The time of measurement of the actual values is synchronised by the drive with the synchronisation signal Sync 1 of the EtherCAT distributed clock (DC).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	0
Unit	µs
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

In this way the master can specify the same actual value measuring time for all drives that operate in a coordinated way. This ensures synchronisation of the actual value acquisition for the respective drives. From SafeOp, the drive activates the measuring time for the actual values.

For further information please look into the involved IDN:

S-0-0002 [▶ 24]

S-0-0011 Class 1 diagnostic (C1D)

The parameter contains error groups that trigger a "drive shut down" error.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Drive shut-down error. A drive error situation of class C1D leads to the following: A best case deceleration followed by torque/force release at nmin. The drive shut-down error bit for C1D is set to '1' in the drive status (bit 13). The error bit is reset to '0' by the drive only when no errors of C1D exists and after the command 'reset class 1 diagnostic' (IDN S-0-0099) has been received by the drive.

Bit pattern:

Bit	Meaning
0	**Motor overload shut down** Motor overload shut down 0 = no error 1 = error
1	**Heatsink overtemperature shut down** Amplifier overtemperature shut down 0 = no error 1 = error
2	**Motor overtemperature shut down** Motor overtemperature shut down 0 = no error 1 = error
3	**Drive overtemperature shut down** Drive overtemperature shut down 0 = no error 1 = error
4	**Control voltage error** Control voltage error 0 = no error 1 = error
5	**Feedback error** Feedback error 0 = no error 1 = error
6	**Commutation error** Commutation error 0 = no error 1 = error
7	**Overcurrent error** Overcurrent error 0 = no error 1 = error
8	**Overvoltage error** Overvoltage error 0 = no error 1 = error

Bit	Meaning
9	**Undervoltage error** Undervoltage error 0 = no error 1 = error
10	**Power supply phase error** Power supply phase error 0 = no error 1 = error
11	**Excessive position deviation** Excessive position deviation 0 = no error 1 = error
12	**Communication error** Communication error bit 0 = no error 1 = error
13	**Overtravel limit exceeded** Overtravel limit exceeded (shut down) 0 = no error 1 = error
14	**Reserved**
15	**Manufacturer specific error** Manufacturer specific error 0 = no error 1 = error

IDN P-0-0350 - Error reaction check word

With this IDN you can parameterise a general reaction to an error and/or influence the behaviour of the two axes in the case of a 2-channel AX5000.

For further information please look into the involved IDN:

S-0-0135 [▶ 118], S-0-0099 [▶ 84], P-0-0350 [▶ 697]

Also see about this

- P-0-0350 Error reaction control word [▶ 697]

S-0-0012 Class 2 diagnostic (C2D)

The parameter contains warning groups that trigger a drive warning.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

If S-0-0012 changes, the C2D bit in S-0-0135 (bit 12) is set to "1". Once the changed status of S-0-0012 has been read via mailbox, the change bit is reset to "0". In this parameter the bit is automatically reset, once the cause has been rectified.
To precisely identify the warning, read the error memory.

Bit pattern:

Bit	Meaning
0	**Overload warning** Overload warning 0 = no warning 1 = warning
1	**Heatsink overtemperature warning** Amplifier overtemperature warning 0 = no warning 1 = warning
2	**Motor overtemperature warning** Motor overtemperature warning 0 = no warning 1 = warning
3	**Cooling error warning** Cooling error warning 0 = no warning 1 = warning
4	**Reserved**
5	**Reserved**
6	**Reserved**
7	**Reserved**
8	**Reserved**
9	**Undervoltage warning (bus voltage)** Undervoltage warning (bus voltage) 0 = no warning 1 = warning
10	**Reserved**
11	**Reserved**
12	**Reserved**
13	**Reserved**
14	**Reserved**
15	**Manufacturer-specific warning** Manufacturer-specific warning 0 = no warning 1 = warning

For further information please look into the involved IDN:

S-0-0135 [▶ 118]

S-0-0013 Class 3 diagnostic (C3D)

The parameter contains information groups that trigger a drive information.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

If an information is diagnosed in the drive, the change bit is set, as described below. In addition, change bit 11 is set by S-0-0135 to "1" and is only reset again when the cause has been rectified and the parameter S-0-0013 is read again.
In this parameter the bit is automatically reset, once the cause has been rectified.

Bit pattern:

Bit	Meaning
0	**Reserved**
1	**| n Feedback |< standstill window** This bit can be used to read the axis movement status. 0 = no information 1 = information
2	**Reserved**
3	**|T| ≥ Tx** This bit can be used to read whether the currently applied force or torque is larger or smaller than the TX S-0-0126 "Torque threshold". 0 = no information 1 = information
4 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0135 [▶ 118]

S-0-0015 Telegram type

The parameter contains the information to indicate that the AX5000 supports the application telegram.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	7
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

If application telegram is selected, S-0-0016 and S-0-0024 can be configured freely.

Bit pattern:

Bits 0-2	MDT	AT
7	Application telegram	Application telegram

For further information please look into the involved IDN:

S-0-0016 [▶ 33], S-0-0024 [▶ 42], S-0-0080 [▶ 73], S-0-0036 [▶ 58], S-0-0047 [▶ 65], S-0-0040 [▶ 60], S-0-0051 [▶ 67], S-0-0053 [▶ 68]

S-0-0016 Configuration list of AT

The parameter contains the information to indicate which data are contained in the drive telegram (AT). Only data listed in S-0-0187 are permitted as cyclic data in the drive telegram (AT).

Attributes

Name	Value
Datatype	idn
Data length in bit	416
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0015 [▶ 32], S-0-0187 [▶ 135]

Actual length

S-0-0016-Configuration list of AT / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0016-Configuration list of AT / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Configured AT IDNs

S-0-0016-Configuration list of AT / Configured AT IDNs

Datatype	Size in bit	Offset in bit	Properties
	384	32	---

S-0-0017 IDN-list of all operation data

The parameter contains a list of parameters for all operating data, commands and parameters present in the drive.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0017-IDN-list of all operation data / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0016-IDN-list of all operation data / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

All operation data

S-0-0017-IDN-list of all operation data / All operation data

Datatype	Size in bit	Offset in bit	Properties
	11136, from Rev. 210: 12064	32	---

S-0-0018 IDN-list of operation data for CP2 (PreOp)

The parameter contains a list of parameters for all data required in PreOp. The data must be correct in order to enable switching to SafeOp.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0018-IDN-list of operation data for CP2 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0018-IDN-list of operation data for CP2 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

All operation data

S-0-0018-IDN-list of operation data for CP2 / All operation data

Datatype	Size in bit	Offset in bit	Properties
	11104 from Rev. 210:12032	32	---

S-0-0019 IDN-list of operation data for CP3 (SafeOp)

The parameter contains a list of parameters for all data required in SafeOp. The data must be correct in order to enable switching to Op.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0019-IDN-list of operation data for CP3 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0019-IDN-list of operation data for CP3 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

All operation data

S-0-0019-IDN-list of operation data for CP3 / All operation data

Datatype	Size in bit	Offset	Properties
	11104 from Rev. 210: 12032	32	---

S-0-0020 IDN-list of operation data for CP4 (Op)

The parameter contains a list of parameters that can be changed in EtherCAT State OP.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0020-IDN-list of operation data for CP4 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0020-IDN-list of operation data for CP4 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

All operation data

S-0-0020-IDN-list of operation data for CP4 / All operation data

Datatype	Size in bit	Offset in bit	Properties
	11104 from Rev. 210: 12032	32	---

S-0-0021 IDN-list of invalid operation data for CP2 (PreOp)

The parameter contains a list of parameters that are contained in S-0-0018, and which the drive has detected as invalid before switching from PreOp to SafeOp.

Attributes

Name	Value
Datatype	idn
Data length in bit	400
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

If switching in CP2 is error-free, the list S-0-0021 is empty. If invalid parameters or invalid parameter combinations are detected during switching, S-0-0021 contains the numbers of the invalid parameters, and the switching is acknowledged with an error. Switching takes place via the AL Control and AL Status Register of the EtherCAT SlaveController.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0018 [▶ 35]

Actual length

S-0-0021-IDN-list of invalid operation data for CP2 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0021-IDN-list of invalid operation data for CP2 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Invalid operation data for CP2

S-0-0021-IDN-list of invalid operation data for CP2 / Invalid operation data for CP2

Datatype	Size in bit	Offset in bit	Properties
	400	32	---

S-0-0022 IDN-list of invalid operation data for CP3 (SafeOp)

The parameter contains a list of parameters that are contained in S-0-0019, and which the drive has detected as invalid before switching from SafeOp to Op.

Attributes

Name	Value
Datatype	idn
Data length in bit	192
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

If switching in CP3 is error-free, the list S-0-0022 is empty. If invalid parameters or invalid parameter combinations are detected during switching, S-0-0022 contains the numbers of the invalid parameters, and the switching is acknowledged with an error. Switching takes place via the AL Control and AL Status Register of the EtherCAT SlaveController.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0019 [▶ 36]

Actual length

S-0-0022-IDN-list of invalid operation data for CP3 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0021-IDN-list of invalid operation data for CP3 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Invalid operation data for CP3

S-0-0021-IDN-list of invalid operation data for CP3 / All operation data

Datatype	Size in bit	Offset in bit	Properties
	160	32	---

S-0-0024 Configuration list of MDT

The parameter contains the list of parameters for which data are transferred cyclically in the master data telegram (MDT) from the controller to the drive.

Attributes

Name	Value
Datatype	idn
Data length in bit	224
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The AX5000 allows the telegram type "application telegram" in S-0-0015 and therefore supports this list. Only data that are listed under S-0-0188 are permitted as cyclic data in the MDT.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0015 [▶ 32], S-0-0188 [▶ 137]

Actual length

S-0-0024-Configuration list of MDT / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0024-Configuration list of MDT / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Configured MDT IDNs

S-0-0024-Configuration list of MDT / Configured MDT IDNs

Datatype	Size in bit	Offset in bit	Properties
	192	32	---

S-0-0025 IDN-list of all procedure commands

The parameter contains the list of all available commands.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0025-IDN-list of all procedure commands / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0025-IDN-list of all procedure commands / Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

All operation data

S-0-0025-IDN-list of all procedure commands / All operation data

Datatype	Size in bit	Offset	Properties
UINT	12032	32	---

S-0-0029 MDT error counter

At each Sync1 time the drive checks whether new valid MDT data are present. If not, this counter is incremented. Possible causes of error are late EtherCAT telegrams or incorrectly transferred EtherCAT telegrams with invalid checksums.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

This counter should remain static at very low values (1 or 2). Otherwise, the cause should be analysed.

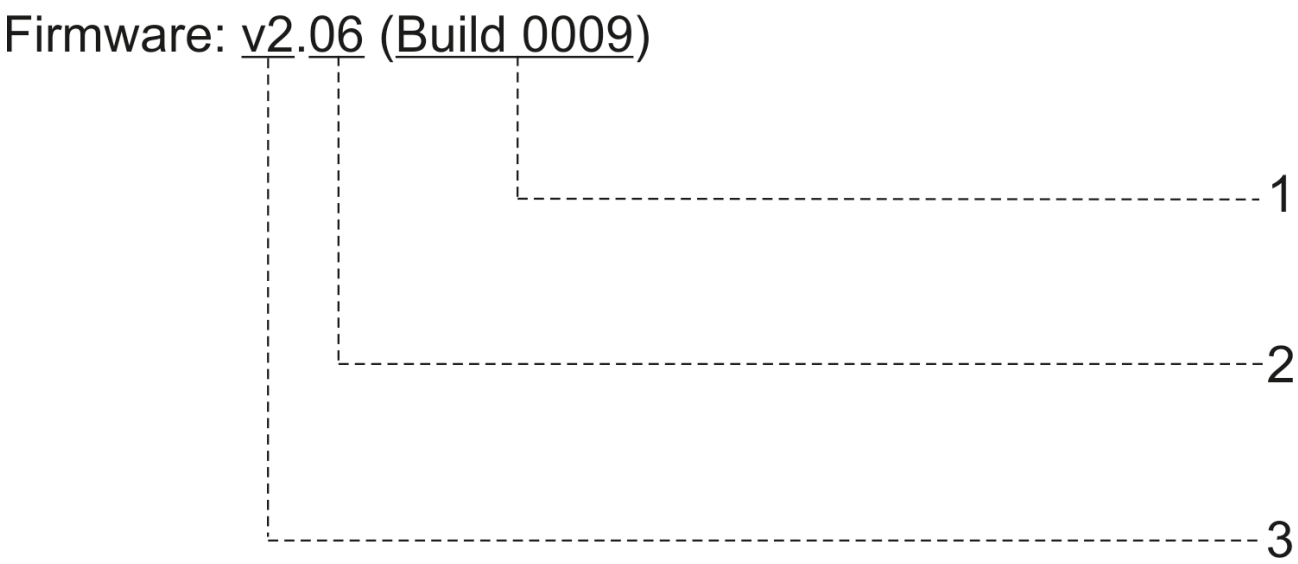
S-0-0030 Manufacturer version

The parameter contains information on the current firmware version of the drive.

Attributes

Name	Value
Datatype	text
Data length in bit	528
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

-



The version number is composed of three parts.
(3) The part before the dot is the major release number of the firmware and indicates significant changes.
(2) The part after the dot indicates the minor release number of the firmware. This number is increased when new functionality is added to the firmware. New functions go hand in hand with a new interface revision, since parameters are needed for new functionalities.
(1) The build number indicates the progress of development work in single steps and starts with 1 for a new version. The build number is increased when optimisations are implemented.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0030-Manufacturer version / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0030-Manufacturer version / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

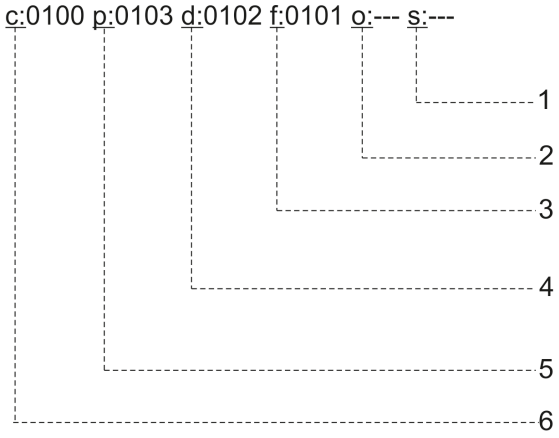
S-0-0031 Hardware version

The parameter contains information about the current hardware. It describes the PCB of the AX5000 with the associated hardware and firmware version.

Attributes

Name	Value
Datatype	text
Data length in bit	400
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

The information consists of letters and characters. The letters stand for PCBs. In addition, four characters are created. The first two characters indicate the hardware index, the following two characters indicate the firmware index of the PCB. Beckhoff support could query this information.



1: Safety board
2: Option board
3: Front board
4: Driver board
5: Power board
6: Control board

Example: c: 00001
Control board, hardware index 00, firmware index 01

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0031-Hardware version / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0031-Hardware version / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

S-0-0032 Primary operation mode

The parameter selects the main operating mode.

Attributes

Name	Value
Datatype	Binary
Data length in bit	16
Decimal point	0
Min value	-
Default	2
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210: additional operating modes “using dynamic MDT”

The operating modes (main mode or secondary modes 1 to 3) are activated via bits 9 and 8 in the DriveControlWord of the MDT (S-0-0134). The DriveStatusWord (S-0-0135) of the drive telegram (AT) indicates the activated mode via bits 9 and 8.
The position-controlled operating modes can only be selected as main mode without secondary mode.

Bit pattern:

Value	Description
0	**no mode of operation** no mode of operation
1	**torque / force control** Torque control
2	**velo control** Velocity control
3	**pos ctrl feedback 1** Position control, feedback system 1
4	**pos ctrl feedback 2** Position control, feedback system 2
11	**pos ctrl feedback 1 lag less** Position control lag less, feedback system 1
12	**pos ctrl feedback 2 lag less** Position control lag less, feedback system 2
32769	**torque / force control using dynamic MDT** Torque control using dynamic MDT
32770	**velo control using dynamic MDT** Velocity control using dynamic MDT
32771	**pos ctrl feedback 1 using dynamic MDT** Position control using dynamic MDT, feedback system 1
32772	**pos ctrl feedback 2 using dynamic MDT** Position control using dynamic MDT, feedback system 2
32779	**pos ctrl feedback 1 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 1
32780	**pos ctrl feedback 2 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 2

For further information please look into the involved IDN:

S-0-0033 [▶ 52]. S-0-0034 [▶ 54], S-0-0035 [▶ 56], S-0-0134 [▶ 116], S-0-0135 [▶ 118]

S-0-0033 Secondary operation mode 1

The parameter specifies the first secondary mode.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	2
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210: additional operating modes “using dynamic MDT”

The operating modes (main mode or secondary modes 1 to 3) are activated via bits 9 and 8 in the DriveControlWord of the MDT (S-0-0134). The DriveStatusWord (S-0-0135) of the drive telegram (AT) indicates the activated mode via bits 9 and 8.

Bit pattern:

Value	Description
0	**no mode of operation** no mode of operation
1	**torque control** Torque control
2	**velo control** Velocity control
3	**Pos ctrl feedback 1** Position control, feedback system 1
4	**Pos ctrl feedback 2** Position control, feedback system 2
11	**Pos ctrl feedback 1 lag less** Position control lag less, feedback system 1
12	**Pos ctrl feedback 2 lag less** Position control lag less, feedback system 2
32769	**torque control using dynamic MDT** Torque control using dynamic MDT
32770	**velo control using dynamic MDT** Velocity control using dynamic MDT
32771	**Pos ctrl feedback 1 using dynamic MDT** Position control using dynamic MDT, feedback system 1
32772	**Pos ctrl feedback 2 using dynamic MDT** Position control using dynamic MDT, feedback system 2
32779	**Pos ctrl feedback 1 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 1
32780	**Pos ctrl feedback 2 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 2

For further information please look into the involved IDN:

S-0-0032 [▶ 50], S-0-0034 [▶ 54], S-0-0035 [▶ 56], S-0-0134 [▶ 116], S-0-0135 [▶ 118]

S-0-0034 Secondary operation mode 2

The parameter specifies the second secondary mode.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	2
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210: additional operating modes “using dynamic MDT”

The operating modes (main mode or secondary modes 1 to 3) are activated via bits 9 and 8 in the DriveControlWord of the MDT (S-0-0134). The DriveStatusWord (S-0-0135) of the drive telegram (AT) indicates the activated mode via bits 9 and 8.

Bit pattern:

Value	Description
0	**no mode of operation** no mode of operation
1	**torque control** Torque control
2	**velo control** Velocity control
3	**Pos ctrl feedback 1** Position control, feedback system 1
4	**Pos ctrl feedback 2** Position control, feedback system 2
11	**Pos ctrl feedback 1 lag less** Position control lag less, feedback system 1
12	**Pos ctrl feedback 2 lag less** Position control lag less, feedback system 2
32769	**torque control using dynamic MDT** Torque control using dynamic MDT
32770	**velo control using dynamic MDT** Velocity control using dynamic MDT
32771	**Pos ctrl feedback 1 using dynamic MDT** Position control using dynamic MDT, feedback system 1
32772	**Pos ctrl feedback 2 using dynamic MDT** Position control using dynamic MDT, feedback system 2
32779	**Pos ctrl feedback 1 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 1
32780	**Pos ctrl feedback 2 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 2

For further information please look into the involved IDN:

S-0-0032 [▶ 50], S-0-0033 [▶ 52], S-0-0035 [▶ 56], S-0-0134 [▶ 116], S-0-0135 [▶ 118]

S-0-0035 Secondary operation mode 3

The parameter specifies the third secondary mode.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	2
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210: additional operating modes “using dynamic MDT”

The operating modes (main mode or secondary modes 1 to 3) are activated via bits 9 and 8 in the DriveControlWord of the MDT (S-0-0134). The DriveStatusWord (S-0-0135) of the drive telegram (AT) indicates the activated mode via bits 9 and 8.

Bit pattern:

Value	Description
0	**no mode of operation** no mode of operation
1	**torque control** Torque control
2	**velo control** Velocity control
3	**Pos ctrl feedback 1** Position control, feedback system 1
4	**Pos ctrl feedback 2** Position control, feedback system 2
11	**Pos ctrl feedback 1 lag less** Position control lag less, feedback system 1
12	**Pos ctrl feedback 2 lag less** Position control lag less, feedback system 2
32769	**torque control using dynamic MDT** Torque control using dynamic MDT
32770	**velo control using dynamic MDT** Velocity control using dynamic MDT
32771	**Pos ctrl feedback 1 using dynamic MDT** Position control using dynamic MDT, feedback system 1
32772	**Pos ctrl feedback 2 using dynamic MDT** Position control using dynamic MDT, feedback system 2
32779	**Pos ctrl feedback 1 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 1
32780	**Pos ctrl feedback 2 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 2

For further information please look into the involved IDN:

S-0-0032 [▶ 50], S-0-0033 [▶ 52], S-0-0034 [▶ 54], S-0-0134 [▶ 116], S-0-0135 [▶ 118]

S-0-0036 Velocity command value

In "velocity control" mode, this parameter is used to cyclically transfer the velocity set values from the controller to the servo drive. The cycle time is specified in S-0-0001.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-2 147 483 648
Default	0
Max value	2 147 483 647
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

Rotary motor: 1rpm = 2^{30}/60000 rev/(2^{30}ms) = 17895.697 rev/(2^{30}ms)

Linear motor 1m/s ≙ 2^{30}/24 rev/(2^{30}ms) at 24 mm pole pitch

For further information please look into the involved IDN:

S-0-0001 [▶ 23], S-0-0044 [▶ 62], S-0-0045 [▶ 63], S-0-0046 [▶ 64]

S-0-0037 Additive velocity command value

The parameter contains the additive velocity command value, which is cyclically added to S-0-0036, if the controller provides the value.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-2 147 483 648
Default	0
Max value	2 147 483 647
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

The parameter is relevant for velocity- and position-controlled modes; for scaling see S-0-0036. If the drive is operated in the position interface, a velocity pre-control can be applied by the controller here.

For further information please look into the involved IDN:

S-0-0036 [▶ 58], S-0-0044 [▶ 62], S-0-0045 [▶ 63], S-0-0046 [▶ 64]

S-0-0040 Velocity feedback value 1

The parameter contains the actual velocity value. It is determined from the signals of feedback system 1. If the observer is active, the signal is transmitted by the observer.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-2 147 483 648
Default	0
Max value	2 147 483 647
Unit	Rev / (2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Scaling see S-0-0036.

For further information please look into the involved IDN:

S-0-0036 [▶ 58], S-0-0044 [▶ 62], S-0-0045 [▶ 63], S-0-0046 [▶ 64]

S-0-0043 Velocity polarity parameter

The parameter can be used to invert the polarity of the velocity data in special applications.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	16
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The polarities are switched at the input and output of the closed control loop and therefore do not affect the closed control loops in the drive. The motor shaft rotates in a clockwise direction (viewed from the front onto the motor shaft), if there is a positive velocity set value difference and there is no inversion.

Bit pattern:

Bit	Meaning
0	**Velocity command value** Velocity command value 0 = polarity not inverted 1 = polarity inverted
1	**Additive velocity command value** Additive velocity command value 0 = polarity not inverted 1 = polarity inverted
2	**Velocity feedback value 1** Velocity feedback value 1 0 = polarity not inverted 1 = polarity inverted
3	**Velocity feedback value 2** Velocity feedback value 2 0 = polarity not inverted 1 = polarity inverted
4-15	**Reserved**

S-0-0044 Velocity data scaling type

This parameter defines the scaling of the velocity values. This scaling can currently not be changed. The controller can read the scaling and adjust the set value specification and the actual value processing.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	10
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0-2	**Scaling method** Scaling method 0 = no scaling 1 = linear 2 = rotary
3	**Scaling type** Scaling type 0 = preferred scaling 1 = parameter scaling
4	**Units for linear / rotational scaling** Units for linear / rotational scaling 0 = metre [m] or revolution [rev] 1 = inch [in]
5	**Time units** Time units 0 = minute [min] 1 = second [s]
6	**Data reference** Data reference 0 = at the motor shaft 1 = at the load
7 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0045 [▶ 63], S-0-0046 [▶ 64]

S-0-0045 Velocity data scaling factor

The parameter contains the scaling factor for all velocity data in the drive. The controller can read the used scaling and adjust the set value specification and the actual value processing.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	0
Default	55879
Max value	65535
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The velocity scaling cannot be changed. The following settings are set:

Rotary: 1 rpm = 2^{30}/60000 rev/(2^{30}ms) = 17895.697 rev/(2^{30}ms)

1 LSB = 1 / 17895.697 rpm = 55879.3544 * 10^{-9} rpm

S-0-0046 Velocity data scaling exponent

The parameter contains the scaling exponent for all velocity data in the drive. The controller can read the used scaling and adjust the set value specification and the actual value processing.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	0
Min value	-32
Default	-9
Max value	32
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The scaling cannot be changed. The following settings are set:

1 rpm = 2^{30}/60000 rev/(2^{30}ms) = 17895.697 rev/(2^{30}ms)

1 LSB = 1 / 17895.697 rpm = 55879.3544 * 10^{-9} rpm

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0045 [▶ 63]

S-0-0047 Position command value

The parameter contains the position command value. In position-controlled modes, this parameter is used to cyclically transfer the position command values from the controller to the servo drive. The cycle time is specified in S-0-0001.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-2 147 483 648
Default	0
Max value	2 147 483 647
Unit	inc
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0001 [▶ 23], S-0-0048 [▶ 66], S-0-0076 [▶ 70], S-0-0079 [▶ 72], S-0-0134 [▶ 116]

S-0-0048 Additive position command value

The parameter can be used to add an offset to the set position in a position-controlled mode.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-2 147 483 648
Default	0
Max value	2 147 483 647
Unit	inc
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0047 [▶ 65], S-0-0076 [▶ 70], S-0-0079 [▶ 72]

S-0-0051 Position feedback value 1 (motor feedback)

The parameter contains the current position of feedback system 1 (motor feedback). It is transferred from the drive to the controller.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	Inc
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

The position is transferred with the scaling specified in S-0-0076 and S-0-0079.

For further information please look into the involved IDN:

S-0-0076 [▶ 70], S-0-0079 [▶ 72]

S-0-0053 Position feedback value 2 (external feedback)

The parameter contains the current position of feedback system 2 (external feedback). It is transferred from the drive to the controller.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	Inc
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

An external feedback system enables the position to be logged directly at the load.

For further information please look into the involved IDN:

S-0-0076 [▶ 70], S-0079 [▶ 72]

S-0-0055 Position polarity parameters

The parameter can be used to invert the polarity of position data.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	15
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	

The polarities are switched at the input and output of the closed control loop and therefore do not affect the closed control loops in the drive. The motor shaft rotates in a clockwise direction (viewed from the front onto the motor shaft), if there is a positive position command value difference and there is no inversion.

Bit pattern:

Bit	Meaning
0	**Position command value** Position command value 0 = not inverted 1 = inverted
1	**Additive position command value** Additive position command value 0 = not inverted 1 = inverted
2	**Position feedback value 1** Position feedback value 1 0 = not inverted 1 = inverted
3	**Position feedback value 2** Position feedback value 2 0 = not inverted 1 = inverted
4 - 15	**Reserved**

S-0-0076 Position data scaling type

This parameter can be used to select different scaling types for the position signals. The drive represents associated parameters at the selected scale.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	10
Max value	-
Unit	-
Changeable in EtherCAT state	PreOP
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0-2	**Scaling method** Scaling method 0 = no scaling 1 = linear 2 = rotary
3	**Scaling type** Scaling type 0 = preferred scaling 1 = parameter scaling
4	**Units for linear / rotational scaling** Units for linear / rotational scaling 0= metre [m] / angle 1 = reserved
5	**Reserved**
6	**Data reference** Data reference 0 = at the motor shaft 1 = at the load
7	**Processing format** Processing format 0 = absolute format 1 = modulo format
8 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0103 [▶ 87], S-0-0079 [▶ 72]

Additional functional description

AX5000 - function descriptions / modulo

S-0-0079 Position resolution

This parameter specifies the number of increments per turn (360°) for rotary motors. The LSB of the position data thus has a weighting of 360° deg / S-0-0079.
For linear motors it specifies the number of increments per pole pitch (e.g. 24 mm). The LSB of the position data thus has a weighting of 24 mm / S-0-0079.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	1048576
Default	1048576
Max value	1048576, from Rev. 210: 1073741824
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

In S-0-0076, the AX5000 allows rotary parameter weighting and therefore supports this parameter. Up to interface 203 the following applies: The scaling cannot be changed. The following settings are set: 2^{20} inc/revolution = 1048576 inc/revolution.
From interface 204 the following applies: The single-turn resolution of the drive can be selected between 20 bits and 30 bits. Example: If the single-turn resolution is set to 22 bits, 10 bits remain for the multi-turn resolution. The overall resolution is 32 bits.

Value	Text
1048576	2^{20} Bit
2097152	2^{21} Bit
4194304	2^{22} Bit
8388608	2^{23} Bit
16777216	2^{24} Bit
33554432	2^{25} Bit
67108864	2^{26} Bit
134217728	2^{27} Bit
268435456	2^{28} Bit
536870912	2^{29} Bit
1073741824	2^{30} Bit

For further information please look into the involved IDN:

S-0-0076 [▶ 70]

S-0-0080 Torque command value

The parameter contains the torque/force set value. If the drive is in mode "Torque control", the drive attempts to generate this torque/force at the motor shaft.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min value	-100.0
Default	0.0
Max value	100.0
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

If the drive is operated in mode "Torque control", there is no velocity control in the drive. In this case the drive velocity must be monitored and controlled by the controller. The base for the percentage figure is P-0-0092. Saturation is compensated by P-0-0074.

For further information please look into the involved IDN:

S-0-0085 [▶ 78], S-0-0086 [▶ 79], P-0-0092 [▶ 282]

S-0-0081 Additive torque command value

The parameter can be used to add an offset to the set torque/force value in a torque-controlled mode.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min value	-100.0
Max value	100.0
Default value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

In velocity- or position-controlled modes an external acceleration pre-control can be realised via this parameter and/ or compensation of the load torque. The base for the percentage figure is P-0-0092.

For further information please look into the involved IDN:

S-0-0080 [▶ 73], S-0-0085 [▶ 78], S-0-0086 [▶ 79]

S-x-0082 Positive torque limit value

The parameter limits the set torque/force value of the drive. It defines the positive upper limit. If this limit is exceeded, the drive sets bit 3 of S-0-0013. The base for the percentage figure is P-0-0092.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	100.0
Max value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0082 - S-7-0082. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0086 [▶ 79], S-0-0013 [▶ 31]

Additional functional description

AX5000 / parameter set switchover

S-x-0083 Negative torque limit value

The parameter limits the set torque/force value of the drive. It defines the lower negative limit. If the value falls below this, the drive sets bit 3 of S-0-0013. The base for the percentage figure is P-0-0092.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	100.0
Max value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0083 - S-7-0083. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0086 [▶ 79], S-0-0013 [▶ 31]

Additional functional description

AX5000 / parameter set switchover

S-0-0084 Torque feedback value

The parameter contains the current in one-tenth of a percent relative to P-0-0092.

Changes as of firmware v2.10

The parameter contains the current in one-tenth of a percent relative to P-0-0094.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min value	-
Default	0.0
Max value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0085 [▶ 78], S-0-0086 [▶ 79], P-0-0092 [▶ 282]; P-0-0094 [▶ 300]

S-0-0085 Torque / force polarity parameter

The parameter can be used to invert the polarity of torque/force data.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	7
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

This parameter is used to configure polarities of torque / force signals for specific applications. Polarities are not changed drive internally. Only the interface (input and output signals) is affected. Without inversion the motor shaft torque / force is clockwise when a positive value is commanded.

Bit pattern:

Bit	Meaning
0	**Torque / force command value** Torque command value 0 = not inverted 1 = inverted
1	**Additive torque / force command value** Additive torque command value 0 = not inverted 1 = inverted
2	**Torque / force feedback value** Torque feedback value 0 = not inverted 1 = inverted
3 -15	**Reserved**

For further information please look into the involved IDN:

S-0-0080 [▶ 73], S-0-0081 [▶ 74]**und** S-0-0084 [▶ 77]

S-0-0086 Torque/force data scaling type

This parameter can be used to select different scaling types for the torque/force data. The drive represents associated parameters at the selected scale. AX5000 always uses percentage scaling (bit 0).

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	0
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0-2	**Scaling method** Scaling method 0 = percentage 1 = reserved 2 = reserved
3	**Scaling type** Scaling type 0 = preferred scaling 1 = parameter scaling
4	**Units for linear / rotational scaling** Units for linear / rotational scaling 0 = newton [N] or newton metre [Nm] 1 = reserved
5	**Reserved**
6	**Data reference** Data reference 0 = at the motor shaft 1 = at the load
7 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0103 [▶ 87], S-0-0079 [▶ 72]

S-x-0091 Bipolar velocity limit value

This parameter limits the velocity command value of the drive. This parameter defines the upper (positive) and lower (negative) limit. The lowest value of all set limits applies.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	0
Default	53687091
Max value	894784853
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0091 - S-7-0091. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0044 [▶ 62], S-0-0045 [▶ 63], S-0-0046 [▶ 64]

Additional functional description

AX5000 / parameter set switchover

S-x-0092 Bipolar torque limit value

This parameter limits the torque/force command value of the drive. This parameter defines the upper (positive) and lower (negative) limit. The lowest value of all set limits applies.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	100.0
Max value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

The base for the percentage figure is P-0-0092.

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0092 - S-7-0092. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0086 [▶ 79], S-0-0013 [▶ 31]

Additional functional description

AX5000 / parameter set switchover

S-0-0095 Diagnostic message

The parameter contains diagnostic messages about the current operating condition of the drive in text form.

Attributes

Name	Value
Datatype	text
Data length in bit	832
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0390 [▶ 184]

Additional functional description

AX5000 / diagnostic system

Actual length

S-0-0095-Diagnostic messages / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0095-Diagnostic messages / Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

String

S-0-0095-Diagnostic messages/ String

Datatype	Size in bit	Offset	Properties
	800	32	---

S-0-0099 Reset class 1 diagnostic (pc)

This parameter contains the SoE command that can be used to execute a drive reset. The reset attempts to acknowledge the C1D errors of the drive.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0	**Cancel cmd** Cancel command 0 = disable 1 = enable
1	**Set cmd** Set command 0 = disable 1 = enable
2	**Reserved**
3	**Set & enable command** Set & enable command 0 = disable 1 = enable
4 -15	**Reserved**

For further information please look into the involved IDN:

S-0-0011 [▶ 26]

S-0-0100 Velocity loop proportional gain

Proportional gain value of the velocity control loop. The value depends on the application. Important are motor inertia, load inertia and coupling. The scaling can be changed by setting a feature flag (P-0-0010 Bit 15) between A/(rad/s) (compatible) and Nm/(rad/s)|N/(m/s) (flag set).

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	0.000
Default	0.100
Max value	4294967.295
Unit	Nm/(rad/s) | N/(m/s)
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	Yes

Revision	Max value
002	10000
003	10000
004	10000
005	10000
006	30000
007	30000
008	30000
009	30000
010	1000000
011	1000000
012	1000000
200	1000000
201	1000000
202	1000000
203	1000000
210	4294967.295

For further information please look into the involved IDN:

S-0-0101 [▶ 86]

S-0-0101 Velocity loop integral action time

The parameter contains the integral action time for the PI velocity controller.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	5.0
Max value	6000.0
Unit	ms
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

If S-0-0101 = 0, the integral portion of the PI velocity controller is switched off.

For further information please look into the involved IDN:

S-0-0100 [▶ 85]

S-0-0103 Modulo Value

This parameter contains the modulo value. If the modulo format is selected in bit 7 of S-0-0076, this parameter defines the modulo interval. If the modulo format is active, the values of the position interface are within the interval [0…S-0-0103-1].

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	1
Default	1048576
Max value	2147483647
Unit	inc
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For continuously moving axes, the modulo function is used to log the position within a machine cycle. The modulo function of the AX5000 replaces complex controller programming with a simple parameterisation.

For further information please look into the involved IDN:

S-0-0047 [▶ 65], S-0-0048 [▶ 66], S-0-0051 [▶ 67], S-0-0076 [▶ 70], S-0-0079 [▶ 72], S-0-0091 [▶ 80], P-0-0010 [▶ 212], P-0-0159 [▶ 407], P-0-0270 [▶ 552], P-0-0277 [▶ 580], P-0-0279 [▶ 582]

Additional functional description

AX5000 / Modulo

Also see about this

- P-0-0010 Feature flags [▶ 212]
- P-0-0159 Raw position feedback value 1 [▶ 407]
- P-0-0270 Saved modulo data [▶ 552]
- P-0-0277 Schedule modulo init data saving (PreOp->SafeOp) [▶ 580]

S-0-0104 Position loop Kv-factor

The parameter contains the value for the proportional gain of the position controller (Kv factor).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min value	0.00
Default	1.00
Max value	100.00
Unit	1000/min
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

S-0-0106 Current loop proportional gain 1

The parameter contains the value for the proportional gain of the PI current controller for the torque-generating or force-generating current (Iq).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	140.0
Max value	1000.0
Unit	V/A
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

S-0-0107 Current control loop integral action time 1

The parameter contains the integral action time 1 for the current controller that is responsible for the torque- or force-generating current.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.1
Default	13.0; from Rev. 210: 0.8
Max value	3000.0
Unit	ms
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

S-x-0109 Motor peak current

This parameter contains the RMS value of the motor peak current. If the motor peak current is lower than the available peak current of the servo drive, the current of the servo drive is automatically limited to the value of this parameter.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	0.000
Max value	-
Unit	A
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0109 - S-7-0109. Ex factory, all values are identical.

S-0-0110 Amplifier peak current

The amplifier peak current is a hardware related limit, which means that the max. attainable torque/force is limited. In case of a two channel device this parameter is limiting the sum of the configured channel peak currents (P-0-0092).

For further information please look into the involved IDN:

P 0-0090 [▶ 282], P-0-0092 [▶ 264]

Due to the configured supply voltage, amplifier peak voltage (S-0-0110), channel peak current (P-0-0090), amplifier rated current (S-0-0112) and channel rated current (P-0-0091) may change.

AX5101 Amplifier peak current

AX5101 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	4.500
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5103 Amplifier peak current

AX5103 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	7.500
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5106 Amplifier peak current

AX5106 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	13.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5112 Amplifier peak current

AX5112 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	26.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5118 Amplifier peak current

AX5118 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	36.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5125 Amplifier peak current

AX5125 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	50.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5101 Amplifier peak current

AX5140 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	80.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5160 Amplifier peak current

AX5160 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	120.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5172 Amplifier peak current

AX5172 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	144.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5190 Amplifier peak current

AX5190 attributes

Name	Value
Format	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	180.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5191 Amplifier peak current

AX5191 attributes

Name	Value
Format	udec
Data length	32
Decimal point	3
Min value	-
Max value	-
Default value	180.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5192 Amplifier peak current

AX5192 attributes

Name	Value
Format	udec
Data length	32
Decimal point	3
Min value	-
Max value	-
Default value	215.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5193 Amplifier peak current

AX5193 attributes

Name	Value
Format	udec
Data length	32
Decimal point	3
Min value	-
Max value	-
Default value	221.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5201 Amplifier peak current

AX5201 attributes

Name	Value
Format	udec
Data length	32
Decimal point	3
Min value	-
Max value	-
Default value	10.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5203 Amplifier peak current

AX5203 attributes

Name	Value
Format	udec
Data length	32
Decimal point	3
Min value	-
Max value	-
Default value	20.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5206 Amplifier peak current

AX5206 attributes

Name	Value
Format	udec
Data length	32
Decimal point	3
Min value	-
Max value	-
Default value	26.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

S-x-0111 Motor continuous stall current

The motor continuous stall current I_0 is the current at which the motor produces the continuous standstill torque / force M_0 / F_0 according to the motor specification sheet.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	0.000
Max value	-
Unit	A
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0111 - S-7-0111. Ex factory, all values are identical.

S-0-0112 Amplifier rated current

The amplifier rated current is a hardware related limit, which means that continuous torque / force is limited. In case of a two channel device this parameter is limiting the sum of the configured channel rated currents (P-0-0093).

For further information please look into the involved IDN:

P-0-0093 [▶ 291]

Due to the configured supply voltage, amplifier peak voltage (S-0-0110), channel peak current (P-0-0090), amplifier rated current (S-0-0112) and channel rated current (P-0-0091) may change.

AX5101 Amplifier rated current

AX5101 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	1.500
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5103 Amplifier rated current

AX5103 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	3.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5106 Amplifier rated current

AX5106 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	6.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5112 Amplifier rated current

AX5112 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	12.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5118 Amplifier rated current

AX5118 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	18.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5125 Amplifier rated current

AX5125 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	25.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5140 Amplifier rated current

AX5140 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	40.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5160 Amplifier rated current

AX5160 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	60.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5172 Amplifier rated current

AX5172 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	72.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5190 Amplifier rated current

AX5190 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	90.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5191 Amplifier rated current

AX5191 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	110.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5192 Amplifier rated current

AX5192 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	143.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5193 Amplifier rated current

AX5193 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	170.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5201 Amplifier rated current

AX5201 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	3000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5203 Amplifier rated current

AX5203 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	6000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5206 Amplifier rated current

AX5206 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	12.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

S-x-0113 Maximum motor speed

The parameter contains the maximum permissible motor speed, see motor specification. If this value is exceeded, an overspeed error is generated.

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	0
Default	3000
Max value	50000
Unit	rpm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0113 - S-7-0113. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0091 [▶ 80], S-0-0095 [▶ 82], S-0-0390 [▶ 184]

S-0-0119 Current loop proportional gain 2

The parameter contains the value for the proportional gain of the PI current controller for the field-generating current (I_d).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	0.0
Max value	1000.0
Unit	V/A
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

As long as this parameter is 0, the current controller for the field-generating current uses the same proportional gain as the controller for the torque-/force-generating current (S-0-0106).

For further information please look into the involved IDN:

S-0-0106 [▶ 89]

S-0-0120 Current control loop integral action time 2

The parameter contains the integral action time for the field-generating current (I_d) in the PI current controller.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.1
Default	13.0
Max value	3000.0
Unit	ms
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0107 [▶ 90]

S-0-0124 Standstill window

The parameter contains a velocity threshold value, which is used to detect a motor or axis standstill.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	0
Default	89478
Max value	17895697
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

If the magnitude of actual velocity falls below the value of this parameter, the axis velocity is in the so-called standstill window. This results in bit 1 of S-0-0013 being set. In addition, this window is evaluated in the AxisStateMachine. Further actions are executed, depending on this threshold value. For example, in motors with holding brake, the brake is engaged depending on this window. Default (89478) equates to 5 rpm.

For further information please look into the involved IDN:

S-0-0207 [▶ 153], S-0-0013 [▶ 31], S-0-0040 [▶ 60]

Additional functional description

See also AxisStateMachine documentation (to do!).

S-0-0126 Torque threshold Tx / Fx

The parameter contains the torque threshold Tx / Fx. If the torque / force feedback absolute value exceeds the torque / force threshold Tx / Fx, the drive sets the status 'T/F >= Tx/Fx' in C3D.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	0.0
Max value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0013 [▶ 31], S-0-0086 [▶ 79]

S-0-0130 Probe value 1 positive edge

The parameter contains the value which is stored in the probe unit in the event of a positive edge at its signal input.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

As "source" for this value, the actual position value of feedback system 1 (S-0-0051) can be selected, for example. In this case, the actual position of feedback 1 at the time of the positive edge of the configured signal is stored here.

For further information please look into the involved IDN:

S-0-0051 [▶ 67], S-0-0053 [▶ 68], S-0-0076 [▶ 70], S-0-0079 [▶ 72], P-0-0250 [▶ 537]

Additional functional description

AX5000 / Probe unit

Also see about this

- P-0-0250 Probe 1 value source [▶ 537]

S-0-0131 Probe value 1 negative edge

The parameter contains the value which is stored in the probe unit in the event of a negative edge at its signal input.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	

As "source" for this value, the actual position value of feedback system 1 (S-0-0051) can be selected, for example. In this case, the actual position of feedback 1 at the time of the negative edge of the configured signal is stored here.

For further information please look into the involved IDN:

S-0-0051 [▶ 67], S-0-0053 [▶ 68], S-0-0076 [▶ 70], S-0-0079 [▶ 72], P-0-0250 [▶ 537]

Additional functional description

AX5000 / Probe unit

Also see about this

- P-0-0250 Probe 1 value source [▶ 537]

S-0-0134 Master control word

The parameter contains the master control word. This parameter is cyclically transferred in each communication cycle from the controller to the drive. It contains the set operating mode (bits 8, 9, 11), Halt Drive (bit 13) and controller enable (bit 14).

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

The controller selects the operation mode via the 3 "operation mode" bits 8, 9, 11 of S-0-0134. If operating mode 0 is selected here, the drive activates the operating mode selected in the IDN "PrimaryOperationMode" S-0-0032. If 1 is sent by the controller, the "first secondary mode" is activated, see S-0-0033.

Bit pattern:

Bit	Meaning
0 -5	**Reserved**
6	**Real time control bit 1** Real time control bit 1
7	**Real time control bit 2** Real time control bit 2
8-9	**Operation mode low** Operation mode low 0 = mode 0 or 4, depending on bit 11 1 = mode 1 or 5, depending on bit 11 2 = mode 2 or 6, depending on bit 11 3 = mode 3 or 7, depending on bit 11
10	**Control unit synchronisation bit** Control unit synchronisation bit IPOSYNC toggles with cycle time tNcyc and is used to synchronise the interpolation.
11	**Operation mode high** Operation mode high 0 = mode 0 to 3 1 = mode 4 to 7
12	**Reserved**
13	**Halt/ restart drive** Halt Drive/ Restart Drive 0 = Halt Drive 1 = Restart Drive
14	**Enable drive** Enable drive 0 = Drive not enabled 1 = enable Drive
15	**Drive On/Off** Drive On/Off 0 = drive off: When changing from 1 to 0: the maximum drive off delay time (IDN S-0-0273) is started, drive is decelerated as best as possible according to the emergency stop deceleration (IDN S-0-0429), followed by disabling of the torque/force at n min, after the drive off delay time (IDN S-0-0207). The power stage can remain in an activated state (only possible when bit 14=1). After the maximum drive off delay time (IDN S-0-0273) is elapsed, the locking of brake is initiated and the torque/force is disabled. 1 = drive on: When changing from 0 to 1: drive follows the command values of the control unit after the drive on delay time (IDN S-0-0206).

For further information please look into the involved IDN:

S-0-0099 [▶ 84]

S-0-0135 Drive status word

The parameter contains the current drive status.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

The status word is cyclically transferred to the controller via the process data channel. It is not explicitly listed in S-0-0016.

Bit pattern:

Bit	Meaning
0	**Reserved**
1	**Reserved**
2	**Reserved**
3	**Status command value processing** Set point processing status (during halt drive, drive controlled functions drive or programmed delay times) 0 = drive ignores set values 1 = drive observes set values
4	**Reserved**
5	**Reserved**
6	**Real time status bit** Real-time status bit 1 (a bit from another IDN can be displayed)
7	**Real time status bit** Real-time status bit 2 (a bit from another IDN can be displayed)
8 - 10	**Actual operation mode** Current operating mode (the drive reports the currently active mode here). See requirements in the MasterControlWord 0 = main mode IDN S-0-0032 1 = secondary mode 1 IDN S-0-0033 2 = secondary mode 2 IDN S-0-0034 3 = secondary mode 3 IDN S-0-0035 4 = rsvd 5 = rsvd 6 = rsvd 7 = rsvd
11	**Change bit for C3D** Drive information (S-0-0011) 0 = no change 1 = change
12	**Change bit for C2D** Drive warning (S-0-0012) 0 = no change 1 = change
13	**Drive shut-down error in C1D** Drive error (S-0-0013) 0 = not switched off 1 = drive is switched off due to an error
14- 15	**Ready to operate** Ready to operate 0 = Drive not ready for power up, internal checks not yet concluded successfully. 1 = Drive logic ready for main power on (power stage section). 2 = Drive ready and main power applied, drive is free of torque/force, power stage pulses are locked. 3 = Drive ready to operate, 'enable drive' is set and active. Power stage is active.

For further information please look into the involved IDN:

S-0-0099 [▶ 84]

S-x-0136 Positive acceleration limit value

The parameter limits the maximum drive acceleration to the specified value. The acceleration is positive if the magnitude of the velocity increases.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	2
Min value	0.52
Default	6283.18
Max value	10737418.24
Unit	rad/s^2
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

This parameter influences the axis control in all position- and velocity-controlled operating modes. The dynamics of the control-side set value specification should be lower than the limit configured here, because otherwise the axis cannot follow the specified acceleration, resulting in discrepancies between the set and actual positions (following error).

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0136 - S-7-0136. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0160 [▶ 126], S-0-0161 [▶ 127], S-0-0162 [▶ 128]

S-x-0137 Negative acceleration limit value

The parameter limits the maximum drive delay (negative acceleration) to the specified value. The acceleration is negative if the magnitude of the velocity decreases.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	2
Min value	0.52
Default	6283.18
Max value	10737418.24
Unit	rad/s^2
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

This parameter influences the axis control in all position- and velocity-controlled operating modes. The dynamics of the control-side set value specification should be lower than the limit configured here, because otherwise the axis cannot follow the specified acceleration, resulting in discrepancies between the set and actual positions (following error).

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0137 - S-7-0137. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0160 [▶ 126], S-0-0161 [▶ 127], S-0-0162 [▶ 128]

S-0-0143 Sercos interface version

The parameter contains the SoE interface specification implemented in the AX5000.

Attributes

Name	Value
Datatype	text
Data length in bit	80
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

The AX5000 has version 2.03 implemented.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0143-Sercos interface version / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0143-Sercos interface version / Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

String

S-0-0143-Sercos interface version MDT / String

Datatype	Size in bit	Offset	Properties
Enum	48	32	---

S-0-0149 Positive drive stop procedure command (pc)

The parameter contains the command: "Travel to fixed stop". This command disables following error monitoring of the drive.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

“Set and activate command” results in all monitoring being switched off, which otherwise would lead to a drive error S-0-0011 (drive shut down) if the drive is blocked by a fixed stop.
The command is confirmed positively if the following is true:
– |T | ≥ |Tlimit| (T_limit corresponds to the effective maximum or minimum of S-x-0092, S-x-0082, and S-x 0083 here.)
– The actual speed is the standstill window (nfeedback = 0)
Upon completion of the command, all monitoring is restored to the original state.

Bit pattern:

Bit	Meaning
0	**Cancel cmd** Cancel command 0 = disable 1 = enable
1	**Set cmd** Set command 0 = disable 1 = enable
2	**Reserved**
3	**Set & enable command** Set & enable command 0 = disable 1 = enable
4 -15	**Reserved**

For further information please look into the involved IDN:

S-0-0011 [▶ 26] and S-0-0189 [▶ 139]

S-0-0156 Velocity feedback value 2 (external feedback)

The parameter contains the second current velocity value. It is determined from the signals of the optional external feedback system 2. Scaling see S-0-0036.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-2 147 483 648
Default	0
Max value	2 147 483 647
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0036 [▶ 58], S-0-0044 [▶ 62], S-0-0045 [▶ 63], S-0-0046 [▶ 64]

S-0-0159 Monitoring window

This parameter specifies the maximum permissible deviation between the set and actual positions. If this difference, which is also referred to as position lag, exceeds the value specified in this parameter, the drive sets the C1D error bit 11 of S-0-0011.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	0
Default	1 048 575
Max value	4 294 967 295
Unit	inc
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Following error monitoring in the AX5000 is only active if the value of S-0-0159 > 0. If the higher-level controller (NC) monitors the following error (S-0-0189), this parameter can be left at the "default" value of 1 048 575. If the controller does not deal with this task, a value adapted to the application must be specified here.

For further information please look into the involved IDN:

S-0-0076 [▶ 70], S-0-0079 [▶ 72], S-0-0189 [▶ 139]

S-0-0160 Acceleration data scaling type

This parameter can be used to select different scaling types for the acceleration data in the drive. The drive represents associated parameters at the selected scale.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	10
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

In the AX5000, percentage scaling is selected via S-0-0086 "Torque/force data scaling type". S-0-0160 is therefore not evaluated.

Bit pattern:

Bit	Meaning
0 -2	**Scaling method** Scaling method 0 = no scaling 1 = linear scaling 2 = rotary scaling 3 = ramp time (see S-0-0446)
3	**Scaling type** Scaling type 0 = preferred scaling 1 = parameter scaling
4	**Units for linear / rotational scaling** Units for linear / rotational scaling 0 = meter / radian 1 = inch / reserved
5	**Time unit** 0 = seconds 1 = reserved
6	**Data reference** 0 = at the motor shaft 1 = at the load
7 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0086 [▶ 79], S-0-0160 [▶ 126]

S-0-0161 Acceleration data scaling factor

The parameter contains the scaling factor for all acceleration data in the drive.

Attributes

Name	Value
Datatype	udec
Data length	16
Decimal point	0
Min value	0
Default	1
Max value	1
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

This parameter defines the scaling factor for all acceleration data in a drive. This parameter is not changeable and the acceleration data scaling is set to 1/1000 of the 'configured channel peak torque /f orce' (IDN P-0-0094).

For further information please look into the involved IDN:

S-0-0086 [▶ 79], P-0-0092 [▶ 282]

S-0-0162 Acceleration data scaling exponent

The parameter contains the scaling exponent for all acceleration data in the drive.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	-32
Default	-2
Max value	32
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

This parameter defines the scaling factor for all acceleration data in a drive. This parameter is not changeable and the acceleration data scaling is set to 1/1000 of the 'configured channel peak torque / force' (IDN P-0-0094).

Bit patterns

Bit	Meaning
0-14	**Exponent**
7 - 15	**Sign of the exponent** Sign of the exponent 0 = positive 1 = negative

For further information please look into the involved IDN:

S-0-0086 [▶ 79], P-0-0092 [▶ 282]

S-0-0163 Weight counterbalance

This parameter is used to program the counterbalance (torque, force) of vertically positioned (hanging) axes in the positive or negative effective direction. The value is related to the configured channel peak torque / force (P-0-0094).

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min value	-100.0
Default	0.0
Max value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Determine compensation torque: In closed-loop operation read out the content of S-0-0084 when the axis has stopped and transfer the value to S-0-0163. The base for the percentage figure is P-0-0092.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0084 [▶ 77], S-0-0086 [▶ 79], S-0-0163 [▶ 129]

S-0-0169 Probe control parameter

The parameter specifies which edges are activated by the command S-0-0170.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0	**Probe 1 positive edge** Probe 1, positive edge 0 = positive edge is not active 1 = positive edge is active
1	**Probe 1 negative edge** Probe 1 negative edge 0 = negative edge is not active 1 = negative edge is active
2-4	**Reserved**
5	**Mode probe 1** Mode probe 1 0 = individual measurement 1 = continuous measurement
6-7	**Reserved**
8	**Auto activation** Auto activation 0 = activation with S-0-0170 1 = auto-activation of SafeOp after Op
9 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0170 [▶ 131]

Additional functional description

AX5000 / Probe Unit

S-0-0170 Probing cycle procedure command (pc)

The parameter contains the command measuring probe cycle. If the master sets and activates this command, the drive responds to S-0-0405, as specified in S-0-0169. The "probe unit" is activated.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

If S-0-0170 is activated, the controller can start numerous measurements. This command should be stopped as soon as the controller has completed the measurements.

Bit pattern:

Bit	Meaning
0	Cancel cmd Cancel command 0 = disable 1 = enable
1	**Set cmd** Set command 0 = disable 1 = enable
2	**Reserved**
3	**Set & enable command** Set & enable command 0 = disable 1 = enable
4 -15	**Reserved**

For further information please look into the involved IDN:

S-0-0169 [▶ 130], S-0-0405 [▶ 186]

S-0-0179 Probe status

If the drive stores one or more measured values, the corresponding bits are set in this parameter.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0	**Probe 1 positive latched** Probe 1 positive latched 0 = not latched 1 = latched
1	**Probe 1 negative latched** Probe 1 negative latched 0 = not latched 1 = latched
2- 15	**Reserved**

For further information please look into the involved IDN:

S-0-0170 [▶ 131], S-0-0405 [▶ 186]

S-0-0185 Length of the configurable data record in the AT

The parameter specifies the maximum length of the user data in the drive telegram (AT) in bytes.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Default value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Since the AX5000 allows the application telegram in S-0-0015, it supports this parameter.

For further information please look into the involved IDN:

S-0-0015 [▶ 32]

S-0-0186 Length of the configurable data record in the MDT

The parameter contains the maximum length of the user data in the MDT (master data telegram) in bytes.

Attributes

Name	Value
Datatype	udec
Data length in bit	2
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	Byte
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The AX5000 allows the telegram type "application telegram" in S-0-0015 and therefore supports this list.

For further information please look into the involved IDN:

S-0-0015 [▶ 32]

S-0-0187 IDN-list of configurable data in the AT

The parameter contains a list of parameters whose data can be output cyclically by the drive as actual values.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

The AX5000 allows the telegram type "application telegram" in S-0-0015 and therefore supports this list.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0015 [▶ 32]

Actual length

S-0-0187-IDN-list of configurable data in the AT / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0187-IDN-list of configurable data in the AT/ Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

All operation data

S-0-0187-IDN-list of configurable data in the AT/ All operation data

Datatype	Size in bit	Offset	Properties
	11104 from Rev. 210: 12032	32	---

S-0-0188 IDN-list of configurable data in the MDT

The parameter contains a list of parameters whose data can be processed cyclically by the drive as set values.

Attributes

Name	Value
Datatype	idn
Data length in bit	12064
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The AX5000 allows the telegram type "application telegram" in S-0-0015 and therefore supports this list.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0015 [▶ 32]

Actual length

S-0-0188-IDN-list of configurable Data in the MDT / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0188-IDN-list of configurable Data in the MDT / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

All operation data

S-0-0188-IDN-list of configurable Data in the MDT / All operation data

Datatype	Size in bit	Offset in bit	Properties
	11104 from Rev 210: 12032	32	---

S-0-0189 Following distance

The parameter contains the position lag, i.e. the current difference between the position command value (S-0-0047) and the position feedback value. Depending on the current operating mode, the position feedback value 1 (S-0-0051) or 2 (S-0-0053) is used.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-
Default	0.0
Max value	-
Unit	inc
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Position lag = position command value - position feedback value

For further information please look into the involved IDN:

S-0-0051 [▶ 67], S-0-0053 [▶ 68], S-0-0047 [▶ 65], S-0-0076 [▶ 70], S-0-0079 [▶ 72],

S-x-0196 Motor rated current

The motor rated current is the current at which the motor produces the rated torque / force according to the motor specification.

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min value	-
Default	0.000
Max value	-
Unit	A
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0196 - S-7-0196. Ex factory, all values are identical.

S-0-0200 Heatsink warning temperature

When the heatsink temperature exceeds the warning temperature value, the drive sets the warning bit for heatsink overtemperature in C2D (IDN S-0-0012).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	60.0
Default	70.0
Max value	80.0
Unit	C°
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0012 [▶ 29]

Also see about this

- S-0-0203 Heatsink shut down temperature [▶ 143]
- S-0-0384 Heatsink temperature [▶ 183]

S-0-0201 Motor warning temperature

If the temperature in the motor exceeds this value, the drive sets change bit 1 of S-0-0012, and a warning is generated.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	40.0
Default	80.0
Max value	150.0
Unit	°C
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0012 [▶ 29]

S-0-0203 Heatsink shut down temperature

When the heatsink temperature exceeds the shut-down temperature value, the drive sets the bit for heatsink overtemperature shut-down in C1D (IDN S-0-0011).

For further information please look into the involved IDN:

S-0-0011 [▶ 26]

Also see about this

- S-0-0200 Heatsink warning temperature [▶ 141]
- S-0-0384 Heatsink temperature [▶ 183]

AX5101 Heatsink shut down temperature

Attributes AX5101

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5103 Heatsink shut down temperature

Attributes AX5103

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5106 Heatsink shut down temperature

Attributes AX5106

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5112 Heatsink shut down temperature

Attributes AX5112

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5118 Heatsink shut down temperature

Attributes AX5118

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5125 Heatsink shut down temperature

Attributes AX5125

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5201 Heatsink shut down temperature

Attributes AX5201

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5203 Heatsink shut down temperature

Attributes AX5203

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5206 Heatsink shut down temperature

Attributes AX5206

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5140 Heatsink shut down temperature

Attributes AX5140

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 85.0
Max value	0.0; from Rev. 210: 85.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5160 Heatsink shut down temperature

Attributes AX5160

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5172 Heatsink shut down temperature

Attributes AX5172

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5190 Heatsink shut down temperature

Attributes AX5190

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5191 Heatsink shut down temperature

Attributes AX5191

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5192 Heatsink shut down temperature

Attributes AX5x01 – AX5125

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 80.0
Max value	0.0; from Rev. 210: 80.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5193 Heatsink shut down temperature

Attributes AX5x01 – AX5125

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0; from Rev. 210: 50.0
Default	120.0; from Rev. 210: 90.0
Max value	0.0; from Rev. 210: 90.0
Unit	°C
Changeable in EtherCAT state	No; from Rev. 210: PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

S-0-0204 Motor shut down temperature

If the temperature of the motor exceeds this value, the drive sets error bit 2 of S-0-0011, and an error is generated. FD07 "Motor overtemperature shutdown" is issued as the corresponding error code.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	0.0
Default	100.0
Max value	150.0
Unit	°C
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0011 [▶ 26]

S-0-0206 Drive on delay time

After torque / force is activated (bit 14, drive status is set) "drive on delay time" is started. The drive follows the command values after the "drive on delay time" has elapsed.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	10000
Default	100
Max value	150
Unit	ms
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The value of this parameter must be exactly adapted to the motor holding brake used, so that on the one hand operation against the engaged brake is avoided, and on the other hand sagging of the axis is avoided with vertical axes.

For further information please look into the involved IDN:

S-0-0011 [▶ 26], S-0-0135 [▶ 118],

S-0-0207 Drive off delay time

The parameter contains the delay “Drive off delay time”.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	0
Default	150
Max value	10000
Unit	ms
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

After "drive off" (bit 15 of the master control word) is reset and n_{min} is reached, the drive off delay time is started and the locking of the brake is initiated. The torque / force remains activated in the drive until this drive off delay time is elapsed. The motor brake management uses this time to close the motor brake before the torque/force is switched off.

For further information please look into the involved IDN:

S-0-0011 [▶ 26], S-0-0134 [▶ 116], S-0-0124 [▶ 112], S-0-0273 [▶ 162]

Also see about this

- S-0-0273 Maximum drive off delay time [▶ 162]

S-0-0216 Switch parameter set (pc)

The parameter contains the parameter set switchover command. This command can be used to switch between different data sets of a parameter set. The drive switches to the data set that is specified with S-0-0217.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0	**Cancel cmd** Cancel command 0 = disable 1 = enable
1	**Set cmd** Set command 0 = disable 1 = enable
2	**Reserved**
3	**Set & enable command** Set & enable command 0 = disable 1 = enable
4 -15	**Reserved**

For further information please look into the involved IDN:

S-0-0217 [▶ 155]

S-0-0217 Parameter set preselection

The parameter specifies which data set 0 - 7 is activated with the command S-0-0216.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	7
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 200

If the parameter does not enable parameter set switchover, the drive only accepts data set 0. Data set 0 must exist in each drive. This data set is activated during initialisation.

Bit patterns

Bit	Meaning
0 -2	**Parameter set preselection** Parameter set preselection for parameter set switchover 0 = **Parameter set 0** Data set 0 1 = **Parameter set 1** Data set 1 2 = **Parameter set 2** Data set 2 3 = **Parameter set 3** Data set 3 4 = **Parameter set 4** Data set 4 5 = **Parameter set 5** Data set 5 6 = **Parameter set 6** Data set 6 7 = **Parameter set 7** Data set 7
3 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0216 [▶ 154]

S-0-0219 IDN-list of parameter set

The parameter contains a list of parameters for which parameter set switchover is possible. For the parameters S-0-xxxx and P-0-xxxx listed in this list, data sets 1 to 7 are also supported, i.e. the parameters S-y-xxxx and P-y-xxxx with y = 1 to 7.

Attributes

Name	Value
Datatype	idn
Data length in bit	11136, from Rev. 210: 12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0216 [▶ 154]

Actual length

S-0-0219-IDN-list of configurable data in the AT / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0219-IDN-list of parameter set / Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

All operation data

S-0-0219-IDN-list of parameter set / All operation data

Datatype	Size in bit	Offset	Properties
	11104, from Rev. 210: 12032	32	---

S-0-0254 Actual parameter set

The parameter contains the number of the current data set.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For a parameter set switchover the data set must be correct and specified in S-0-0217. It is not possible to switch the drive to EtherCAT state OP if the data set 0 is not valid.

Bit patterns

Bit	Meaning
0 -2	**Structure of the actual parameter set** Structure of the actual parameter set 0 = data set 0 activated 1 = data set 1 activated 2 = data set 2 activated 3 = data set 3 activated 4 = data set 4 activated 5 = data set 5 activated 6 = data set 6 activated 7 = data set 7 activated
3 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0217 [▶ 155]

S-0-0256 Multiplication factor 1 (motor feedback)

The parameter returns the factor by which the motor feedback signal 1 in the drive is multiplied.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0051 [▶ 67]

S-0-0257 Multiplication factor 2 (external feedback)

The parameter returns the factor by which the external feedback signal in the drive is multiplied.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

S-0-0267 Password

The parameter can be used to enable or disable write protection for password-protected IDNs. (The interface) EtherCAT supports passwords to protect selected parameters.

Attributes

Name	Value
Datatype	text
Data length in bit	272
Decimal point	0
Min value	-
Default	AX5000
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The password write protection is disabled if

- this parameter sent to the drive with the valid password. Parameters with password write protection can then be changed.

The password write protection is disabled if

- the power supply of the drive is initially interrupted, then restored, or
- if this parameter is sent to the drive without a valid password.

Password levels 1 and 2 exist for AX5000.
Please contact Beckhoff support regarding passwords for password write protection.

NOTE

Possible damage and failures caused by changes in password-level 2

Great care must be taken when making changes in IDNs protected in this way, because a zero offset of the measuring system, for example, could be overwritten irrevocably.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0267-Password / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0267 Password / Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

All operation data

S-0-0267 Password / All operation data

Datatype	Size in bit	Offset	Properties
	240	32	---

S-0-0273 Maximum drive off delay time

This parameter specifies the maximum time interval that is made available to the motor for coming to a halt after the controller has been disabled (bit 15 of S-0-0134).

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	0
Default	10000
Max value	100000
Unit	ms
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

After "drive off" (bit 15, control word) is reset, the maximum drive off delay time is started. After the maximum drive off delay time is elapsed, the locking of the brake is initiated and the torque / force is disabled independent of the actual motor speed.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0134 [▶ 116], S-0-0207 [▶ 153]

S-0-0274 Received drive addresses

The parameter contains the address of the EtherCAT slave that is read from the register "Configured Station Address" of the ESC (EtherCAT Slave Controller).

Attributes

Name	Value
Datatype	udec
Data length in bit	48
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0274-Received drive addresses / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0274-Received drive addresses / Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

Data

S-0-0274-Received drive addresses / Data

Datatype	Size in bit	Offset	Properties
Enum	16	32	---

S-0-0292 List of supported operation modes

The parameter contains the codes of all operating modes that are supported by the drive firmware.

Attributes

Name	Value
Datatype	hex
Data length in bit	224
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210: additional operating modes “using dynamic MDT”

The current mode is displayed in hexadecimal form in S-0-0292. The AX5000 supports the following operating modes:

Value	Description	S-0-0292
0	**no mode of operation** no mode of operation	0
1	**torque control** Torque control	1
2	**velo control** Velocity control	2
3	**Pos ctrl feedback 1** Position control, feedback system 1	3
4	**Pos ctrl feedback 2** Position control, feedback system 2	4
11	**Pos ctrl feedback 1 lag less** Position control lag less, feedback system 1	11
12	**Pos ctrl feedback 2 lag less** Position control lag less, feedback system 2	12
32769	**torque control using dynamic MDT** Torque control using dynamic MDT	327 69
32770	**velo control using dynamic MDT** Velocity control using dynamic MDT	327 70
32771	**Pos ctrl feedback 1 using dynamic MDT** Position control using dynamic MDT, feedback system 1	327 71
32772	**Pos ctrl feedback 2 using dynamic MDT** Position control using dynamic MDT, feedback system 2	327 72
32779	**Pos ctrl feedback 1 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 1	327 79
32780	**Pos ctrl feedback 2 lag less using dynamic MDT** Position control lag less using dynamic MDT, feedback system 2	327 80

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Additional functional description

AX5000 / operating modes

Actual length

S-0-0292-List of supported operation modes / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

S-0-0292-list of supported operation modes / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

String

S-0-0292-list of supported operation modes / String

Datatype	Size in bit	Offset in bit	Properties
	192	32	---

S-0-0295 Drive enable delay time

The parameter contains the delay “Drive enable delay time”. This delay time starts as soon as bit 14 is set by S-0-0134. It delays the power supply of the motor by the set time. Within this time it is then possible to switch a contactor that may be present in the motor cable.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min value	0
Default	0
Max value	10000
Unit	ms
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0134 [▶ 116]

S-0-0296 Velocity feed forward gain

The parameter describes velocity feed forward gain. This parameter is active in mode "Position control lag less" and is used to reduce the velocity-dependent position lag.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min value	0.00
Default	100.00
Max value	120.00
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

S-0-0301 Allocation of real-time control bit 1

Bits 6 and 7 of S-0-0134 are used to define two real-time control bits. They can be updated by the master during each communication cycle. This parameter assigns an IDN to real-time control bit 1 (bit 6 of S-0-0134). In all instances bit 0 of the selected parameter is transferred.

Attributes

Name	Value
Datatype	idn
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

All IDNs that can be changed in OP can be cyclically assigned to the real-time control bits.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0134 [▶ 116]

S-0-0303 Allocation of real-time control bit 2

Bits 6 and 7 of S-0-0134 are used to define two real-time control bits. They can be updated by the master during each communication cycle. This parameter assigns an IDN to real-time control bit 2 (bit 7 of S-0-0134). In all instances bit 0 of the selected parameter is transferred.

Attributes

Name	Value
Datatype	idn
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

All IDNs that can be changed in OP can be cyclically assigned to the real-time control bits.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0134 [▶ 116]

S-0-0305 Allocation of real-time status bit 1

Two real-time status bits are defined in bits 6 and 7 of S-0-0135. They are updated by the drive during each communication cycle, together with S-0-0135. This parameter assigns an IDN to real-time status bit 1 (bit 6 of S-0-0135). In all instances bit 0 of the selected parameter is transferred.

Attributes

Name	Value
Datatype	idn
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0135 [▶ 118]

S-0-0307 Allocation of real-time status bit 2

Two real-time status bits are defined in bits 6 and 7 of S-0-0135. They are updated by the drive in each communication cycle, together with S-0-0135. This parameter assigns an IDN to real-time status bit 2, which is indicated in bit 7 of S-0-0135. In all instances bit 0 of the selected parameter is transferred.

Attributes

Name	Value
Datatype	idn
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0135 [▶ 118]

S-0-0347 Velocity error

The parameter contains the current difference between set velocity and actual velocity.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0044 [▶ 62], S-0-0045 [▶ 63], S-0-0046 [▶ 64]

S-0-0348 Acceleration feed forward gain

The parameter contains the acceleration pre-control. This parameter is active in mode "Position control lag less". It is used in selected applications to additionally reduce following errors during acceleration and deceleration.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	4
Min value	0.0000
Default	0.0000
Max value	3.2767
Unit	% / (rad/s²)
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 203

The acceleration pre-control generates a set current that is added to the control value of the velocity controller (pre-control). This parameter can be used to adapt the effect of acceleration pre-control to the application, by linearly scaling the acceleration calculated by dual differentiation of the set position. The acceleration pre-control can only be used in connection with cubic interpolation (P-0-0556), because a set acceleration can only be calculated from a third-order interpolation.

When a feature bit is set (e.g. P-0-0010; Feature Bit 16), the calculation is internal.

Explanation:

m = torque
α = angular acceleration of the motor shaft
J_tot = total moment of inertia active at the motor
K_T = torque constant of the motor
i_q = torque-generating motor current

Table 1:

Calculation example:	
$m = \alpha \cdot J_{Ges.}$ $m = K_T \cdot i_q$	$i_q = \alpha \cdot \frac{J_{Ges}}{K_T}$ $i_q = \alpha \cdot S\text{-}0\text{-}0348$

Parameter calculation:

J_{tot} = kg m^2

K_T = Nm / A_{rms}

P-0-0092 = A_{rms}

100% = Full compensation

Example:

$$S\text{-}0\text{-}0348 = \frac{0.0005\ kg\ m^2}{1.5\ Nm\ /\ A_{rms}} \cdot \frac{100\ \%}{7\ A_{rms}} = 0.0048\ [\%/(rad/s^2)]$$

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

P-0-0505 [▶ 749], P-0-0092 [▶ 282], P-0-0556 [▶ 794]

S-x-0372 Drive Halt acceleration bipolar

This parameter specifies the deceleration with which the drive is decelerated to the state "Drive Halt" after a change in the drive state machine. See "Axis State Machine".

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	2
Min value	0.52
Default	6283.18
Max value	10 737 418.24
Unit	rad/s^2
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0372 - S-7-0372. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0134 [▶ 116], S-0-0160 [▶ 126], S-0-0161 [▶ 127], S-0-0162 [▶ 128]

S-0-0374 Procedure command error list

The parameter contains a list of error codes that occurred during execution of a command (e.g. P-0-0166).

Attributes

Name	Value
Datatype	hex
Data length in bit	992
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0375 [▶ 178]

Additional functional description

AX5000 / diagnostic system

Actual length

S-0-0374-Procedure command error list / Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0374-Procedure command error list / Maximum length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

String

S-0-0374-Procedure command error list / String

Datatype	Size in bit	Offset	Properties
	960	32	---

S-0-0375 Diagnostic numbers list

The parameter contains a list of diagnostic messages/error codes (diagnostic number), e.g. "Motor overtemperature" or "Cable break of a feedback system".

Attributes

Name	Value
Datatype	hex
Data length in bit	992
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

The list is cancelled when the Reset command is executed.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Additional functional description

AX5000 / diagnostic system

For further information please look into the involved IDN:

S-0-0099 [▶ 84]

Actual length

S-0-0375 Diagnostic numbers list/ Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0375 Diagnostic numbers list/ Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

Elements

S-0-0375 Diagnostic numbers list/ Elements

Datatype	Size in bit	Offset	Properties
	960	32	---

S-0-0380 DC bus voltage

The parameter contains the DC link voltage measured by the drive.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	-
Default	0
Max value	-
Unit	V
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

S-0-0381 DC bus current

The parameter contains the current measured by the drive. Positive values indicate current flowing from the DC link capacitors to the inverter.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	3
Min value	-
Default	0.000
Max value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

S-0-0383 Motor temperature

The parameter contains the motor temperature (actual value). If the warning threshold (S-0-0201) is exceeded, bit 2 is set by S-0-0012 (C2D). If the error threshold (S-0-0204) is exceeded, the drive is shut down with an error (C1D).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	-
Default	0.0
Max value	-
Unit	°C
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0011 [▶ 26], S-0-0012 [▶ 29], S-0-0201 [▶ 142], S-0-0204 [▶ 151]

S-0-0384 Heatsink temperature

The drive places the measured (actual) heatsink temperature in this parameter.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min value	-
Default	0.0
Max value	-
Unit	°C
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0011 [▶ 26], S-0-0012 [▶ 29], S-0-0200 [▶ 143], S-0-0203 [▶ 143]

Also see about this

- S-0-0200 Heatsink warning temperature [▶ 141]

S-0-0390 Diagnostic number

This parameter shows is current diagnostic number (error code / warning code / info code).

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0095 [▶ 82], S-0-0375 [▶ 178]

Additional functional description

AX5000 / diagnostic system

S-0-0403 Position feedback value status

The parameter contains the status of the position feedback values connected to the feedback systems.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Bit pattern:

Bit	Meaning
0	**Reserved**
1	**Status of position feedback value 1** Status of position feedback value 1 0 = relative 1 = referenced
2	**Status of position feedback value 2** Status of position feedback value 2 0 = relative 1 = referenced
3 – 15	**Reserved**

For further information please look into the involved IDN:

S-0-0051 [▶ 67]; S-0-0053 [▶ 68]

S-0-0405 Probe 1 enable

This parameter is used to activate probe unit 1 of the drive. This parameter can be linked with a real-time control bit (S-0-0301), so that activation is possible via the MasterControlWord (S-0-0134).

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	No

The drive checks this parameter as long as S-0-0170 is enabled. To start a new measuring probe cycle, the value of this IDN must be changed from 0 to 1.

Bit pattern:

Bit	Meaning
0	**Probe 1** Probe 1 0 = not enabled 1 = enabled
1 – 15	**Reserved**

For further information please look into the involved IDN:

S-0131 [▶ 115], S-0-0170 [▶ 131], S-0-0301 [▶ 169]

Additional functional description

AX5000 / Probe Unit

Also see about this

- S-0-0130 Probe value 1 positive edge [▶ 114]
- S-0-0303 Allocation of real-time control bit 2 [▶ 170]

S-0-0409 Probe 1 positive latched (Counter)

This parameter indicates whether a positive edge occurred at Probe 1.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

An IDN can be assigned to this parameter. This parameter can be assigned to a real-time status bit via S-0-0305. The drive only sets bit 0 of this parameter if the command S-0-0170 is enabled, S-0-0405 is set to 1, and the positive edge of S-0-0401 is enabled.
If a positive edge occurs at the input, the drive saves the parameterised source value in S-0-0130. The drive resets this bit, if the controller cancels the command S-0-0170, or if S-0-0405 is reset to 0.

Bit pattern:

Bit	Meaning
0	**Probe 1** Probe 1 0 = not enabled 1 = enabled
1 – 15	**Reserved**

For further information please look into the involved IDN:

S-0-0130 [▶ 114], S-0-0170 [▶ 131], S-0-0179 [▶ 132], S-0-0305 [▶ 171], S-0-0405 [▶ 186]

Additional functional description

AX5000 / Probe unit

Single mode

S-0-0409 Probe 1 positive latched / Single mode

Datatype	Size in bit	Offset	Properties
Enum	16	0	---

Probe 1 positive latched

S-0-0409 Probe 1 positive latched / Probe 1 positive latched

Datatype	Size in bit	Offset	Properties
Enum	1	0	---

Bit patterns

Value	Description
0	not latched
1	latched

Reserved

S-0-0409 Probe 1 positive latched / Reserved

Datatype	Size in bit	Offset	Properties
Uint15	15	1	---

Continuous mode

S-0-0409 Probe 1 positive latched / Continuous mode

Datatype	Size in bit	Offset	Properties
Uint	16	0	---

S-0-0410 Probe 1 negative latched (Counter)

This parameter indicates whether a positive edge occurred at Probe 1.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

This parameter can be assigned an IDN, so that a real-time status bit can be assigned to this parameter. The drive only sets bit 0 of this parameter if the command S-0-0170 is enabled, S-0-0405 is set to 1, and the negative edge of S-0-0401 is enabled.

If a negative edge occurs at the input, the drive saves the parameterised source value in S-0-0131. The drive resets this bit, if the controller cancels the command S-0-0170, or if S-0-0405 is reset to 0.

Bit pattern:

Bit	Meaning
0	**Probe 1** Probe 1 0 = not enabled 1 = enabled
1 – 15	**Reserved**

For further information please look into the involved IDN:

S-0-0131 [▶ 115], S-0-0170 [▶ 131], S-0-0179 [▶ 132], S-0-0305 [▶ 171], S-0-0405 [▶ 186]

Additional functional description

AX5000 / Probe unit

Single mode

S-0-0409 Probe 1 negative latched / Single mode

Datatype	Size in bit	Offset	Properties
Enum	16	0	---

Probe 1 positive latched

S-0-0409 Probe 1 negative latched / Probe 1 negative latched

Datatype	Size in bit	Offset	Properties
Enum	1	0	---

Bit patterns

Value	Description
0	not latched
1	latched

Reserved

S-0-0409 Probe 1 negative latched / Reserved

Datatype	Size in bit	Offset	Properties
Uint15	15	1	---

Continuous mode

S-0-0409 Probe 1 negative latched / Continuous mode

Datatype	Size in bit	Offset	Properties
Uint	16	0	---

S-x-0429 Emergency stop deceleration

When the control unit activates 'Drive OFF' with enable drive bit set (control word, bit 15 = 0, bit 14 = 1) the drive decelerates as best as possible limited by the emergency stop deceleration and emergency stop jerk (P-0-0353), followed by disabling of the torque / force at n_{min}.

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	2
Min value	0.52
Default	6283.18
Max value	10737418.24
Unit	rad/s^2
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as S-0-0429 - S-7-0429. Ex factory, all values are identical.

For further information please look into the involved IDN:

S-0-0134 [▶ 116], S-0-0160 [▶ 126], S-0-0161 [▶ 127], S-0-0162 [▶ 128]

S-0-0432 Serial number drive control

The parameter contains the serial number of the drive. It is used to uniquely identify the AX5000.

Attributes

Name	Value
Datatype	text
Data length in bit	176
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0432 Serial number drive control/ Actual length

Datatype	Size in bit	Offset	Properties
UINT	16	0	---

Max length

S-0-0432 Serial number drive control/ Max length

Datatype	Size in bit	Offset	Properties
UINT	16	16	---

S-0-0435 Operating time drive control

The parameter contains the operating time of the control electronics of the drive. This time is continuously incremented and saved internally during operation, whenever the 24 V supply voltage is present.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	s
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

S-0-0436 Operating time power stage

The parameter contains the operating time of the power electronics of the drive. It is incremented continuously when the motor is energised. The value is saved internally.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	s
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

S-0-0903 Configuration list of dynamic AT

The parameter contains a list of IDNs, which are transferred in the dynamic drive telegram (dynamic DT) from the drive to the controller. Only IDNs listed in S-0-0905 are permitted as cyclic data in the dynamic drive telegram (dynamic DT).

Attributes

Name	Value
Datatype	IDN
Data length in bit	1088
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0905 [▶ 197]

Actual length

S-0-0903-Configuration list of dynamic AT / Actual length

Datatype	Size in bits	Offset
UINT	16	0

Max length

S-0-0903-Configuration list of dynamic AT / Max length

Datatype	Size in bits	Offset
UINT	16	16

Configured AT IDNs

S-0-0903-Configuration list of dynamic AT / Configured AT IDNs

Datatype	Size in bits	Offset
	1056	32

S-0-0904 Configuration list of dynamic MDT

The parameter contains a list of IDNs, which are transferred in the dynamic master data telegram (dynamic MDT) from the controller to the drive. Only IDNs listed in S-0-0906 are permitted as cyclic data in the dynamic master data telegram (dynamic MDT).

Attributes

Name	Value
Datatype	IDN
Data length in bit	1072
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

For further information please look into the involved IDN:

S-0-0906 [▶ 198]

Actual length

S-0-0904-Configuration list of dynamic MDT / Actual length

Datatype	Size in bits	Offset
UINT	16	0

Max length

S-0-0904-Configuration list of dynamic MDT / Max length

Datatype	Size in bits	Offset
UINT	16	16

Configured MDT IDNs

S-0-0904-Configuration list of dynamic MDT / Configured MDT IDNs

Datatype	Size in bits	Offset
	1040	32

S-0-0905 IDN-list of configurable data in the dynamic AT

The parameter contains the list of parameters for which data can be transferred cyclically from the drive to the controller in the dynamic drive telegram (dynamic DT).

Attributes

Name	Value
Datatype	IDN
Data length in bit	12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0905-IDN-list of configurable data in the dynamic AT / Actual length

Datatype	Size in bits	Offset
UINT	16	0

Max length

S-0-0905-IDN-list of configurable data in the dynamic AT / Max length

Datatype	Size in bits	Offset
UINT	16	16

All operation data

S-0-0905-IDN-list of configurable data in the dynamic AT / All operation data.

Datatype	Size in bits	Offset
	12032	32

S-0-0906 IDN-list of configurable data in the dynamic MDT

The parameter contains the list of parameters for which data are transferred cyclically in the master data telegram (MDT) from the controller to the drive.

Attributes

Name	Value
Datatype	IDN
Data length in bit	12064
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Actual length

S-0-0906-IDN-list of configurable data in the dynamic MDT / Actual length

Datatype	Size in bits	Offset
UINT	16	0

Max length

S-0-0906-IDN-list of configurable data in the dynamic MDT / Max length

Datatype	Size in bits	Offset
UINT	16	16

All operation data

S-0-0906-IDN-list of configurable data in the dynamic MDT / All operation data.

Datatype	Size in bits	Offset
	12032	32

S-0-0907 Control word dynamic MDT

The parameter contains the control word for the dynamic master data telegram (dynamic MDT).

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	
Max value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

This control word can be transferred to the drive in the dynamic master data telegram. This control word enables the drive to detect telegram failures.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Output cycle counter

S-0-0907-Control word dynamic MDT / Output cycle counter

Bit pattern:

Bit	Meaning
0-1	**Output cycle counter** This counter should be incremented by the controller in each communication cycle.
2-15	**Reserved**

Datatype	Size in bits	Offset
UINT2	2	0

rsvd

S-0-0907-Control word dynamic MDT / rsvd

Datatype	Size in bits	Offset
UINT14	14	2

S-0-0908 Status word dynamic AT

The parameter contains the status word for the dynamic drive telegram (dynamic DT).

Attributes

Name	Value
Datatype	BINARY
Data length	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

This status word can be transferred to the controller in the dynamic drive telegram. This status word enables the controller to detect telegram failures.

Nested structure

Note the nesting depth and the structure information at the start of the descriptions.

Input cycle counter

S-0-0908-Status word dynamic AT / Input cycle counter

Bit pattern:

Bit	Meaning
0-1	**Input cycle counter** This counter is incremented by the drive in each communication cycle.
2-15	**Reserved**

Datatype	Size in bits	Offset
UINT2	2	0

rsvd

S-0-0908-Status word dynamic AT / rsvd

Datatype	Size in bits	Offset
UINT14	14	2

S-0-0909 Dynamic MDT error counter

At each Sync1 time the drive checks whether new valid dynamic MDT data are present. If not, this counter is incremented. Possible causes of error are late EtherCAT telegrams or incorrectly transferred EtherCAT telegrams with invalid checksums.

Attributes

Name	Value
Datatype	UDEC
Data length	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

This counter should remain static at very low values (1 or 2). Otherwise, the cause should be analyzed.

4 P-Parameter

P-0-0001 Switching frequency of the IGBT module

This parameter defines the switching frequency of the IGBT module.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	3
Min. Value	8000; from Rev. 210: 4000
Default	8000
Max. Value	8000; from Rev. 210: 16000
Unit	Hz
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0090 [▶ 264] and P-0-0091 [▶ 273]

Definition IGBT:

The **I**nsulated-**G**ate **B**ipolar **T**ransistor (IGBT) is a three-terminal power semiconductor device primarily used as an electronic switch which, as it was developed, came to combine high efficiency and fast switching. It switches electric power. Since it is designed to turn on and off rapidly, amplifiers that use it often synthesize complex waveforms with pulse-width modulation and low-pass filters.

Definition PWM frequency:

The **P**ulse-**W**idth **M**odulation (PWM) is a modulation technique used to encode a message into a pulsing signal. This modulation technique can be used to encode information for transmission. The average value of voltage (and current) fed to the load is controlled by turning the switch between supply and load on and off at a fast rate. The longer the switch is on compared to the off periods, the higher the total power supplied to the load. The PWM switching frequency has to be much higher than what would affect the load (the device that uses the power), which is to say that the resultant waveform perceived by the load must be as smooth as possible.

The IGBT modules give a servo signal to the motor windings. This shows how often the edges of the turn-on and turn-off times are switched. The result is a sinusoidal current diagram.

What is new in Firmware 2.10:

The PWM frequency can be set from 8 KHz to 16 kHz. This change makes the turn-off times of the servo drive faster. By faster turn-off times the results is a better sinusoidal current diagram. The current will be smoother.

The smoother current, reduced the noise of the signal. The 16 kHz PWM frequencies is not audible for the human ear. Thereby the perceive noise is reduced.

The disadvantage is higher switching losses.

AX5101 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5101	4	--		--		--	--	--
	8	1.5		4.5		7	7	7
	16	1.5		4.5		7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5103 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5103	4	--		--		--	--	--
	8	3		7.5		7	7	7
	16	3	2.4	6	4.8	7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5106 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5106	4	--		--		--	--	--
	8	6		13		7	7	7
	16	4	3.2	6.4	5.76	7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5112 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5112	4	--		--		--	--	--
	8	12		26		1	7	7
	16	4,5		9	8.1	1	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5118 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5118	4	--		--		--	--	--
	8	18		36		7	7	7
	16	8	7	12	11	7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5125 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5125	4	--		--		--	--	--
	8	25		50		7	7	7
	16	13	12	23.5	18.6	7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5140 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5140	4	--		--		--	--	--
	8	40		80		7	7	7
	16	23	21	37.5	30.5	7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5160 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5160	4	60		120		3	3	3
	8	60		120		3	3	3
	16	40	36	40	36	3	3	3

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5172 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5172	4	72		144		3	3	3
	8	72		144		3	3	3
	16	40	36	40	36	3	3	3

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5190 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5190	4	90		180		3	3	3
	8	90		180		3	3	3
	16	72	65	94	78	3	3	3

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5191 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5191	4	110		180		3	3	3
	8	110		180		3	3	3
	16	72	65	94	78	3	3	3

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5192 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5192	4	143		240		3	3	3
	8	143		215		3	3	3
	16	92	83	100	85	3	3	3

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5193 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5193	4	170		221	200	3	3	3
	8	170		221	200	3	3	3
	16	--	--	--	--	--	--	--

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5201 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5201	4	--		--		--	--	--
	8	1.5		5		7	7	7
	16	1.5		4.5		7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5203 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5203	4	--		--		--	--	--
	8	3		10		7	7	7
	16	3	2.4	6	4.8	7	7	7

The settings are made in the parameters P-0-0090 [▶ 264] (channel peak current) and P-0-0091 [▶ 273] (Channel rated current)

AX5206 - Switching frequency of the IGBT module

In case of a higher PWM frequency, the power of the servo drive may be derated. Due to the higher switching losses, the derating is changed. In result of this, the current rating and the peak current of the servo drives is reduced.

servo drive	PWM frequency (kHz)	current rating I_{rated}(A)		peak current I_{peak}(A)		$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$	$t_{max\ (s)}I_{peak}$
		400 V AC	480 V AC	400 V AC	480 V AC	0 Hz – 1,5 Hz	1,5 Hz – 3 Hz	> 3 Hz
AX5206	4	--		--		--	--	--
	8	6		13		7	7	7
	16	4	3.2	6.4	5.7	7	7	7

P-0-0002 Current ctrl cycle time

This parameter defines the current ctrl loop cycle time.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	62 (stands for 62.5)
Default	62 (stands for 62.5)
Max. Value	125
Unit	µs
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0001 [▶ 202]

Also see about this

S-0-0001 Control unit cycle time (TNcyc) [▶ 23]

P-0-0003 Velocity ctrl cycle time

This parameter defines the velocity control loop cycle time.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	125; from Rev. 210: 62 (stands for 62.5)
Default	125; from Rev. 210: 62 (stands for 62.5)
Max. Value	500
Unit	µs
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0002 [▶ 209]

P-0-0004 Position ctrl cycle time

This parameter defines the position control loop cycle time.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	125; from Rev. 210: 62 (stands for 62.5)
Default	250
Max. Value	500
Unit	µs
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

S-0-0001 [▶ 23], P-0-0003 [▶ 210]

P-0-0010 Feature flags

Feature flags are used to configure backward compatible behavior. Setting a bit is enabling extended functionality.

Attributes

Name	Value
Datatype	binary
Data length in bit	64
Decimal point	-
Min. Value	-
Default	firmware depending
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Parameter structure:

Bit	Description
0	**Enable adjusted velocity controller gain scaling** 0 = disabled 1 = enabled
1	**Enable adapted axis state machine** 0 = disabled 1 = enabled
2	**View enlarged error history** 0 = disabled 1 = enabled
3	**Enable excessive position deviation monitoring** 0 = disabled 1 = enabled
4	**View extended software versions list (P-0-0320)** 0 = disabled 1 = enabled
5	**Enable extended power management** 0 = disabled 1 = enabled
6	**Consider 'the additive position command value' (S-0-0048)** 0 = disabled 1 = enabled
7	**rsvd**
8	**Enable switching frequency reduction** 0 = disabled 1 = enabled
9	**Enable phase clamping** 0 = disabled 1 = enabled
10	**Explicit modulo init data saving required** 0 = No 1 = Yes
11	**Probe unit: Hardware delay compensation** 0 = disabled 1 = enabled
12	**Feedback value sampling point: Adjusted to sync1** 0 = No 1 = Yes
13	**Set data length of P-0-0070 to 4 byte (from Rev. 210)** 0 = No 1 = Yes
14	**Extended thermal motor model P-0-0062 (from Rev. 210)** 0 = Yes 1 = No
15	**Velocity controller gain in Nm / (rad/s) (from Rev. 210)** 0 = Nm//(rad/s) 1 = A//(rad/s)
16	**Acceleration feed forward gain (S-0-0348) in "%" (from Rev. 210)** 0 = No 1 = Yes
17-63	**Reserved (from Rev. 210)**

P-0-0020 EtherCAT device identification

The device identification is also known as "Second Slave Address" or "Station Alias".

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Password protection level	2
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

P-0-0021 Save EtherCAT device identification (pc)

Save the device identification to internal nonvolatile memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Password protection level	2
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	Yes

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

P-0-0040 Additional drive status word

This parameter displays a collection of some drive internal operational states. For details see the bit descriptions.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	-
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

S-x-0091 [▶ 80], P-x-0092 [▶ 282], P-x-0093 [▶ 291]

Parameter structure:

Value	Explication
0	Pending fatal error on other channel: Wait on disable (P-0-0350)
1	Fatal error: Reset locked until other channel disabled (P-0-0350)
2	Fatal error: State change if reset is called (P-0-0350)
3 - 12	Reserved
13	Current ctrl loop limited (P-0-0092, P-0-0093 and S-0-0092) (from Rev. 210)
14	Velocity ctrl loop limited (S-0-0091) (from Rev. 210)
15	Reserved (from Rev. 210)

P-0-0050 Motor construction type

This parameter defines the construction type of the connected motor.

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0 (= synchronous rotary)
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Functional principle

P-0-0050 Motor construction type / Functional principle

Datatype	Data length	Offset in bit	Properties
Enum	1	0	---

Value	Explication
0	synchronous
1	asynchronous

Construction

P-0-0050 Motor construction type/ Construction

Datatype	Data length	Offset in bit	Properties
Enum	1	1	---

Value	Explication
0	rotary
1	linear

rsvd

P-0-0050 Motor construction type/ rsvd

Datatype	Data length	Offset in bit	Properties
Array of UINT	14	2	---

P-x-0051 Number of pole pairs

This IDN contains the number of pole pairs of the configured rotary motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	1
Default	4
Max. Value	100
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0051- P-7-0051.

P-0-0052 Time limitation for peak current

This parameter defines the maximal time period in which the drive can provide the peak channel current.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	1
Default	3 000
Max. Value	7000, Rev. 210: 65535
Unit	ms
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0001 [▶ 202], P-0-0090 [▶ 264], P-x-0092 [▶ 282], P-X-0201 [▶ 502]

P-x-0053 Configured motor type

This parameter contains the type name (ASCII string) of the configured motor.

Attributes

Name	Value
Datatype	text
Data length in bit	272
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!
This IDN exists as P-0-0053 - P-7-0053.

Actual length

P-0-0053 Configured motor type/ Actual length

Datatype	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0053 Configured motor type/ Max length

Datatype	Data length	Offset in bit	Properties
UINT	16	16	---

P-0-0054 Configured drive type

This parameter contains the type name (ASCII string) of the configured drive.

Attributes

Name	Value
Datatype	text
Data length in bit	272
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0054 Configured drive type / Actual length

Datatype	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0054 Configured drive type/ Max length

Datatype	Data length	Offset in bit	Properties
UINT	16	16	---

P-0-0055 Motor EMF

This parameter contains the voltage constant (back emf) of the motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	54.0
Max. Value	6500.0
Unit	mV / rpm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0056 Max. motor speed with max. torque / force

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. value	-
Default	3200
Max. value	50000
Unit	rpm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the „Parameter Set Switching“ function group!

This IDN exists as P-0-0056 – P-7-0056.

P-0-0057 Electrical commutation offset

This parameter specifies the required electrical commutation offset. The necessary value depends on the mechanical and electrical motor construction. Beckhoff motors are requiring 270 degree.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	0.00
Default	90.00
Max. Value	359.99
Unit	deg
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0058 [▶ 225], P-0-0150 [▶ 338], P-0-0160 [▶ 408]

P-0-0058 Mechanical commutation offset

The read only parameter is used to deliver the measured commutation offset which can be stored in the digital motor name plate (P-0-0098) or in the feedback configuration (P-0-0150). The measuring process can be initiated by P-0-0160.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	-
Default	0.00
Max. Value	-
Unit	deg
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0098 [▶ 260], P-0-0150 [▶ 338], P-0-0160 [▶ 408]

P-0-0059 Motor brake current monitoring level

If the motor brake current remains below the specified threshold, an error is reported.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	3
Min. Value	0.000
Default	0.000
Max. Value	2.000
Unit	A
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0064 [▶ 234]

P-0-0060 Motor brake

To manage the motor brake this parameter must be set. When a holding brake is configured as an emergency brake, severe wear can occur.

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0206 [▶ 152], S-0-0207 [▶ 153]

Type

P-0-0060 Motor brake / Type

Datatype	Data length	Offset in bit	Properties
Enum	4	0	---

Value	Description
0	No motor brake
1	Motor brake: currentless locked
2	External motor brake: currentless locked (from Rev. 210)

Usage

P-0-0060 Motor brake / Usage

Datatype	Data length	Offset in bit	Properties
Enum	4	4	---

Value	Description
0	Standard holding brake
1	Holding brake Emergency brake

Also see about this

- S-0-0206 Drive on delay time [▶ 152]
- S-0-0207 Drive off delay time [▶ 153]

rsvd

P-0-0060 Motor brake / rsvd

Datatype	Data length	Offset in bit	Properties
Array of UINT	8	8	---

P-x-0061 Motor temperature sensor type

This parameter configures the temperature sensor type and the connector of the AX5000.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	4
Max. Value	7; from Rev. 210: 8
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Value	Description
0	Motor cable: temperature switch
1	Motor cable: KTY 83-110
2	Resolver cable: temperature switch
3	Motor cable: KTY 84-130
4	No motor temperature switch or sensor (off)
5	Via feedback process data: KTY 83-110
6	Via feedback process data: KTY 84-130
7	Via feedback process data: characteristic table
8	Motor cable: characteristic table (from Rev. 210)

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0061 - P-7-0061.

For further information please look into the involved IDN:

P-0-0076 [▶ 253]

Also see about this

S-0-0076 Position data scaling type [▶ 70]

P-x-0062 Thermal motor model

This parameter configures the thermal motor model to estimate the thermal motor utilization (P-0-0063)

Attributes

Name	Value
Datatype	udec
Data length in bit	96; from Rev. 210:160
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0062 - P-7-0062.

For further information please look into the involved IDN:

P-0-0063 [▶ 233]

Actual length

P-0-0062-Thermal motor model / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0062-Thermal motor model / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0062-Thermal motor model / Data

Datatype	Size in bit	Offset in bit	Properties
Enum	64; from Rev. 210: 128	32	---

Time constant 1

P-0-0062-Thermal motor model / Time constant

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: s

For a detailed description, please look at:
Function description -> Thermal motor modell -> Description of terms

Time constant 2 (from Rev. 210)

P-0-0062-Thermal motor model / Time constant 2

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Unit: s

For a detailed description, please look at:
Function description -> Thermal motor modell -> Description of terms

Partial fraction factor (from Rev. 210)

P-0-0062-Thermal motor model / Partial fraction factor

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Unit: %

For a detailed description, please look at:
Function description -> Thermal motor modell -> Description of terms

Warning limit

P-0-0062-Thermal motor model / Warning limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: %

For a detailed description, please look at:
Function description -> Thermal motor modell -> Description of terms

Error limit

P-0-0062-Thermal motor model / Error limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Unit: %

For a detailed description, please look at:
Function description -> Thermal motor modell -> Description of terms

Error reaction

P-0-0062-Thermal motor model / Reaction

Datatype	Size in bit	Offset in bit	Properties
Enum	16	48	---

Value	Description
0	No calculation
1	Shut down on error level
2	Reduction to the S1 characteristic (from Rev. 210)

For a detailed description, please look at:
Function description -> Thermal motor modell -> Description of terms

Model type (from Rev. 214)

P-0-0062-Thermal motor model / Model Type

Datatype	Size in bit	Offset in bit	Properties
Enum	16	---	---

Value	Description
0	Calculation of total winding losses (from Rev. 214)
1	Calculation of separate winding losses (from Rev. 214)

rsvd1

P-0-0062-Thermal motor model / rsvd1

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

P-0-0063 Thermal motor utilisation

This IDN contains the calculated thermal motor utilization from the drive internal motor model. Averaged motor losses (time constant: P-0-0062) in percent of the rated motor losses.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-x-0062 [▶ 230]

P-0-0064 Actual motor brake current

Measured motor brake current (resolution 0.001A = 1mA).

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0059 [▶ 226]

P-0-0065 Actual temperature sensor resistance

This IDN contains the measured resistance of the motor winding temperature sensor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	Ohm
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-x-0061 [▶ 229]

P-0-0066 Electric motor model

This IDN contains resistance and inductance of the motor winding (phase to phase).

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0066 Electric motor model / Actual length

Datatype	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0066 Electric motor model / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0066 Electric motor model / Data

Format	Data length	Offset in bit	Properties
Enum	64	32	---

Winding resistance (phase to phase)

P-0-0066 Electric motor model / Winding resistance (phase to phase)

Datatype	Data length	Offset in bit	Properties
UDINT	32	0	---

Unit: Ohm

Winding inductance (phase to phase)

P-0-0066 Electric motor model / Winding resistance (phase to phase)

Datatype	Data length	Offset in bit	Properties
UDINT	32	32	---

Unit: mH

P-0-0067 Motor winding: Dielectric strength

The IDN contains the maximal allowed voltage of the motor winding isolation.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	1200.0
Max. Value	-
Unit	V
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0068 Thermal overload factor (motor winding)

The IDN contains the steady state thermal overload factor for induction motors

Attributes

Name	Value
Datatype	udec
Data length in bit	64
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0068 Thermal overload factor (motor winding) / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0068 Thermal overload factor (motor winding) / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0068 Thermal overload factor (motor winding) / Data

Datatype	Data length	Offset in bit	Properties
Enum	32	32	---

Overload factor

P-0-0068 Thermal overload factor (motor winding) / Overload factor

Datatype	Data length	Offset in bit	Properties
UINT	16	0	---

crc16

P-0-0068 Thermal overload factor (motor winding) / crc16

Format	Data length	Offset in bit	Properties
UINT	16	16	---

P-0-0069 Commutation monitoring

The IDN contains the minimal speed for the commutation monitoring. Commutation error (F2A0) can only be detected above the configured value.

Attributes

Name	Value
Datatype	udec
Data length in bit	144
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0069 Commutation monitoring / Actual length

Datatype	Data length	Offset in bit	Properties
UINT	16	0	---

Maximum length

P-0-0069 Commutation monitoring / Maximum length

Datatype	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0069 Commutation monitoring / Data

Datatype	Data length	Offset in bit	Properties
Enum	112	32	---

Velocity limit

P-0-0069 Commutation monitoring / Velocity limit

Datatype	Data length	Offset in bit	Properties
UINT	112	0	---

Unit: 1/min

VoltageThreshold (from Rev. 214)

P-0-0069 Commutation monitoring / VoltageThreshold

Datatype	Data length	Offset in bit	Properties
Array of UINT	16	16	---

P-0-0070 Motor continuous stall torque

This IDN contains the standstill torque M0 of the configured rotary motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16; from Rev. 210: 32
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	200.00; from Rev. 210: 20000.00
Unit	Nm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

P-0-0071 Mechanical motor data

This IDN is used to specify motor inertia J_m and load inertia of the configured rotary motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	0
Default	0
Max. Value	200.00; from Rev. 210: 400000.00
Unit	0.0001 kgm² (kgcm²)
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDNs:

P-0-0514 [▶ 759]

Actual length

P-0-0071 Mechanical motor data / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0071 Mechanical motor data / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0071 Mechanical motor data / Data

Format	Data length	Offset in bit	Properties
Enum	64	32	---

Rotor moment of inertia

P-0-0071 Mechanical motor data / Rotor moment of inertia

Datatype	Data length	Offset in bit	Properties
UDINT	32	0	---

Unit: 0.0001 kgm²

Name	Value
MinValue	0
MaxValue	200.00; from Rev. 210: 400000.00
DecimalPlaces	2

Load moment of inertia

P-0-0071 Mechanical motor data / Load moment of inertia

Datatype	Data length	Offset in bit	Properties
UDINT	32	32	---

Unit: 0.0001 kgm²

Name	Value
MinValue	0
MaxValue	200.00; from Rev. 210: 400000.00
DecimalPlaces	2

P-0-0072 Motor brake data

The IDN contains data of the motor brake.

Attributes

Name	Value
Datatype	udec
Data length in bit	80
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	0.0001 kgm² (kgcm²)
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0072 Motor brake data / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0072 Motor brake data / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0072 Motor brake data / Data

Format	Data length	Offset in bit	Properties
Enum	48	32	---

Holding torque

P-0-0072 Motor brake data / Holding torque

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Unit: Nm

Electrical power

P-0-0072 Motor brake data / Electrical power

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Unit: W

Moment of inertia

P-0-0072 Motor brake data / Moment of inertia

Format	Data length	Offset in bit	Properties
UINT	16	32	---

Unit: 0.0001 kgm²

P-0-0073 Motor peak torque

This IDN contains the peak torque of the configured rotary motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	100 000.00
Unit	Nm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0074 Motor torque characteristic

10 ordered pairs of numbers are describing the torque constant and its saturation as a function of the torque/ force producing current.

Attributes

Name	Value
Datatype	udec
Data length in bit	672
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0074 Motor torque characteristic / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0074 Motor torque characteristic / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

IDNs

P-0-0074 Motor torque characteristic / IDNs

Format	Data length	Offset in bit	Properties
-	640	32	---

Iq

P-0-0074 Motor torque characteristic / Iq

Format	Data length	Offset in bit	Properties
-	320	0	---

Unit: mA

M

P-0-0074 Motor torque characteristic / M

Format	Data length	Offset in bit	Properties
-	320	320	---

Unit: mNm

P-0-0075 Motor inductance characteristic

10 ordered pairs of numbers are describing the saturation of the differential inductance as a function of the torque/force producing current.

Attributes

Name	Value
Datatype	udec
Data length in bit	672
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0074 [▶ 249]

Actual length

P-0-0075 Motor inductance characteristic / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0075 Motor inductance characteristic / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

IDNs

P-0-0075 Motor inductance characteristic / IDNs

Format	Data length	Offset in bit	Properties
UINT	640	32	---

Iq

P-0-0075 Motor inductance characteristic / Iq

Format	Data length	Offset in bit	Properties
UINT	320	0	---

Unit: mA

Lq

P-0-0075 Electric motor model / Lq

Format	Data length	Offset in bit	Properties
UINT	320	320	---

Unit: H

P-0-0076 Motor temperature sensor characteristic

10 ordered pairs of numbers are describing the nonlinear relation between temperature and resistance of the thermistor.

Attributes

Name	Value
Datatype	udec
Data length in bit	352
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-x-0061 [▶ 229]

Actual length

P-0-0076 Motor temperature sensor characteristic / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0076 Motor temperature sensor characteristic / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

IDNs

P-0-0076 Motor temperature sensor characteristic / IDNs

Format	Data length	Offset in bit	Properties
UINT	320	32	---

Temperature

P-0-0076 Motor temperature sensor characteristic / Temperature

Format	Data length	Offset in bit	Properties
UINT	160	0	---

Unit: °C

Resistance

P-0-0076 Motor temperature sensor characteristic / Resistance

Format	Data length	Offset in bit	Properties
UINT	160	160	---

Unit: Ohm

P-0-0077 Motor rated voltage

The motor rated voltage is the voltage at which the motor produces the rated speed and torque according to the motor specification.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	0.0
Max. Value	1000.0
Unit	V
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0078 Max motor dc link voltage

The motor maximal dc link voltage describes the isolation capability of the motor winding.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	0.0
Max. Value	1000.0
Unit	V
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0206 [▶ 509]

Also see about this

- P-0-0206 Power management switching thresholds [▶ 509]

P-0-0079 Commutation angle

This read only diagnostics IDN provides the actual commutation angle in 1/100 degree. This value is used for the drive internal Park transformation. One electrical period is related to 0 – 360.00°.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	250
Max. Value	10000
Unit	µs
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

- S-0-0001 Control unit cycle time (TNcyc) [▶ 23]
- P-0-0003 Velocity ctrl cycle time [▶ 210]

P-0-0088 Resulting/ Effective velocity limitation

This parameter displays the active velocity command value limitation and the corresponding current value.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	No
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0088 Resulting velocity limitation / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0088 Resulting velocity limitation / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0088 Resulting velocity limitation / Data

Format	Data length	Offset in bit	Properties
Enum	64	32	---

Velocity limit value

P-0-0088 Resulting velocity limitation / Velocity limit value

Format	Data length	Offset in bit	Properties
DINT	32	0	---

Unit: rev/(2^{30} ms)

Corresponding current value

P-0-0088 Resulting velocity limitation / Corresponding current value

Format	Data length	Offset in bit	Properties
INT	16	32	---

Unit: %

rsvd

P-0-0088 Resulting velocity limitation / rsvd

Format	Data length	Offset in bit	Properties
Array of UINT	16	48	---

P-0-0089 Motor data constraints

The drives enters the error state if one of the given parameter constraints is violated.

Attributes

Name	Value
Datatype	udec
Data length in bit	320
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDNs:

P-0-0059 [▶ 226], P-0-0806 [▶ 816]

Actual length

P-0-0089 Motor data constraints / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0089 Motor data constraints / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

IDNs

P-0-0089 Motor data constraints / IDNs

Format	Data length	Offset in bit	Properties
-	288	32	---

Constraint 1

P-0-0089 Motor data constraints / Constraint 1

Datatype	Data length	Offset in bit	Properties
-	96	0	---

IDN

P-0-0089 Motor data constraints / Constraint 1 / IDN

Format	Data length	Offset in bit	Properties
UNIT_IDN	16	0	---

rsvd

P-0-0089 Motor data constraints / Constraint 1 / rsvd

Format	Data length	Offset in bit	Properties
Array of UINT	16	16	---

MinValue

P-0-0089 Motor data constraints / Constraint 1 / MinValue

Format	Data length	Offset in bit	Properties
UDINT	32	32	---

MaxValue

P-0-0089 Motor data constraints / Constraint 1 / MaxValue

Datatype	Data length	Offset in bit	Properties
UDINT	32	64	---

Constraint 2

P-0-0089 Motor data constraints / Constraint 2

Format	Data length	Offset in bit	Properties
	96	96	---

IDN

P-0-0089 Motor data constraints / Constraint 2 / IDN

Format	Data length	Offset in bit	Properties
UINT_IDN	16	0	---

rsvd

P-0-0089 Motor data constraints / Constraint 2 / rsvd

Format	Data length	Offset in bit	Properties
Array of UINT	16	16	---

MinValue

P-0-0089 Motor data constraints / Constraint 2 / MinValue

Format	Data length	Offset in bit	Properties
UDINT	32	32	---

MaxValue

P-0-0089 Motor data constraints / Constraint 2 / MaxValue

Format	Data length	Offset in bit	Properties
UDINT	32	64	---

Constraint 3

P-0-0089 Motor data constraints / Constraint 3

Format	Data length	Offset in bit	Properties
	96	192	---

IDN

P-0-0089 Motor data constraints / Constraint 3 / IDN

Format	Size in bit	Offset in bit	Properties
UINT_IDN	16	0	---

rsvd

P-0-0089 Motor data constraints / Constraint 3 / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	16	16	---

MinValue

P-0-0089 Motor data constraints / Constraint 3 / MinValue

Format	Size in bit	Offset in bit	Properties
UDINT	32	32	---

MaxValue

P-0-0089 Motor data constraints / Constraint 3 / MaxValue

Format	Size in bit	Offset in bit	Properties
UDINT	32	64	---

P-0-0090 Channel peak current

The channel peak current is a hardware related limit, which means that the peak torque is also limited.

For further information please look into the involved IDN:

S-0-0110 [▶ 92], P-0-0001 [▶ 202], P-0-0073 [▶ 248], P-0-0201 [▶ 502]

All currents are controller specific. They consist of the PWM frequency (P-0-0001) and the max. parameterized supply voltage U_{main_max} together. The mains voltage U_{main_max} calculated from the parameters P-0-0201 (nominal mains voltage) and P-0-0202 (Mains voltage positive tolerance range).

The controller can be operated on a network and maybe the mains voltage is for example 400V ± 10% / 480V ± 10%. Exactly these requirements are parameterized. At a higher voltage, the peak current, nominal current **may** be smaller!

The settings refer to a switching frequenzy of 8 kHz.

Example:

Formula of dependencies	Example calculation
$U_{main} = P\text{-}0\text{-}0201 + (P\text{-}0\text{-}0201 \cdot P\text{-}0\text{-}0202)$	$U_{main} = 400V + (400V * 10\%) = 440V$

AX5101 Channel peak current

AX5101 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	4.500
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5103 Channel peak current

AX5103 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	7.500
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5106 Channel peak current

AX5106 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	13.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5112 Channel peak current

AX5112 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	26.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5118 Channel peak current

AX5118 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	36.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5125 Channel peak current

AX5125 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	50.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5140 Channel peak current

AX5140 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	80.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5160 Channel peak current

AX5160 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	120.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5172 Channel peak current

AX5172 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	144.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5190 Channel peak current

AX5190 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	180.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5191 Channel peak current

AX5191 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	180.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5192 Channel peak current

AX5192 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	215.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5193 Channel peak current

AX5193 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	221.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5201 Channel peak current

AX5201 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	5.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5203 Channel peak current

AX5203 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	10.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5206 Channel peak current

AX5206 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	13.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

P-0-0091 Channel rated current

The channel rated current is a hardware limit, which means that the S1 torque is also limited.

For further information please look into the involved IDN:

S-0-0112 [▶ 101]

All currents are controller specific. They consist of the PWM frequency (P-0-0001) and the max. parameterized supply voltage U_{main_max} together. The mains voltage U_{main_max} calculated from the parameters P-0-0201 (nominal mains voltage) and P-0-0202 (Mains voltage positive tolerance range).

The controller can be operated on a network and maybe the mains voltage is for example 400V ± 10% / 480V ± 10%. Exactly these requirements are parameterized. At a higher voltage, the peak current, nominal current **may** be smaller!

The settings refer to a switching frequenzy of 8 kHz.

Example:

Formula of dependencies	Example calculation
$U_{main} = P\text{-}0\text{-}0201 + (P\text{-}0\text{-}0201 \cdot P\text{-}0\text{-}0202)$	$U_{main} = 400V + (400V * 10\%) = 440V$

AX5101 Channel rated current

AX5101 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	1.500
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5103 Channel rated current

AX5103 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	3.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5106 Channel rated current

AX5106 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	6.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5112 Channel rated current

AX5112 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	12.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5118 Channel rated current

AX5118 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	18.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5125 Channel rated current

AX5125 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	25.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5140 Channel rated current

AX5140 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	40.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5160 Channel rated current

AX5160 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	60.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5172 Channel rated current

AX5172 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	72.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5190 Channel rated current

AX5190 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	90.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5191 Channel rated current

AX5191 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	110.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5192 Channel rated current

AX5192 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	143.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5193 Channel rated current

AX5193 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	170.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5201 Channel rated current

AX5201 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	3.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5203 Channel rated current

AX5203 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	6.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5206 Channel rated current

AX5206 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	9.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

P-x-0092 Configured channel peak current

The amplifier peak current (S-0-0110) is split to the device channels. The configuration of the individual channel is done with this parameter.

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0092 - P-7-0092.

All currents are controller specific. They consist of the PWM frequency (P-0-0001) and the max. parameterized supply voltage U_{main_max} together. The mains voltage U_{main_max} calculated from the parameters P-0-0201 (nominal mains voltage) and P-0-0202 (Mains voltage positive tolerance range).

The controller can be operated on a network and maybe the mains voltage is for example 400V ± 10% / 480V ± 10%. Exactly these requirements are parameterized. At a higher voltage, the peak current, nominal current **may** be smaller!

Example:

Formula of dependencies	Example calculation
$U_{main} = P\text{-}0\text{-}0201 + (P\text{-}0\text{-}0201 \cdot P\text{-}0\text{-}0202)$	$U_{main} = 400V + (400V * 10\%) = 440V$

AX5101 Configured channel peak current

AX5101 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	0.350
Default	0.350
Max. Value	4.500
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5103 Configured channel peak current

AX5103 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	1.000
Default	1.000
Max. Value	7.500
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5106 Configured channel peak current

AX5106 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	1.000
Default	1.000
Max. Value	13.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5112 Configured channel peak current

AX5112 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	6.000
Default	6.000
Max. Value	26.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5118 Configured channel peak current

AX5118 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	8.000
Default	8.000
Max. Value	36.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5125 Configured channel peak current

AX5125 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	12.000
Default	12.000
Max. Value	50.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5140 Configured channel peak current

AX5140 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	14.000
Default	14.000
Max. Value	80.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5160 Configured channel peak current

AX5160 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	16.000
Default	50.000
Max. Value	120.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5172 Configured channel peak current

AX5172 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	20.000
Default	80.000
Max. Value	144.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5190 Configured channel peak current

AX5190 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	20.000
Default	100.000
Max. Value	180.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5191 Configured channel peak current

AX5191 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	22.000
Default	120.000
Max. Value	180.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5192 Configured channel peak current

AX5192 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	25.000
Default	140.000
Max. Value	240.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5193 Configured channel peak current

AX5193 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	160.000
Default	160.000
Max. Value	221.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5201 Configured channel peak current

AX5201 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	0.350
Default	0.350
Max. Value	5.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5203 Configured channel peak current

AX5203 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	1.000
Default	1.000
Max. Value	10.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5206 Configured channel peak current

AX5206 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	1.000
Default	1.000
Max. Value	13.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

P-x-0093 Configured channel current

The amplifier rated current (S-0-0112) is split to the device channels. The configuration of the individual channel is done with this parameter.

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0093 - P-7-0093.

For further information please look into the involved IDN:

S-0-0112 [▶ 101], P-0-0091 [▶ 273]

All currents are controller specific. They consist of the PWM frequency (P-0-0001) and the max. parameterized supply voltage U_{main_max} together. The mains voltage U_{main_max} calculated from the parameters P-0-0201 (nominal mains voltage) and P-0-0202 (Mains voltage positive tolerance range).

The controller can be operated on a network and maybe the mains voltage is for example 400V ± 10% / 480V ± 10%. Exactly these requirements are parameterized. At a higher voltage, the peak current, nominal current **may** be smaller!

Example:

Formula of dependencies	Example calculation
$U_{main} = P\text{-}0\text{-}0201 + (P\text{-}0\text{-}0201 \cdot P\text{-}0\text{-}0202)$	$U_{main} = 400V + (400V * 10\%) = 440V$

AX5101 Configured channel current

AX5101 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	1.500
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5103 Configured channel current

AX5103 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	3.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5106 Configured channel current

AX5106 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	6.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5112 Configured channel current

AX5112 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	12.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5118 Configured channel current

AX5118 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	18.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5125 Configured channel current

AX5125 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	25.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5140 Configured channel current

AX5140 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	40.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5160 Configured channel current

AX5160 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	60.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5172 Configured channel current

AX5172 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	72.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5190 Configured channel current

AX5190 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	90.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5191 Configured channel current

AX5191 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	110.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5192 Configured channel current

AX5192 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	143.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5193 Configured channel current

AX5193 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	170.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5201 Configured channel current

AX5201 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	3.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5203 Configured channel current

AX5203 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	6.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

AX5206 Configured channel current

AX5206 attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	9.000
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

P-0-0094 Configured channel peak torque

This read only IDN contains the resulting peak torque due to configured channel peak current (P-0-0092) and the motor torque characteristic (P-0-0074). All torque signals of the control loop are related to P-0-0094.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	2
Min. Value	-
Default	0.00
Max. Value	-
Unit	Nm
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

P-0-0096 Motor control word

The IDN contains the motor control word to force the motor holding brake.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	15
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Motor brake: Force lock

P-0-0096-Motor control word / Motor brake: force lock

Format	Data length	Offset in bit	Properties
BIT	1	0	---

Motor brake: Force unlock

P-0-0096-Motor control word / Motor brake: force unlock

Format	Data length	Offset in bit	Properties
BIT	1	1	---

reserved

P-0-0096-Motor control word / Reserved

Format	Data length	Offset in bit	Properties
UINT14	14	2	---

P-0-0097 Motor status word

The IDN contains the motor status word to read out the actual motor holding brake state.

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

Motor brake unlocked

P-0-0097-Motor status word / Motor brake unlocked

Shows the status of the brake output.

Format	Data length	Offset in bit	Properties
BIT	1	0	---

Motor brake output state (from Rev. 210)

P-0-0097-Motor status word / Motor brake output state

Description:

- Becomes true when **motor brake is unlocked** is true and the drive on delay time (S-0-0206) [▶ 152] is expired.
- Becomes false when **motor brake is unlocked** is false and the drive off delay time (S-0-0207) [▶ 153] is expired.

Datatype	Data length	Offset in bit	Properties
BIT	1	1	---

reserved

P-0-0096-Motor status word / reserved

Datatype	Data length	Offset in bit	Properties
Enum	15; from Rev. 210: 14	1; from Rev. 210: 2	---

P-0-0098 Digital motor name plate

Internal Parameter!

This IDN isn´t intended for use by end users!

The IDN contains the electronic nameplate of the motor. This IDN is password protected and usually set via the motor database.

Name	Value
Datatype	udec
Data length in bit	1056
Decimal point	2
Min. Value	-
Default	0.00
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 203

For further information please look into the involved IDN:

P-0-0161 [▶ 409]

Actual length

P-0-0098 Digital motor name plate / Actual length

Format	Data length	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0098 Digital motor name plate / Max length

Format	Data length	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0098 Digital motor name plate / Data

Format	Data length	Offset in bit	Properties
	1024	32	---

Name plate type

P-0-0098 Digital motor name plate / Name plate type

Datatype	Data length	Offset in bit	Properties
Enum	16	0	---

Parameter structure:

Value	Description
0	**No**
1	**Beckhoff**
2	**Beckhoff eletronic data sheet** (Rev. 203)
256	**P-0-0161: Lika SMA1; save only position offset**
257	**P-0-0161: Lika SMA1; set only position**
258	**P-0-0161: Lika SMA1; activate default parameters**

rsvd

P-0-0098 Digital motor name plate / rsvd

Reserveder Bereich.

Format	Data length	Offset in bit	Properties
Array of UINT	16	16	---

Data

P-0-0098 Digital motor name plate / Data

Hier werden Daten eingetragen.

Datatype	Data length	Offset in bit	Properties
	992	32	---

Beckhoff

P-0-0098 Digital motor name plate / Data / Beckhoff

Datatype	Data length	Offset in bit	Properties
	992	0	---

Motorparameter

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter

Datatype	Data length	Offset in bit	Properties
	896	0	---

Id part 1

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Id part 1

Format	Data length	Offset in bit	Properties
UDINT	32	0	---

Id part 2

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Id part 2

Format	Data length	Offset in bit	Properties
UDINT	32	32	---

Version No.

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Version No.

Format	Data length	Offset in bit	Properties
UINT	16	64	---

Motor vendor

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Motor vendor

Format	Data length	Offset in bit	Properties
Enum	16	80	---

Value	Description
0	No specified vendor
1	Beckhoff
2	VSM
3	Stober
4	Bosch Rexroth

Serial number

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Serial number

Format	Data length	Offset in bit	Properties
UDINT	32	96	---

Motor type

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Motor type

Format	Data length	Offset in bit	Properties
STRING (30)	240	128	---

Feedback type

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Feedback type

Format	Data length	Offset in bit	Properties
STRING (30)	240	368	---

reserved

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / reserved

Format	Size in bit	Offset in bit	Properties
UINT	16	608	---

Add motor parameter description

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Add motor parameter description

Datatype	Data length	Offset in bit	Properties
Enum	16	624	---

Value	Description
0	No additional motorparameter
1	Beckhoff asynchron motorparameter

Nominal current

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Nominal current

Format	Data length	Offset in bit	Properties
UDINT	32	640	---

Nominal voltage

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Nominal voltage

Format	Data length	Offset in bit	Properties
UINT	16	672	---

Nominal frequenz

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Nominal frequenz

Format	Data length	Offset in bit	Properties
UINT	16	688	---

Nominal speed

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Nominal speed

Format	Data length	Offset in bit	Properties
UINT	16	704	---

Maximum speed

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Maximum speed

Format	Data length	Offset in bit	Properties
UINT	16	720	---

Cos phi

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Cos phi

Format	Data length	Offset in bit	Properties
UINT	16	736	---

Maximum feedback speed

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Maximum feedback speed

Datatype	Data length	Offset in bit	Properties
UINT	16	752	---

reserved

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / reserved

Format	Data length	Offset in bit	Properties
	96	768	---

reserved

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / reserved

Format	Data length	Offset in bit	Properties
UINT	16	864	---

Checksum

P-0-0098 Digital motor name plate / Data / Beckhoff / Motorparameter / Checksum

Format	Data length	Offset in bit	Properties
UINT	16	880	---

Commutation adjustment

P-0-0098 Digital motor name plate / Data / Beckhoff / Commutation adjustment
Hier steht …

Format	Data length	Offset in bit	Properties
	96	896	---

Position offset

P-0-0098 Digital motor name plate / Data / Beckhoff / Commutation adjustment / Position offset

Datatype	Data length	Offset in bit	Properties
UDINT	32	0	---

Unit: deg

Number of adjustments

P-0-0098 Digital motor name plate / Data / Beckhoff / Commutation adjustment / Number of adjustments

Format	Data length	Offset in bit	Properties
UDINT	16	32	---

Additional mech. position offset

P-0-0098 Digital motor name plate / Data / Beckhoff / Commutation adjustment / Additional mech. position offset

Format	Data length	Offset in bit	Properties
UDINT	32	48	---

Checksum

P-0-0098 Digital motor name plate / Data / Beckhoff / Commutation adjustment / Checksum

Format	Data length	Offset in bit	Properties
UINT	16	80	---

Beckhoff electronic data sheet

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet

Format	Data length	Offset in bit	Properties
	992	0	---

Motor data

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Motor data

Format	Data length	Offset in bit	Properties
	960	0	---

Vendor

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Motor data / Vendor

Format	Data length	Offset in bit	Properties
STRING(30)	240	0	---

Order code

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Motor data / Order code

Format	Data length	Offset in bit	Properties
STRING(30)	240	240	---

Electric type

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Motor data / Electric type

Format	Data length	Offset in bit	Properties
STRING(30)	240	480	---

Serial number

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Motor data / Serial number

Format	Data length	Offset in bit	Properties
STRING(10)	80	720	---

rsvd

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Motor data / rsvd

Format	Data length	Offset in bit	Properties
Array of UINT	160	800	---

Commutation adjustment

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Commutation adjustment

Format	Data length	Offset in bit	Properties
Enum	32	960	---

Mechanical commutation offset

P-0-0098 Digital motor name plate / Data / Beckhoff electronic data sheet / Commutation adjustment / Mechanical commutation offset

Format	Data length	Offset in bit	Properties
UDINT	32	0	---

Also see about this

- P-0-0058 Mechanical commutation offset [▶ 225]

generic

P-0-0098 Digital motor name plate / Data / generic

Datatype	Data length	Offset in bit	Properties
	992	0	---

P-0-0099 Encoder File Access

Internal Parameter!

This IDN isn´t intended for use by end users!

Attributes

Name	Value
Datatype	udec
Data length in bit	4384
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-x-0100 ASM: Nominal speed

This IDN specifies the rated speed of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. Value	500
Default	2800
Max. Value	60 000
Unit	rpm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0100 - P-7-0100.

P-x-0101 ASM: Nominal voltage

This IDN specifies the rated voltage of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	90.0
Default	400.0
Max. Value	480.0
Unit	V
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0101 - P-7-0101.

P-x-0102 ASM: Nominal frequency

This IDN specifies the rated frequency of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	17.0
Default	50.0
Max. Value	1000.0
Unit	Hz
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0102 - P-7-0102.

P-x-0103 ASM: Boost voltage

This IDN is used to configure the boost voltage at low speed operation of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	20.0
Max. Value	100.0
Unit	V
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0103 - P-7-0103.

P-x-0104 ASM: Power factor

This IDN specifies the power factor (cos Φ) at rated power of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	0.00
Default	0.80
Max. Value	0.95
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0104 - P-7-0104.

P-x-0105 ASM: Rotor time constant

This IDN specifies the rotor time constant of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	1000
Unit	ms
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0105 - P-7-0105.

P-x-0106 ASM: Connection type

Star or delta connection can be configured.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	1
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Value	Description
0	Star connection
1	Delta connection

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0106 - P-7-0106.

P-x-0107 ASM: Magnetizing current

This IDN specifies the rated magnetizing current for an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0107 - P-7-0107.

P-x-0108 ASM: Stator resistance

This IDN specifies the stator resistance of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	Ohm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0108 - P-7-0108.

P-x-0109 ASM: Stator leakage inductance

This IDN specifies the stator leakage inductance of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	mH
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0109 - P-7-0109.

P-x-0110 ASM: Motor magnetizing inductance

This IDN specifies the induction motor magnetizing inductance.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	mH
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0110 - P-7-0110.

P-x-0111 ASM: Rotor leakage inductance

This IDN specifies the rotor leakage inductance of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	mH
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0111 - P-7-0111.

P-x-0112 ASM: Acceleration control, torque limit value

This IDN configures the torque limit value to control acceleration of an induction motor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	100.0
Max. Value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0112 - P-7-0112.

For further information please look into the involved IDN:

P-x-0115 [▶ 326]

P-x-0113 ASM: Acceleration control, proportional gain

This IDN configures the proportional gain of the induction motor acceleration control loop.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	0.000
Default	0.000
Max. Value	1073741.824
Unit	$(rad/s^2)/A$
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0113 - P-7-0113.

P-x-0114 ASM: Acceleration control, integral action time

This IDN configures the integral action time of the induction motor acceleration control loop.

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	0.0
Max. Value	6000.0
Unit	ms
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0114 - P-7-0114.

P-x-0115 ASM: Stall protection loop, torque limit value

This IDN configures the torque limit value for the induction motor stall protection control loop.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	100.0
Max. Value	100.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0115 - P-7-0115.

For further information please look into the involved IDN:

P-x-0112 [▶ 323]

P-x-0116 ASM: Stall protection loop, proportional gain

This IDN configures the proportional gain of the induction motor stall protection control loop.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	0.000
Default	0.000
Max. Value	6000.000
Unit	(rad/s)/A
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0116 - P-7-0116.

P-x-0117 ASM: Stall protection loop, integral action time

This IDN configures the integral action time of the induction motor stall protection control loop.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	0.0
Max. Value	6000.0
Unit	ms
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0117 - P-7-0117.

P-x-0118 ASM: Slip compensation factor

This IDN configures the induction motor slip compensation factor.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	0.0
Max. Value	200.0
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0118 - P-7-0118.

P-x-0119 ASM: Boost voltage slope

This IDN configures the induction motor boost voltage slope.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	10.000
Default	80000.000
Max. Value	160000.000
Unit	V/s
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0119 - P-7-0119.

P-0-0125 Pole pair distance

In case of a linear motor the pole pair distance in mm is used to calculate the commutation.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	100.00
Unit	mm
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0069 [▶ 241], P-0-0092 [▶ 282], P-0-0165 [▶ 412]

P-0-0126 Motor continuous stall force

For linear motors this parameter describes the continuous stall force Fc according to the motor specification.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	500.00; from Rev. 210: 10000.00
Unit	N
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

P-0-0127 Mechanical linear motor data

This IDN specifies motor mass and load mass.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0514 [▶ 759]

Actual length

P-0-0127 Mechanical linear motor data / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0127 Mechanical linear motor data / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0127 Mechanical linear motor data / Data

Format	Size in bit	Offset in bit	Properties
Enum	64	32	---

Coil unit mass

P-0-0127 Mechanical linear motor data / Coil unit mass

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Unit: kg

Name	Value
MinValue	0
MaxValue	200000
DecimalPlaces	2

Load mass

P-0-0127 Mechanical linear motor data / Load mass

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Unit: kg

Name	Value
MinValue	0
MaxValue	200000
DecimalPlaces	2

P-0-0128 Motor peak force

For linear motors this parameter describes the peak force Fp according to the motor specification.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	2
Min. Value	0.00
Default	-
Max. Value	100000.00; from Rev. 210: 300000.00
Unit	N
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

P-0-0129 Motor phase connection check (pc)

Under construction!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	%
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Value	Description
0	Cancel cmd
1	Set cmd
3	Set and enable cmd

For further information please look into the involved IDN:

P-0-0130 [▶ 337]

P-0-0130 Motor phase connection check parameter

Under construction!

Attributes

Name	Value
Datatype	udec
Data length in bit	192
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

For further information please look into the involved IDN:

P-0-0129 [▶ 336]

P-0-0150 Feedback 1 type

This parameter structure defines the feedback 1 type. Feedback 1 is the primary motor feedback and is also used to calculate the commutation position.

Attributes

Name	Value
Datatype	udec
Data length in bit	1824
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0079 [▶ 257], P-0-0098 [▶ 303]

Actual length

P-0-0150-Feedback 1 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0150-Feedback 1 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0150-Feedback 1 / Data

Format	Size in bit	Offset in bit	Properties
UINT	1792	32	---

Manufacturer

P-0-0150-Feedback 1 / Manufacturer

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Unknown manufacturer
1	Hengstler
2	Heidenhain
3	Sick
4	Siko
5	Kübler
6	Lika
7	Harowe
8	LTN
9	Numerik Jena
10	Hiwin
11	Tecnotion
12	Beckhoff
13	Renishaw
14	Baumer
15	HighResolution
16	AMO
17	Tyco (from Rev. 210)
18	Balluff (from Rev. 210)
19	Schneeberger (from Rev. 210)
20	Pwb (from. Rev. 210)

Feedback type

P-0-0150-Feedback 1 / Feedback type

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	rotational feedback
1	linear feedback

Feedback type string

P-0-0150-Feedback 1 / Feedback type string

Datatype	Size in bit	Offset in bit	Properties
String (30)	240	32	---

Feedback use

P-0-0150-Feedback 1 / Feedback use

Format	Size in bit	Offset in bit	Properties
Enum	16	272	---

Value	Description
0	Commutation motorfeedback
1	Additional second motorfeedback
3	Internal: Scan feedback

Feedback direction

P-0-0150-Feedback 1 / Feedback direction

Format	Size in bit	Offset in bit	Properties
Enum	16	288	---

Value	Description
0	Positive direction
1	Negative direction

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	48	304	-

Power settings

P-0-0150-Feedback 1 / Power settings

Format	Size in bit	Offset in bit	Properties
-	96	352	-

Control voltage

P-0-0150-Feedback 1 / Power setting / Control voltage

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	off
1	8V/11V, pin 6 and 2
2	5V with sense, pin 4 and 2, sense pin 12 and 10
3	5V without sense, pin 4 and 2

Wait time after power up

P-0-0150-Feedback 1 / Power setting / Wait time after power up

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: ms

Connector

P-0-0150-Feedback 1 / Power setting / Connector

Format	Size in bit	Offset in bit	Properties
Enum	16	32	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	48	48	-

Process channel

P-0-0150-Feedback 1 / Process channel

Datatype	Size in bit	Offset in bit	Properties
	384	448	---

Process interface

P-0-0150-Feedback 1 / Process channel / Process interface

Hier wird die Prozess-Schnittstelle eingetragen.

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No interface
1	Sin / Cos with 1 V peak to peak
2	Incremental 5V TTL
3	Resolver
4	MES
5	Digital Interface
6	Incremental HTL

Connector

P-0-0150-Feedback 1 / Process channel / Connector

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	32	32	-

Data

P-0-0150-Feedback 1 / Process channel / Data

Datatype	Size in bit	Offset in bit	Properties
	320	64	---

Sin / Cos

P-0-0150-Feedback 1 / Process channel / Data / Sin - Cos

Datatype	Size in bit	Offset in bit	Properties
	320	0	---

Signal periods per rotation

P-0-0150-Feedback 1 / Process channel / Data / Sin –Cos / Signal periods per rotation

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Properties

Name	Value
Decimal point	0
MinValue	16; from Rev. 210: 1
MaxValue	131071; from Rev. 210: 1048575

Option card AX570x!

The max. Value for the Sin/Cos feedback system is 65535!

Length per signal period

P-0-0150-Feedback 1 / Process channel / Data / Sin – Cos / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Unit: nm

Sin gain correction

P-0-0150-Feedback 1 / Process channel / Data / Sin – Cos / Sin gain correction

Format	Size in bit	Offset in bit	Properties
UINT	16	64	---

Properties

Name	Value
Decimal point	3
MinValue	0
MaxValue	2000
Default	1000

Sin offset correction

P-0-0150-Feedback 1 / Process channel / Data / Sin – Cos / Sin offset correction

Datatype	Size in bit	Offset in bit	Properties
INT	16	80	---

Properties

Name	Value
MinValue	-30000
MaxValue	30000

Cos gain correction

P-0-0150-Feedback 1 / Process channel / Data / Sin – Cos / Cos gain correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	96	---

Properties

Name	Value
Decimal point	3
MinValue	0
MaxValue	2000
Default	1000

Cos offset correction

P-0-0150-Feedback 1 / Process channel / Data / Sin – Cos / Cos offset correction

Format	Size in bit	Offset in bit	Properties
INT	16	112	---

Properties

Name	Value
MinValue	-30000
MaxValue	30000

SinCos 1Vss monitoring

P-0-0150-Feedback 1 / Process channel / Data / Sin – Cos / SinCos 1Vss monitoring

Format	Size in bit	Offset in bit	Properties
Enum	16	128	---

Value	Description
0	Error monitoring
1	Error monitoring and Sin/Cos logging
2	Error monitoring (only wire break detection) and Sin/Cos logging
3	Error monitoring (only wire break detection)

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	176	144	-

TTL

P-0-0150-Feedback 1 / Process channel / Data / TTL

Datatype	Size in bit	Offset in bit	Properties
	320	0	---

Signal periods per rotation

P-0-0150-Feedback 1 / Process channel / Data / TTL / Signal periods per rotation

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Properties

Name	Value
Decimal point	0
MinValue	16; from Rev. 210: 1
MaxValue	131071; from Rev. 210: 1048575

Length per signal period

P-0-0150-Feedback 1 / Process channel / Data / TTL / Length per signal period in nm

Format	Size in bit	Offset in bit	Properties
UDINT	32	32	---

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	256	64	-

Resolver

P-0-0150-Feedback 1 / Process channel / Data / Resolver

Format	Size in bit	Offset in bit	Properties
	320	0	---

Control word

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Control word

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	--

Enable phase adjustment

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Control word / Enable phase adjustment

Datatype	Size in bit	Offset in bit	Properties
UINT1	1	0	---

Enable offset adjustment

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Control word / Enable offset adjustment

Datatype	Size in bit	Offset in bit	Properties
UINT1	1	1	---

Number of poles

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Number of poles

Datatype	Size in bit	Offset in bit	Properties
USINT	8	16	---

Properties

Name	Value
MinValue	2
MaxValue	8

Excitation frequency

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Excitation frequency

Datatype	Size in bit	Offset in bit	Properties
USINT	8	24	---

Unit: kHz

Properties

Name	Value
Unit	kHz
MinValue	8
MaxValue	8

Transformation ratio

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Transformation ratio

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Properties

Name	Value
Decimal point	2
MinValue	30
MaxValue	50

Phase shift

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Phase shift

Datatype	Size in bit	Offset in bit	Properties
INT	16	48	---

Unit: deg

Properties

Name	Value
Unit	deg
Decimal point	2

Sin/Cos amplitude correction

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Sin/Cos-Amplitude correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Properties

Name	Value
Decimal point	4
MinValue	9000
MaxValue	11000

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	16	80	-

Amplitude monitoring

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Amplitude monitoring

Format	Size in bit	Offset in bit	Properties
Enum	32	96	---

Max limit

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Amplitude monitoring / Max limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: %

Properties

Name	Value
MinValue	1050
MaxValue	1250
Decimal point	1

Min limit

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Amplitude monitoring / Min limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: %

Properties

Name	Value
MinValue	400
MaxValue	950
Decimal point	1

Observer

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Observer

Datatype	Size in bit	Offset in bit	Properties
Enum	32	128	---

Bandwidth

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Observer / Bandwidth

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: Hz

Table 2: Properties

Name	Value
MinValue	25
MaxValue	1000

Correction factor Iq to Acc

P-0-0150-Feedback 1 / Process channel / Data / Resolver / Observer / Correction factor Iq to Acc

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Properties

Name	Value
MinValue	0
MaxValue	2000
Decimal point	3

MES

P-0-0150-Feedback 1 / Process channel / Data / MES

Format	Size in bit	Offset in bit	Properties
Enum	320	0	---

Control word

P-0-0150-Feedback 1 / Process channel / Data / MES / Control word

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	1	0	-

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	1	1	-

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	14	2	-

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	16	16	-

Sin offset

P-0-0150-Feedback 1 / Process channel / Data / MES / Sin offset

Datatype	Size in bit	Offset in bit	Properties
INT	16	32	---

Unit: inc

Cos offset

P-0-0150-Feedback 1 / Process channel / Data / MES / Cos offset

Datatype	Size in bit	Offset in bit	Properties
INT	16	48	---

Unit: inc

Sin/Cos-Amplitude correction

P-0-0150-Feedback 1 / Process channel / Data / MES / Sin/Cos-Amplitude correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Properties

Name	Value
Decimal point	4
MinValue	9000
MaxValue	11000

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	16	80	-

Amplitude monitoring

P-0-0150-Feedback 1 / Process channel / Data / MES / Amplitude monitoring

Format	Size in bit	Offset in bit	Properties
Enum	32	96	---

Max limit

P-0-0150-Feedback 1 / Process channel / Data / MES / Amplitude monitoring / Max limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: %

Properties

Name	Value
MinValue	1050
MaxValue	1250
Decimal point	1

Min limit

P-0-0150-Feedback 1 / Process channel / Data / MES / Amplitude monitoring / Min limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: %

Properties

Name	Value
MinValue	400
MaxValue	950
Decimal point	1

Observer

P-0-0150-Feedback 1 / Process channel / Data / MES / Observer

Datatype	Size in bit	Offset in bit	Properties
Enum	32	128	---

Bandwidth

P-0-0150-Feedback 1 / Process channel / Data / MES / Observer / Bandwidth

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: Hz

Properties

Name	Value
MinValue	25
MaxValue	1000

Correction factor Iq to Acc

P-0-0150-Feedback 1 / Process channel / Data / MES / Observer / Correction factor Iq to Acc

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Properties

Name	Value
MinValue	0
MaxValue	2000
Decimal point	3

HTL

P-0-0150-Feedback 1 / Process channel / Data / HTL

Datatype	Size in bit	Offset in bit	Properties
UDINT	320	0	---

Signal periods per rotation

P-0-0150-Feedback 1 / Process channel / Data / HTL / Signal periods per rotation

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Properties

Name	Value
Decimal point	0
MinValue (from Revision 202)	16
MaxValue (from Revision 202)	131071

Length per signal period

P-0-0150-Feedback 1 / Process channel / Data / HTL / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Unit: nm

Parameter channel

P-0-0150-Feedback 1 / Parameter channel

Datatype	Size in bit	Offset in bit	Properties
Enum	736	832	---

Parameter interface

P-0-0150-Feedback 1 / Parameter channel/ Parameter interface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No commutation interface
1	BiSS
2	EnDat 2.1
3	EnDat 2.2
4	HIPERFACE
5	BiSS C-Mode
6	BiSS C-Mode unidirectional
7	HIPERFACE DSL
10	SSI binär
11	SSI gray
100	Electrical analog commutation channel: sin(x) and sin(x-120)
102	Mechanical analog commutation channel: cos and sin
103	Electrical analog commutation channel: cos and sin

Connector

P-0-0150-Feedback 1 / Parameter channel / Connector

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

Identifier

P-0-0150-Feedback 1 / Parameter channel/ Identifier

Format	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Bit resolution singleturn position

P-0-0150-Feedback 1 / Parameter channel / Bit resolution singleturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Bit resolution multiturn position

P-0-0150-Feedback 1 / Parameter channel/ Bit resolution multiturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Number of clockcycles to get a singleturn position or absolute position

P-0-0150-Feedback 1 / Parameter channel / Number of clockcycles to get a singleturn position or absolute position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	96	---

Number of clockcycles to get a multiturn position

P-0-0150-Feedback 1 / Parameter channel/ Number of clockcycles to get a multiturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

Digital name plate

P-0-0150-Feedback 1 / Parameter channel/ Digital name plate

Format	Size in bit	Offset in bit	Properties
Enum	16	128	---

Value	Description
0	No digital name plate
1	Digital name plate: Beckhoff
2	Electronic data sheet: Beckhoff

Commutation mode

P-0-0150-Feedback 1 / Parameter channel/ Commutation mode

Datatype	Size in bit	Offset in bit	Properties
Enum	4	144	---

Value	Description
0	No commutation position
1	Feedback commutation offset
2	Commutation offset 0 deg
3	Adjustable mechanical offset (P-0-0150)

Adjustable commutation offset (mechanical)

P-0-0150-Feedback 1 / Parameter channel / Adjustable commutation offset (mechanical)

Datatype	Size in bit	Offset in bit	Properties
UINT12	12	148	---

Unit: deg

LinearResolutionAboutDigitalInterface_Numerator_nm

P-0-0150-Feedback 1 / Parameter channel / Linear resolution about digital interface in nm

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

Unit: nm

rsvd

P-0-0150-Feedback 1 / Parameter channel / Rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	64	192	---

Data

P-0-0150-Feedback 1 / Parameter channel/ Data

Datatype	Size in bit	Offset in bit	Properties
	480	256	---

BiSS

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS

Format	Size in bit	Offset in bit	Properties
	480	0	---

Sensor mode: Data description

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Data description

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Msb first, left aligned, multiposition-singleposition-status-crc-mcd
1	Msb first, right aligned, multiposition-singleposition-status-crc

Sensor mode: Number of status bits

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Number of status bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Sensor mode: Number of additional data bits

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Number of additional data bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Sensor mode: Number of CRC bits

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Number of CRC bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Sensor mode: Number of CRC polynomial

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Number of CRC polynomial

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Sensor mode: Inverted CRC

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Inverted CRC

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Mcd: Type

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Mcd: Type

Datatype	Size in bit	Offset in bit	Properties
Enum	16	96	---

Value	Description
0	no type

Mcd: Complete number of data bits

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Mcd: Complete number of data bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

Mcd: Complete number of CRC bits

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Mcd: Complete number of CRC bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	128	---

Mcd: CRC polynomial

P-0-0150-Feedback 1 / Paramerter channel / Data/ BiSS / Mcd: CRC polynomial

Format	Size in bit	Offset in bit	Properties
UINT	16	144	---

Mcd: Inverted CRC

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Mcd: Inverted CRC

Datatype	Size in bit	Offset in bit	Properties
UINT	16	160	---

Sensor mode: timeout time in µs

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: timeout time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	176	---

Sensor mode: Min clock speed in kHz

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Min clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	192	---

Sensor mode: Max clock speed in kHz

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Max clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	208	---

Sensor mode: Max calculation time in µs

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Sensor mode: Max calculation time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	224	---

Register mode: Timeout time in µs

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Register mode: Timeout time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	240	---

Register mode: Min clock speed in kHz

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Register mode: Min clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	256	---

Register mode: Max clock speed in kHz

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Register mode: Max clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	272	---

Register mode: Max write time in ms

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Register mode: Max write time in ms

Datatype	Size in bit	Offset in bit	Properties
UINT	16	288	---

Register description version number

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Register description version number

Format	Size in bit	Offset in bit	Properties
UINT	16	304	---

OEM: Bank number

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / OEM: Bank number

Datatype	Size in bit	Offset in bit	Properties
UINT	16	320	---

OEM: Startaddress

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / OEM: Start address

Datatype	Size in bit	Offset in bit	Properties
UINT	16	336	---

OEM: Length in byte

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / OEM: Length in byte

Datatype	Size in bit	Offset in bit	Properties
UINT	16	352	---

Multi slave support

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Multi slave support

Datatype	Size in bit	Offset in bit	Properties
UINT	16	368	---

Pretrigger time encoder to sync in µs

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Pretrigger time encoder to sync in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	384	---

Position calculation time encoder in µs

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Position calculation time encoder in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	400	---

Reserved

P-0-0150-Feedback 1 / Parameter channel/ Data / BiSS / Reserved

Format	Size in bit	Offset in bit	Properties
Enum	64	416	---

EnDat

P-0-0150-Feedback 1 / Parameter channel/ Data / EnDat

Datatype	Size in bit	Offset in bit	Properties
	464	0	---

Additional internal ASCII Id

P-0-0150-Feedback 1 / Parameter channel/ Data / EnDat / Additional internal ASCII id

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max. clock low time in µs

P-0-0150-Feedback 1 / Parameter channel/ Data / EnDat / Max. clock low time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Hiperface

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Reserved

P-0-0150-Feedback 1 / Parameter channel/ Data / EnDat / Reserved

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Hiperface DSL

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL

Datatype	Size in bit	Offset in bit	Properties
	256; from Rev. 210: 480	0	---

Max accepted sync jitter

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Max accepted sync jitter

Format	Size in bit	Offset	Properties
USINT	8	8	---

Max application acceleration

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Max application acceleration

Format	Size in bit	Offset	Properties
UDINT	32	128	---

Unit: rad/s²

Use customized "Max accepted position deviation"

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Use customized „Max accepted position deviation“!

Format	Size in bit	Offset	Properties
Enum	1	175	---

Value	Description
0	No (Use Default!)
1	Yes

Max accepted position deviation (mechanical)

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Max accepted position deviation (mechanical)

Format	Size in bit	Offset	Properties
UINT15	15	160	---

Unit: %

Use customized "Encoder Status error masks"

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Use customized “Encoder Status error masks”

Format	Size in bit	Offset	Properties
Enum	16	176	-

Value	Description
0	No (Use Default!)
1	Yes

Encoder Status error masks

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder Status error masks

Format	Size in bit	Offset	Properties
Enum	64	192	---

Encoder status 0 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 0 error mask

Format	Size in bit	Offset	Properties
USINT	8	0	---

Table 3: Properties

Name	Value
Display	hex

Encoder status 1 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 1 error mask

Format	Size in bit	Offset	Properties
USINT	8	8	---

Table 4: Properties

Name	Value
Display	hex

Encoder status 2 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks /
Encoder status 2 error mask

Format	Size in bit	Offset	Properties
USINT	8	16	---

Table 5: Properties

Name	Value
Display	hex

Encoder status 3 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 3 error mask

Format	Size in bit	Offset	Properties
USINT	8	24	---

Table 6: Properties

Name	Value
Display	hex

Encoder status 4 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 4 error mask

Format	Size in bit	Offset	Properties
USINT	8	32	---

Table 7: Properties

Name	Value
Display	hex

Encoder status 5 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 5 error mask

Format	Size in bit	Offset	Properties
USINT	8	40	---

Table 8: Properties

Name	Value
Display	hex

Encoder status 6 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 6 error mask

Format	Size in bit	Offset	Properties
USINT	8	48	---

Table 9: Properties

Name	Value
Display	hex

Encoder status 7 error mask

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 7 error mask

Format	Size in bit	Offset	Properties
USINT	8	56	---

Table 10: Properties

Name	Value
Display	hex

rsvd [Error limits (Rev. 210 compatibility)]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)]

Datatype	Size in bit	Offset in bit	Properties
	112	16	---

rsvd [VPOS error limit]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VPOS error limit]

Format	Size in bit	Offset	Properties
UINT	16	0	---

rsvd [VEL error limit]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VEL error limit]

Format	Size in bit	Offset	Properties
UINT	16	16	---

rsvd [VRT error limit]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VRT error limit]

Format	Size in bit	Offset	Properties
UINT	16	32	---

rsvd [POS error limit]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [POS error limit]

Format	Size in bit	Offset	Properties
UINT	16	48	---

rsvd [LINK error limit]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [LINK error limit]

Format	Size in bit	Offset	Properties
UINT	16	64	---

rsvd [ACC error limit]

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [ACC error limit]

Format	Size in bit	Offset	Properties
UINT	16	80	---

rsvd

P-0-0150-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd

Format	Size in bit	Offset	Properties
Array of UNIT	16	96	---

Manufacturer limits settings

P-0-0150-Feedback 1 / Parameter channel/ Data / Manufacturer limits settings

Format	Size in bit	Offset in bit	Properties
-	96	1568	---

Maximum operation speed

P-0-0150-Feedback 1 / Parameter channel/ Data / Manufacturer limits settings / Maximum operation speed

Datatype	Size in bit	Offset in bit	Properties
	16	0	---

Unit: rps or mm/s

Maximum continuous mechanical speed

P-0-0150-Feedback 1 / Parameter channel/ Data / Manufacturer limits settings / Maximum continuous mechanical speed

Datatype	Size in bit	Offset in bit	Properties
	16	16	---

Unit: rps or mm/s

Maximum temperature

P-0-0150-Feedback 1 / Parameter channel/ Data / Manufacturer limits settings / Maximum temperature

Datatype	Size in bit	Offset in bit	Properties
-	16	32	---

Unit: °C

rsvd

P-0-0150-Feedback 1 / Parameter channel / Rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	48	48	---

Feedback options

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options

Format	Size in bit	Offset in bit	Properties
Enum	32	1664	---

Digital inputs

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Input A (single ended)

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs / Input A (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	0	---

Value	Description
0	Not used
1	used

Input B (single ended)

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs / Input B (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	1	---

Value	Description
0	Not used
1	used

Input C (single ended)

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs / Input C (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	2	---

Value	Description
0	not used
1	used

Input D (single ended)

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs / Input D (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	3	---

Value	Description
0	not used
1	used

Input E (differential)

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs / Input D (differential)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	4	---

Value	Description
0	not used
1	used

Input F (differential)

P-0-0150-Feedback 1 / Parameter channel/ Data / Feedback options / Digital inputs / Input E (differential)

Format	Size in bit	Offset in bit	Properties
Enum	1	5	---

Value	Description
0	not used
1	used

reserved

Format	Size in Bit	Offset in bit	Properties
UINT10	10	6	-

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	16	16	-

rsvd

Format	Size in Bit	Offset in bit	Properties
Array of UINT	96	1696	-

P-0-0151 Scanned feedback 1 type

This read only parameter structure displays the feedback 1 data which are read from the feedback during the execution of P-0-0163 "Scan feedback 1 (pc)".

Attributes

Name	Value
Datatype	udec
Data length in bit	2048
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 201

For further information please look into the involved IDN:

P-0-0079 [▶ 257], P-0-0098 [▶ 303], P-0-0150 [▶ 338]

Actual length

P-0-0151-Feedback 1 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0151-Feedback 1 / Max length

Datentyp	Size in bit	Offset in bit	Eigenschaften
UINT	16	16	---

Data

P-0-0151-Feedback 1 / Data

Datentyp	Size in bit	Offset in bit	Eigenschaften
	2016	32	---

Manufacturer settings

P-0-0151-Feedback 1 / Manufacturer

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Wert	Description
0	Unknown manufacturer
1	Hengstler
2	Heidenhain
3	Sick
4	Siko
5	Kübler
6	Lika
7	Harowe
8	LTN
9	Numerik Jena
10	Hiwin
11	Tecnotion
12	Beckhoff
13	Renishaw
14	Baumer
15	HighResolution
16	AMO
17	Tyco
18	Balluff
19	Schneeberger
20	Pwb

Feedback type

P-0-0151-Feedback 1 / Feedback type

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Wert	Description
0	Rotational feedback
1	Linear Feedback

Feedback type string

P-0-0151-Feedback 1 / Feedback type string

Datatype	Size in bit	Offset in bit	Properties
String (30)	240	32	---

rsvd

P-0-0151-Feedback 1 / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	80	272	---

Size in bit	LBound	Elements
80	0	5

Process channel

P-0-0151-Feedback 1 / Process channel

Datatype	Size in bit	Offset in bit	Properties
	192	352	---

Process interface

P-0-0151-Feedback 1 / Process channel / Process interface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Wert	Description
0	No interface
1	Sin / Cos with 1 V peak to peak
2	Incremental 5V TTL
3	Resolver
4	MES
5	Digital Interface
6	Incremental HTL

Connector

P-0-0151-Feedback 1 / Process channel / Connector

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

rsvd

P-0-0151-Feedback 1 / Process Channel / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	32	32	---

Data

P-0-0151-Feedback 1 / Process channel / Data

Datatype	Size in bit	Offset in bit	Properties
	128	64	---

Sin / Cos

P-0-0151-Feedback 1 / Process channel / Data / Sin - Cos

Datatype	Size in bit	Offset in bit	Properties
	128	0	---

Signal periods per rotation

P-0-0151-Feedback 1 / Process channel / Data / Sin – Cos / Resolution per rotation

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Length per signal period

P-0-0151-Feedback 1 type / Process channel / Data / Sin – Cos / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

rsvd

P-0-0151-Feedback 1 type/ Process channel / Data / Sin – Cos / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	64	64	---

Size in bit	LBound	Elements
64	0	4

Resolver

P-0-0151-Feedback 1 / Process channel / Data / Resolver

Datatype	Size in bit	Offset in bit	Properties
	128	0	---

Number of pole pairs

P-0-0151-Feedback 1 / Process channel / Data / Resolver / Number of poles

Datatype	Size in bit	Offset in bit	Properties
	16	0	

Exciting frequency

P-0-0151-Feedback 1 / Process channel / Data / Resolver / frequency

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	96	32	---

Unit: kHz

rsvd

P-0-0151-Feedback 1 / Process channel / Data / Resolver / rsvd

Datatype	Size in bit	LBound	Elements
Array of UINT	96	32	6

Parameter channel

P-0-0151-Feedback 1 / Parameter channel

Datatype	Size in bit	Offset in bit	Properties
	1248	544	---

Parameter interface

P-0-0151-Feedback 1 / Parameter channel / Parameter interface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No commutation interface
1	BiSS
2	EnDat 2.1
3	EnDat 2.2
4	HIPERFACE
5	BiSS C-Mode
6	BiSS C-Mode unidirectional
7	HIPERFACE DSL
10	SSI binär
11	SSI gray
100	Electrical analog commutation channel: sin(x) and sin(x-120)
102	Mechanical analog commutation channel: cos and sin
103	Electrical analog commutation channel: cos and sin

Connector

P-0-0151-Feedback 1 / Parameter channel / Connector

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

Identifier

P-0-0151-Feedback 1 / Parameter channel / Identifier

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Bit resolution singleturn position

P-0-0151-Feedback 1 / Parameter channel / Bit resolution single position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Bit resolution multiturn position

P-0-0151-Feedback 1 / Parameter channel/ Bit resolution multi position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Number of clockcycles to get singleturn position

P-0-0151-Feedback 1 / Parameter channel / Number of clockcycles to get a singleturn position or absolute position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	96	---

Number of clockcycles to get multiturn position

P-0-0151-Feedback 1 / Parameter channel/ Number of clockcycles to get a multiturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

Digital name plate

P-0-0151-Feedback 1 / Parameter channel / Digital name plate

Datatype	Size in bit	Offset in bit	Properties
Enum	16	128	---

Value	Description
0	No digital name plate
1	Digital name plate: Beckhoff
2	Electronic data sheet: Beckhoff

Commutation mode

P-0-0151-Feedback 1 / Parameter channel / Commutation mode

Datatype	Size in bit	Offset in bit	Properties
Enum	4	144	---

Value	Description
0	No commutation position
1	Feedback commutation offset
2	Commutation offset 0 deg
3	Adjustable mechanical offset (P-0-0150)

Adjustible commutation offset (mechanical)

P-0-0151-Feedback 1 / Parameter channel / Adjusible commutation offset (mechanical)

Datatype	Size in bit	Offset in bit	Properties
UINT12	12	148	---

Unit: deg

Linear resolution about digital interface

P-0-0151-Feedback 1 / Parameter channel / Linear resolution about digital interface in nm

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

Unit: nm

Serial number

P-0-0151-Feedback 1 / Parameter channel / Serial number

Datatype	Size in bit	Offset in bit	Properties
ULINT	64	192	---

Data

P-0-0151-Feedback 1 / Parameter channel / Data

Datatype	Size in bit	Offset in bit	Properties
	992	256	---

BiSS

P-0-0151-Feedback 1 / Parameter channel / Data / BiSS

Datatype	Size in bit	Offset in bit	Properties
	208	0	---

BiSS identification

P-0-0151-Feedback 1 / Parameter channel/ Data / BiSS / BiSS identification

Datatype	Size in bit	Offset in bit	Properties
Enum	64	0	---

Size in bit	LBound	Elements
64	0	4

Feedback identification

P-0-0151-Feedback 1 / Parameter channel/ Data / BiSS / Feedback identification

Datatype	Size in bit	Offset in bit	Properties
	144	64	---

EnDat

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat

Datatype	Size in bit	Offset in bit	Properties
	992	0	---

Additional internal Id ASCII

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Additional internal ASCII id

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Manufacturer parameter

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Manufacturer parameter

Datatype	Size in bit	Offset in bit	Properties
	768	16	---

Operation parameter

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Operation parameter

Datatype	Size in bit	Offset in bit	Properties
	96	784	---

rsvd

P-0-0150-Feedback 1 / Parameter channel/ Data / EnDat / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	112	880	---

Hiperface

P-0-0151-Feedback 1 / Parameter channel/ Data / Hiperface

Datatype	Size in bit	Offset in bit	Properties
	656	0	---

Manufacturer parameter

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Reserved

Datatype	Size in bit	Offset in bit	Properties
Enum	64	0	---

RS485Settings

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Manufacturer parameter / RS485Settings

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

EncoderType

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Manufacturer parameter / EncoderType

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Size of E2Prom in [16bytes]

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Manufacturer parameter / Size of E2Prom in [16bytes]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Options

P-0-0151-Feedback 1 / Parameter channel/ Data / EnDat / Manufacturer parameter / Options

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Serial Number

P-0-0151-Feedback 1 / Parameter channel / Hiperface / Serial Number

Datatype	Size in bit	Offset in bit	Properties
	144	64	---

Firmware version

P-0-0151-Feedback 1 / Parameter channel / Hiperface / Firmware version

Datatype	Size in bit	Offset in bit	Properties
	320	208	---

Firmware date

P-0-0151-Feedback 1 / Parameter channel / Hiperface / Firmware date

Datatype	Size in bit	Offset in bit	Properties
	128	528	---

Hiperface DSL

P-0-0151-Feedback 1 / Parameter channel/ Data / Hiperface DSL

Datatype	Size in bit	Offset in bit	Properties
	992	0	---

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	16	0

Table 11: Properties

Name	Value
UIVisible	False

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	16	16

Table 12: Properties

Name	Value
UIVisible	False

Ip Core Version

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version

Datatype	Size in bit	Offset in bit
Enum	16	32

Encoding

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / Encoding

Datatype	Size in bit	Offset in bit
Enum	2	6

Value	Description
1	DSL Master IP core

Major Revision

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / Major Revision

Datatype	Size in bit	Offset in bit
UINT2	2	4

Minor Revision

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / Minor Revision

Datatype	Size in bit	Offset in bit
UINT4	4	0

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	8	8

Table 13: Properties

Name	Value
UIVisible	False

Encoder Id

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Id

Datatype	Size in bit	Offset in bit
Enum	48	48

Encoder Type

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Type

Datatype	Size in bit	Offset in bit
	16	96

Value	Description
0	Rotary Encoder, bipolar counting
1	Linear Encoder, bipolar counting
2	Rotary Encoder, unipolar counting
3	Linear Encoder, unipolar counting

Encoder Hardware Version

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Hardware Version

Datatype	Size in bit	Offset in bit
UINT	16	112

Table 14: Properties

Name	Value
DisplayDatatype	hexadecimal

Singleturn Resolution

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Singleturn Resolution

Datatype	Size in bit	Offset in bit
UDINT	32	128

Table 15: Properties

Name	Value
DisplayDatatype	hexadecimal

Multiturn Range

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Multiturn Range

Datatype	Size in bit	Offset in bit
UDINT	32	160

Table 16: Properties

Name	Value
DisplayDatatype	hexadecimal

Type Code Name

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Type Code Name

Datatype	Size in bit	Offset in bit
	144	192

string

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Type Code Name / string

Datatype	Size in bit	Offset in bit
STRING(18)	144	0

hex

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Type Code Name / hex

Datatype	Size in bit	Offset in bit
	144	0

Serial No

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Serial No

Datatype	Size in bit	Offset in bit
	80	336

string

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Serial No / string

Datatype	Size in bit	Offset in bit
STRING(10)	80	0

hex

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Serial No / hex

Datatype	Size in bit	Offset in bit
	80	0

Firmware RevNo

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Firmware RevNo

Datatype	Size in bit	Offset in bit
	160	416

string

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Firmware RevNo / string

Datatype	Size in bit	Offset in bit
STRING(20)	160	0

hex

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Firmware RevNo / hex

Datatype	Size in bit	Offset in bit
	160	0

Firmware Date

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Firmware Date

Datatype	Size in bit	Offset in bit
	64	576

string

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Firmware Date / string

Datatype	Size in bit	Offset in bit
STRING(8)	64	0

hex

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Firmware Date / hex

Datatype	Size in bit	Offset in bit
Enum	64	0

Eeprom Size

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Eeprom Size

Datatype	Size in bit	Offset in bit
UINT	16	640

Table 17: Properties

Name	Value
UnitName	byte

Minimum encoder temperature

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Minimum encoder temperature

Datatype	Size in bit	Offset in bit
INT	16	656

Table 18: Properties

Name	Value
DecimalPlaces	1
UnitName	°C

Maximum encoder temperature

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Maximum encoder temperature

Datatype	Size in bit	Offset in bit
INT	16	672

Table 19: Properties

Name	Value
DecimalPlaces	1
UnitName	°C

Maximum encoder speed

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Maximum encoder speed

Datatype	Size in bit	Offset in bit
UINT	16	688

Table 20: Properties

Name	Value
UnitName	rpm

Position offset

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Position offset

Datatype	Size in bit	Offset in bit
ULINT	64	704

Table 21: Properties

Name	Value
UnitName	inc
DisplayDatatype	hexadecimal

Max application acceleration

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Max application acceleration

Datatype	Size in bit	Offset in bit
UDINT	32	768

Table 22: Properties

Name	Value
UnitName	rad/s²
DecimalPlaces	2

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	64	816

Table 23: Properties

Name	Value
UIVisible	False

Sync Mode

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Sync Mode

Datatype	Size in bit	Offset in bit
USINT	8	880

Max accepted sync jitter

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Max accepted sync jitter

Datatype	Size in bit	Offset in bit
USINT	8	888

Table 24: Properties

Name	Value
DisplayDatatype	hexadecimal

Encoder Status error masks

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks

Datatype	Size in bit	Offset in bit
Enum	64	896

EncST 0 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 0 error mask

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 25: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 1 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 1 error mask

Datatype	Size in bit	Offset in bit
USINT	8	8

Table 26: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 2 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 2 error mask

Datatype	Size in bit	Offset in bit
USINT	8	16

Table 27: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 3 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 3 error mask

Datatype	Size in bit	Offset in bit
USINT	8	24

Table 28: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 4 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 4 error mask

Datatype	Size in bit	Offset in bit
USINT	8	32

Table 29: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 5 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 5 error mask

Datatype	Size in bit	Offset in bit
USINT	8	40

Table 30: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 6 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 6 error mask

Datatype	Size in bit	Offset in bit
USINT	8	48

Table 31: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 7 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 7 error mask

Datatype	Size in bit	Offset in bit
USINT	8	56

Table 32: Properties

Name	Value
DisplayDatatype	hexadecimal

Encoder Status error masks (detailed)

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed)

Datatype	Size in bit	Offset in bit
Enum	64	896

EncST 0 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask

Datatype	Size in bit	Offset in bit
Enum	8	0

Protocol Reset Indication

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Protocol Reset Indication

Datatype	Size in bit	Offset in bit
UINT1	1	0

Acceleration Overflow

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Acceleration Overflow

Datatype	Size in bit	Offset in bit
UINT1	1	1

Test In Progress

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Test In Progress

Datatype	Size in bit	Offset in bit
UINT1	1	2

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	1	3

Pos Error: Tracking Filter Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error: Tracking Filter Error

Datatype	Size in bit	Offset in bit
UINT1	1	4

Pos Error: Vector Length Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error: Vector Length Error

Datatype	Size in bit	Offset in bit
UINT1	1	5

Pos Error Counter Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error Counter Error

Datatype	Size in bit	Offset in bit
UINT1	1	6

Pos Error Sync Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error Sync Error

Datatype	Size in bit	Offset in bit
UINT1	1	7

EncST 1 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask

Datatype	Size in bit	Offset in bit
Enum	8	8

Single Turn Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Single Turn Error

Datatype	Size in bit	Offset in bit
UINT1	1	0

Multi Turn Error 1

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Multi Turn Error 1

Datatype	Size in bit	Offset in bit
UINT1	1	1

Multi Turn Error 2

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Multi Turn Error 2

Datatype	Size in bit	Offset in bit
UINT1	1	2

Multi Turn Error 3

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Multi Turn Error 3

Datatype	Size in bit	Offset in bit
UINT1	1	3

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / rsvd

Datentyp	Größe in Bit	Offset in bit
Array of UINT	4	4

EncST 2 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask

Datatype	Size in bit	Offset in bit
Enum	8	16

Power On Selftest

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Power On Selftest

Datatype	Size in bit	Offset in bit
UINT1	1	0

Safety Parameter Warning

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Safety Parameter Warning

Datatype	Size in bit	Offset in bit
UINT1	1	1

Safety Parameter Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Safety Parameter Error

Datatype	Size in bit	Offset in bit
UINT1	1	2

Standard Parameter Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Standard Parameter Error

Datatype	Size in bit	Offset in bit
UINT1	1	3

Internal Communication Error 1

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Internal Communication Error 1

Datatype	Size in bit	Offset in bit
UINT1	1	4

Internal Communication Error 2

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Internal Communication Error 2

Datatype	Size in bit	Offset in bit
UINT1	1	5

Internal System Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Internal System Error

Datatype	Size in bit	Offset in bit
UINT1	1	6

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	1	7

EncST 3 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask

Datatype	Size in bit	Offset in bit
Enum	8	24

Critical Temperature

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Temperature

Datatype	Size in bit	Offset in bit
UINT1	1	0

Critical LED current

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical LED current

Datatype	Size in bit	Offset in bit
UINT1	1	1

Critical Supply Voltage

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Supply Voltage

Datatype	Size in bit	Offset in bit
UINT1	1	2

Critical Speed

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Speed

Datatype	Size in bit	Offset in bit
UINT1	1	3

Critical Acceleration

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Acceleration

Datatype	Size in bit	Offset in bit
UINT1	1	4

Counter Overflow

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Counter Overflow

Datatype	Size in bit	Offset in bit
UINT1	1	5

Internal Monitoring Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Internal Monitoring Error

Datatype	Size in bit	Offset in bit
UINT1	1	6

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	1	7

EncST 4 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask

Format	Size in bit	Offset
Enum	8	32

Invalid Resource Access Argument

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / Invalid Resource Access Argument

Format	Size in bit	Offset
UINT1	1	0

Resource Access Denied

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / Resource Access Denied

Format	Size in bit	Offset
UINT1	1	1

Internal Resource Access Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / Internal Resource Access Error

Format	Size in bit	Offset
UINT1	1	2

File Access Error

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / File Access Error

Format	Size in bit	Offset
UINT1	1	3

rsvd

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / rsvd

Datentyp	Größe in Bit	Offset
Array of UINT	4	4

EncST 5 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 5 error mask

Datatype	Size in bit	Offset in bit
Enum	8	40

EncST5

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 5 error mask / EncST5

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 33: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 6 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 6 error mask

Datatype	Size in bit	Offset in bit
Enum	8	48

EncST6

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 6 error mask / EncST6

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 34: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 7 error mask

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 7 error mask

Datatype	Size in bit	Offset in bit
Enum	8	56

EncST7

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 7 error mask / EncST7

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 35: Properties

Name	Value
DisplayDatatype	hexadecimal

rsvd [Error limits (Rev 0201 compatibility)]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)]

Datatype	Size in bit	Offset in bit
	96	896

Table 36: Properties

Name	Value
UIVisible	False

rsvd [VPOS error limit]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VPOS error limit]

Datatype	Size in bit	Offset in bit
UINT	16	0

rsvd [VEL error limit]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VEL error limit]

Datatype	Size in bit	Offset in bit
UINT	16	16

rsvd [VRT error limit]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VRT error limit]

Datatype	Size in bit	Offset in bit
UINT	16	32

rsvd [POS error limit]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [POS error limit]

Datatype	Size in bit	Offset in bit
UINT	16	48

rsvd [LINK error limit]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [LINK error limit]

Datatype	Size in bit	Offset in bit
UINT	16	64

rsvd [ACC error limit]

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [ACC error limit]

Datatype	Size in bit	Offset in bit
UINT	16	80

AX572x BiSS

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / AX572x BiSS

Datatype	Size in bit	Offset in bit
	432	0

Config slave

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / AX572x BiSS / Config slave

Datatype	Size in bit	Offset in bit
	256	0

Config master

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / AX572x BiSS / Config master

Datatype	Size in bit	Offset in bit
Enum	48	304

Config channel

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / AX572x BiSS / Config channel

Datatype	Size in bit	Offset in bit
Enum	32	336

Status

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / AX572x BiSS / Status

Datatype	Size in bit	Offset in bit
Enum	32	368

Instruction

P-0-0151-Scanned feedback 1 type / Data / Parameter channel / Data / AX572x BiSS / Instruction

Datatype	Size in bit	Offset in bit
Enum	32	400

Manufacturer limits settings

P-0-0151-Scanned feedback 1 type / Data / Manufacturer limits settings

Datatype	Size in bit	Offset in bit
	96	1792

Maximum continuous operation speed

P-0-0151-Scanned feedback 1 type / Data / Manufacturer limits settings / Maximum continuous operation speed

Datatype	Size in bit	Offset in bit
UINT	16	0

Table 37: Properties

Name	Value
UnitName	rps or mm/s

Maximum continuous mechanical speed

P-0-0151-Scanned feedback 1 type / Data / Manufacturer limits settings / Maximum continuous mechanical speed

Datatype	Size in bit	Offset in bit
UINT	16	16

Table 38: Properties

Name	Value
UnitName	rps or mm/s

Maximum temperature

P-0-0151-Scanned feedback 1 type / Data / Manufacturer limits settings / Maximum temperature

Datatype	Size in bit	Offset in bit
UINT	16	32

Table 39: Properties

Name	Value
UnitName	°C

rsvd

P-0-0151-Scanned feedback 1 type / Data / Manufacturer limits settings / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	48	48

rsvd

P-0-0151-Scanned feedback 1 type / Data / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	128	1888

Table 40: Properties

Name	Value
UIVisible	False

P-0-0152 Feedback 1 gear numerator

Feedback 1 gear numerator is usually set to 1 because in most motors is no gear between motor and feedback 1.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. Value	1
Default	1
Max. Value	4095; from Rev. 210: 65535
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0150 [▶ 338], P-0-0153 [▶ 402]

P-0-0153 Feedback 1 gear denominator

Feedback 1 gear denominator is usually set to 1 because in most motors is no gear between motor and feedback 1.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. Value	1
Default	1
Max. Value	4095; from Rev. 210: 65535
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0152 [▶ 401]

P-0-0154 Feedback 1 reference signal

Select the reference source of the feedback system and adjust the compare voltage level. The compare voltage can be set in a range of -570mV up to 570mV.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0130 [▶ 114], S-0-0131 [▶ 115], S-0-0169 [▶ 130], S-0-0170 [▶ 131], S-0-0179 [▶ 132], S-0-0405 [▶ 186], S-0-0409 [▶ 187], S-0-0410 [▶ 189], P-0-0250 [▶ 537], P-0-0251 [▶ 538], P-0-0252 [▶ 542], P-0-0253 [▶ 544], P-0-0254 [▶ 545], P-0-0255 [▶ 546], P-0-0256 [▶ 547], P-0-0257 [▶ 551]

Actual length

P-0-0154-Feedback 1 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0154-Feedback 1 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0154-Feedback 1 / Data

Datatype	Size in bit	Offset in bit	Properties
Enum	64	32	---

Reference source

P-0-0154-Feedback 1 / Reference source

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No source
1	Zero index
2	Sinus
3	Cosinus
4	UVW

Reference index

P-0-0154-Feedback 1 / Reference index

Reserveder Bereich.

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	rsvd

Threshold voltage

P-0-0154-Feedback 1 / Threshold voltage

Datatype	Size in bit	Offset in bit	Properties
INT	16	32	---

Unit: mV

Reserved

P-0-0154-Feedback 1 / Reserved

Reserveder Bereich.

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	--

P-0-0157 Feedback 1 identification

This string with up to 64 byte is stored in the nonvolatile memory of feedback 1. The string is stored in the feedback memory if the procedure command P-0-0158 "Save feedback 1 identification (pc)" is executed and read from the feedback during the power up sequence of the feedback.

Attributes

Name	Value
Datatype	text
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

For further information please look into the involved IDN:

P-0-0158 [▶ 406]

Actual length

P-0-0157-Feedback 1 identification / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0157-Feedback 1 identification / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

P-0-0158 Save feedback 1 identification (pc)

Save the feedback identification to encoder nonvolatile memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0157 [▶ 405]

P-0-0159 Raw position feedback value 1

The raw position feedback value 1 displays the actual position of the motor feedback without any offset and without modulo calculation.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	inc
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0079 [▶ 72]

P-0-0160 Calibrate commutation offset (pc)

With this procedure command (pc) the required mechanical commutation offset of the motor can be adjusted. Be careful: This command may cause a movement of the motor. The resulting offset value can be read via P-0-0058 (Mechanical commutation offset).

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0058 [▶ 225], P-0-0165 [▶ 412]

P-0-0161 Feedback 1: Save commutation offset (pc)

Feedback 1: The commutation offset is saved in the feedback memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0098 [▶ 303]

P-0-0162 Feedback 1: Save digital name plate (pc)

Feedback 1: The digital name plate is saved in the feedback memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0098 [▶ 303]

P-0-0163 Scan feedback 1 (pc)

This procedure command detects the connected feedback 1. The results are displayed in P-0-0151 "Scanned feedback 1 type".

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0150 [▶ 338], P-0-0151 [▶ 370]

P-0-0165 Commutation offset calibration parameter

This parameters are used by the procedure command P-0-0160 "Calibrate commutation offset".

Attributes

Name	Value
Datatype	udec
Data length in bit	512
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0160 [▶ 408]

Actual length

P-0-0165 Commutation offset calibration parameter / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0165 Commutation offset calibration parameter / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0165 Commutation offset calibration parameter / Data

Datatype	Size in bit	Offset in bit	Properties
	480	32	---

Command mode

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Static current vector
1	Wake and Shake
2	Rotor orientation only

Activation

P-0-0165 Commutation offset calibration parameter / Activation

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	Manual
1	On enable request

rsvd

P-0-0165 Commutation offset calibration parameter / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	32	32	---

Static current vector

P-0-0165 Commutation offset calibration parameter / Static current vector

Datatype	Size in bit	Offset in bit	Properties
	96	64	---

Current level

P-0-0165 Commutation offset calibration parameter / Static current vector / Current level

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: %

Duration

P-0-0165 Commutation offset calibration parameter / Static current vector / Duration

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: ms

rsvd

P-0-0165 Commutation offset calibration parameter / Static current vector / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	64	32	---

Wake and Shake

P-0-0165 Commutation offset calibration parameter / Wake and Shake

Datatype	Size in bit	Offset in bit	Properties
	160	160	---

First phase current level

P-0-0165 Commutation offset calibration parameter / Wake and Shake / First phase current vector

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: %

First phase ramp up time

P-0-0165 Commutation offset calibration parameter / Wake and Shake / First phase ramp up time

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: ms

Second phase current level

P-0-0165 Commutation offset calibration parameter / Wake and Shake / Second phase current level

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Unit: %

Second phase ramp up time

P-0-0165 Commutation offset calibration parameter / Wake and Shake / Second phase ramp up time

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Unit: ms

Commutation pos control: Kp

P-0-0165 Commutation offset calibration parameter / Wake and Shake / Commutation pos control: Kp

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Wake and shake expert

P-0-0165 Commutation offset calibration parameter / Wake and Shake expert

Datatype	Size in bit	Offset in bit	Properties
	80	80	---

First phase position monitoring limit

P-0-0165 Commutation offset calibration parameter / Wake and Shake expert / First phase position monitoring limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Unit: deg

First phase step width

P-0-0165 Commutation offset calibration parameter / Wake and Shake expert / First phase step width

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: deg

First phase waiting time after step

P-0-0165 Commutation offset calibration parameter / Wake and Shake expert / First phase waiting time after step

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Unit: ms

Second phase duration

P-0-0165 Commutation offset calibration parameter / Wake and Shake expert / Second phase duration

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Unit: ms

Error monitoring (range of motion)

P-0-0165 Commutation offset calibration parameter / Wake and Shake expert / Error monitoring (range of motion)

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Unit: deg

stRsvd

P-0-0165 Commutation offset calibration parameter / stRsvd

Datatype	Size in bit	Offset in bit	Properties
	160	320	---

P-0-0166 Motor and feedback connection check (pc)

This procedure command can be used to inject a defined (P-0-167) current vector to check commutation and rotation direction.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0167 [▶ 418]

P-0-0167 Motor and feedback connection check parameter

This IDN contains parameters to check commutation and rotation direction (P-0-166).

Attributes

Name	Value
Datatype	udec
Data length in bit	192
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

For further information please look into the involved IDN:

P-0-0166 [▶ 417], P-0-0057 [▶ 224]

Actual length

P-0-0167 Motor and feedback connection check parameter / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0167 Motor and feedback connection check parameter / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0167 Motor and feedback connection check parameter / Data

Datatype	Size in bit	Offset in bit	Properties
	160	32	---

eMode

P-0-0167 Motor and feedback connection check parameter / eMode

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Explication
0	Rotating vector

current level

P-0-0167 Motor and feedback connection check parameter / current level

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: %

Moving distance

P-0-0167 Motor and feedback connection check parameter / moving distance

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Unit: deg/ pole pairs

Velocity

P-0-0167 Motor and feedback connection check parameter / velocity

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Unit: deg/ pole pairs * s

rsvd

P-0-0167 Motor and feedback connection check parameter / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	16	64	---

rsvd

P-0-0167 Motor and feedback connection check parameter / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	16	80	---

Results

P-0-0167 Motor and feedback connection check parameter / Results

Datatype	Size in bit	Offset in bit	Properties
Enum	64	96	---

EqualDirections

P-0-0167 Motor and feedback connection check parameter / Results / EqualDirections

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Explication
0	No
1	Yes

Commutation position difference (electrical)

P-0-0167 Motor and feedback connection check parameter / Results / Commutation position difference (electrical)

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: deg

rsvd

P-0-0167 Motor and feedback connection check parameter / Results / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	16	32	---

rsvd

P-0-0167 Motor and feedback connection check parameter / Results / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	16	48	---

P-0-0168 Actual resolver data

This parameter displays some actual data of the connected resolver.

Attributes

Name	Value
Datatype	udec
Data length in bit	352
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0150 [▶ 338]

Actual length

P-0-0168-Actual resolver data / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0168-Actual resolver data / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0168-Actual resolver data / Data

Format	Size in bit	Offset in bit
	320	32

Initialization

P-0-0168-Actual resolver data / Data / Initialization

Format	Size in bit	Offset in bit
	160	0

Phase shift

P-0-0168-Actual resolver data / Data / Initialization / Phase shift

Format	Size in bit	Offset in bit
INT	16	0

Table 41: Properties

Name	Value
UnitName	deg
DecimalPlaces	2

Sin offset correction

P-0-0168-Actual resolver data / Data / Initialization / Sin offset correction

Format	Size in bit	Offset in bit
INT	16	16

Table 42: Properties

Name	Value
UnitName	inc

Cos offset correction

P-0-0168-Actual resolver data / Data / Initialization / Cos offset correction

Format	Size in bit	Offset in bit
INT	16	32

Table 43: Properties

Name	Value
UnitName	inc

rsvd

P-0-0168-Actual resolver data / Data / Initialization / rsvd

Format	Size in bit	Offset in bit
Array of UINT	112	48

Cyclic

P-0-0168-Actual resolver data / Data / Cyclic

Format	Size in bit	Offset in bit
	160	160

Vector length

P-0-0168-Actual resolver data / Data / Cyclic / Vector length

Format	Size in bit	Offset in bit
UINT	16	0

Table 44: Properties

Name	Value
UnitName	%
DecimalPlaces	2

Sin max

P-0-0168-Actual resolver data / Data / Cyclic / Sin max

Datatype	Size in bit	Offset in bit
INT	16	16

Table 45: Properties

Name	Value
UnitName	inc

Sin min

P-0-0168-Actual resolver data / Data / Cyclic / Sin min

Format	Size in bit	Offset in bit
INT	16	32

Table 46: Properties

Name	Value
UnitName	inc

Cos max

P-0-0168-Actual resolver data / Data / Cyclic / Cos max

Format	Size in bit	Offset in bit
INT	16	48

Table 47: Properties

Name	Value
UnitName	inc

Cos min

P-0-0168-Actual resolver data / Data / Cyclic / Cos min

Format	Size in bit	Offset in bit
INT	16	64

Table 48: Properties

Name	Value
UnitName	inc

rsvd

P-0-0168-Actual resolver data / Data / Cyclic / rsvd

Format	Size in bit	Offset in bit
Array of UINT	80	80

P-0-0169 Feedback status

This parameter displays some actual data of the connected encoder.

Attributes

Name	Value
Datatype	udec
Data length in bit	992
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Parameter structure

Bit	Description
0	**IP core enabled** 0 = false 1 = true
1	**Position error** 0 = False 1 = True
2	**Position ready** 0 = False 1 = True
3	**Encoder ready** 0 = False 1 = True
4	**Last position valid** 0 = False 1 = True
5	**CRC register error** 0 = False 1 = True
6	**Startup done** 0 = False 1 = True
7	**UART error restart required** 0 = False 1 = True
8	**UART rx timeout** 0 = False 1 = True
9	**CRC position error** 0 = False 1 = True
10	**CRC z1 error** 0 = False 1 = True
11	**CRC z2 error** 0 = False 1 = True
12	**Encoder error 1** 0 = False 1 = True
13	**No encoder error 2** 0 = False 1 = True
14	**Encoder warning** 0 = False 1 = True
15	**Encoder referenced** 0 = False 1 = True

P-0-0170 Feedback data state

This read only parameter displays the data state flags of the feedback 1 and 2 position.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Parameter structure:

Bit	Description
0	**Feedback 1 Position** 0 = invalid 1 = valid
1	**Feedback 1 Commutation Position** 0 = invalid 1 = valid
2	**Feedback 1 Error** 0 = invalid 1 = valid
3 - 7	**Reserved**
8	**Feedback 2 Position** 0 = invalid 1 = valid
9	**Reserved**
10	**Feedback 2 Error** 0 = invalid 1 = valid
11 - 15	**Reserved**

For further information please look into the involved IDN:

S-0-0011 [▶ 26]

P-0-0180 Feedback 2 type

This parameter structure defines the feedback 2 type. Feedback 2 is the secondary feedback connected to the load side and used in the position control loop if a appropriate operation mode is selected.

Attributes

Name	Value
Datatype	udec
Data length in bit	1824
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0180-Feedback 2 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0180-Feedback 2 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0180-Feedback 2 / Data

Datatype	Size in bit	Offset in bit	Properties
UINT	1792	32	---

Manufacturer

P-0-0180-Feedback 2 / Manufacturer

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Unknown manufacturer
1	Hengstler
2	Heidenhain
3	Sick
4	Siko
5	Kübler
6	Lika
7	Harowe
8	LTN
9	Numerik Jena
10	Hiwin
11	Tecnotion
12	Beckhoff
13	Renishaw
14	Baumer
15	HighResolution
16	AMO
17	Tyco
18	Balluff
19	Schneeberger
20	Pwb

Feedback type

P-0-0180-Feedback 2 / Feedback type

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	Rotational feedback
1	Linear Feedback

Feedback type string

P-0-0180-Feedback 2 / Feedback type string

Datatype	Size in bit	Offset in bit	Properties
String (30)	240	32	---

Feedback use

P-0-0180-Feedback 2 / Feedback use

Format	Size in bit	Offset in bit	Properties
Enum	16	272	---

Value	Description
0	Commutation motorfeedback
1	Additional second motorfeedback
3	Internal: Scan feedback

Feedback direction

P-0-0150-Feedback 2 / Feedback direction

Format	Size in bit	Offset in bit	Properties
Enum	16	288	---

Value	Description
0	Positive direction
1	Negative direction

rsvd

P-0-0180-Feedback 2 / Parameter channel / Rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	48	304	---

Power settings

P-0-0180-Feedback 2 / Power settings

Format	Size in bit	Offset in bit	Properties
	96	352	---

Control voltage

P-0-0180-Feedback 2 / Power setting / Control voltage

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	off
1	8V/11V, pin 6 and 2
2	5V with sense, pin 4 and 2, sense pin 12 and 10
3	5V without sense, pin 4 and 2

Connector

P-0-0180-Feedback 2 / Power setting / Connector

Format	Size in bit	Offset in bit	Properties
Enum	16	32	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

Wait time after power up

P-0-0180-Feedback 2 / Power setting / Wait time after power up

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: ms

Connector

Datatype	Size in bit	Offset in bit	Properties
Enum	16	32	--

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	48	48	--

Process channel

P-0-0180-Feedback 2 / Process channel

Format	Size in bit	Offset in bit	Properties
	384	448	---

Process interface

P-0-0180-Feedback 2 / Process channel / Process interface

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No interface
1	Sin / Cos with 1 V peak to peak
2	Incremental 5V TTL
3	Resolver
4	MES
5	Digital Interface
6	Incremental HTL

Connector

P-0-0180-Feedback 2 / Process channel / Connector

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	32	32	--

Data

P-0-0180-Feedback 2 / Process channel / Data

Format	Size in bit	Offset in bit	Properties
	320	64	---

Sin / Cos

P-0-0180-Feedback 2 / Process channel / Data / Sin - Cos

Format	Size in bit	Offset in bit	Properties
	320	0	---

Signal periods per rotation

P-0-0180-Feedback 2 / Process channel / Data / Sin –Cos / Signal periods per rotation

Interface-Revision	Value
until 203	16 until 131071
from 210	1 until 1048575

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Table 49: Properties

Name	Value
Decimal point	0
MinValue	1
MaxValue	131071

Length per signal period

P-0-0180-Feedback 2 / Process channel / Data / Sin – Cos / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Unit: nm

Sin gain correction

P-0-0180-Feedback 2 / Process channel / Data / Sin – Cos / Sin gain correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Table 50: Properties

Name	Value
Decimal point	3
MinValue	0
MaxValue	2000
Default	1000

Sin offset correction

P-0-0180-Feedback 2 / Process channel / Data / Sin – Cos / Sin offset correction

Datatype	Size in bit	Offset in bit	Properties
INT	16	80	---

Table 51: Properties

Name	Value
MinValue	-30000
MaxValue	30000

Cos gain correction

P-0-0180-Feedback 2 / Process channel / Data / Sin – Cos / Cos gain correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	96	---

Table 52: Properties

Name	Value
Decimal point	3
MinValue	0
MaxValue	2000
Default	1000

Cos offset correction

P-0-0180-Feedback 2 / Process channel / Data / Sin – Cos / Cos offset correction

Format	Size in bit	Offset in bit	Properties
INT	16	112	---

Table 53: Properties

Name	Value
MinValue	-30000
MaxValue	30000

SinCos 1Vss monitoring

P-0-0180-Feedback 2 / Process channel / Data / Sin – Cos / SinCos 1Vss monitoring

Format	Size in bit	Offset in bit	Properties
Enum	16	128	---

Value	Description
0	Error monitoring
1	Error monitoring and Sin/Cos logging
2	Error monitoring (only wire break detection) and Sin/Cos logging
3	Error monitoring (only wire break detection)

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	176	144	--

TTL

P-0-0180-Feedback 2 / Process channel / Data / TTL

Format	Size in bit	Offset in bit	Properties
	320	0	---

Signal periods per rotation

P-0-0180-Feedback 2 / Process channel / Data / TTL / Signal periods per rotation

Interface-Revision	Value
until 203	16 until 131071
from 210	1 until 1048575

Format	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Table 54: Properties

Name	Value
Decimal point	0
MinValue	1
MaxValue	524287

Length per signal period

P-0-0180-Feedback 2 / Process channel / Data / TTL / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Unit: Nm

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	256	64	--

Resolver

P-0-0180-Feedback 2 / Process channel / Data / Resolver

Format	Size in bit	Offset in bit	Properties
	320	0	---

Control word

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Control word

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Enable phase adjustment

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Control word / Enable phase adjustment

Datatype	Size in bit	Offset in bit	Properties
UINT1	1	0	---

Enable offset adjustment

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Control word / Enable offset adjustment

Format	Size in bit	Offset in bit	Properties
UINT1	1	1	---

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	14	2	--

Number of poles

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Number of poles

Datatype	Size in bit	Offset in bit	Properties
USINT	8	16	---

Table 55: Properties

Name	Value
MinValue	2
MaxValue	8

Excitation frequency

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Excitation frequency

Datatype	Size in bit	Offset in bit	Properties
USINT	8	24	---

Table 56: Properties

Name	Value
Unit	kHz
MinValue	8
MaxValue	8

Transformation ratio

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Transformation ratio

Datatype	Size in bit	Offset in bit	Properties
USINT	16	32	---

Table 57: Properties

Name	Value
Decimal point	2
MinValue	30
MaxValue	50

Phase shift

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Phase shift

Datatype	Size in bit	Offset in bit	Properties
INT	16	48	---

Unit: deg

Table 58: Properties

Name	Value
Unit	deg
Decimal point	2

Sin/Cos amplitude correction

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Sin/Cos-Amplitude correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Table 59: Properties

Name	Value
Decimal point	4
MinValue	9000
MaxValue	11000

Amplitude monitoring

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Amplitude monitoring

Datatype	Size in bit	Offset in bit	Properties
Enum	32	96	---

Max limit

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Amplitude monitoring / Max limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Table 60: Properties

Name	Value
Unit	%
MinValue	1050
MaxValue	1250
Decimal point	1

Min limit

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Amplitude monitoring / Min limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Table 61: Properties

Name	Value
Unit	%
MinValue	400
MaxValue	950
Decimal point	1

Observer

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Observer

Datatype	Size in bit	Offset in bit	Properties
Enum	32	128	---

Bandwidth

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Observer / Bandwidth

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Table 62: Properties

Name	Value
Unit	Hz
MinValue	25
MaxValue	1000

Correction factor Iq to Acc

P-0-0180-Feedback 2 / Process channel / Data / Resolver / Observer / Correction factor Iq to Acc

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Table 63: Properties

Name	Value
MinValue	0
MaxValue	2000
Decimal point	3

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	160	160	--

MES

P-0-0180-Feedback 2 / Process channel / Data / MES

Format	Size in bit	Offset in bit	Properties
	320	0	---

Control word

P-0-0180-Feedback 2 / Process channel / Data / MES / Control word

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	1	0	--

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	1	1	--

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	14	2	--

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	16	16	--

Sin offset

P-0-0180-Feedback 2 / Process channel / Data / MES / Sin offset

Datatype	Size in bit	Offset in bit	Properties
INT	16	32	---

Table 64: Properties

Name	Value
Unit	inc

Cos offset

P-0-0180-Feedback 2 / Process channel / Data / MES / Cos offset

Datatype	Size in bit	Offset in bit	Properties
INT	16	48	---

Table 65: Properties

Name	Value
Unit	inc

Sin/Cos-Amplitude correction

P-0-0180-Feedback 2 / Process channel / Data / MES / Sin/Cos-Amplitude correction

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Table 66: Properties

Name	Value
Decimal point	4
MinValue	9000
MaxValue	11000

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	16	80	--

Amplitude monitoring

P-0-0180-Feedback 2 / Process channel / Data / MES / Amplitude monitoring

Datatype	Size in bit	Offset in bit	Properties
Enum	32	96	---

Max limit

P-0-0180-Feedback 2 / Process channel / Data / MES / Amplitude monitoring / Max limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Table 67: Properties

Name	Value
Unit	%
MinValue	1050
MaxValue	1250
Decimal point	1

Min limit

P-0-0180-Feedback 2 / Process channel / Data / MES / Amplitude monitoring / Min limit

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Table 68: Properties

Name	Value
Unit	%
MinValue	400
MaxValue	950
Decimal point	1

Observer

P-0-0180-Feedback 2 / Process channel / Data / MES / Observer

Datatype	Size in bit	Offset in bit	Properties
Enum	32	128	---

Bandwidth

P-0-0180-Feedback 2 / Process channel / Data / MES / Observer / Bandwidth

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Table 69: Properties

Name	Value
Unit	Hz
MinValue	25
MaxValue	1000

Correction factor Iq to Acc

P-0-0180-Feedback 2 / Process channel / Data / MES / Observer / Correction factor Iq to Acc

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Table 70: Properties

Name	Value
MinValue	0
MaxValue	2000
Decimal point	3

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	160	160	--

HTL

P-0-0180-Feedback 2 / Process channel / Data / HTL

Datatype	Size in bit	Offset in bit	Properties
	320	0	---

Signal periods per rotation

P-0-0180-Feedback 2 / Process channel / Data / HTL / Signal periods per rotation

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Table 71: Properties

Name	Value
Decimal point	0
MinValue (from Revision 202)	16
MaxValue (from Revision 202)	131071

Length per signal period

P-0-0180-Feedback 2 / Process channel / Data / HTL / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Unit: nm

rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	256	64	--

Parameter channel

P-0-0180-Feedback 2 / Parameter channel

Format	Size in bit	Offset in bit	Properties
	736	832	---

Parameter interface

P-0-0180-Feedback 2 / Parameter channel/ Parameter interface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No commutation interface
1	BiSS
2	EnDat 2.1
3	EnDat 2.2
4	HIPERFACE
5	BiSS C-Mode
6	BiSS C-Mode unidirectional
7	HIPERFACE DSL
10	SSI binär
11	SSI gray
100	Electrical analog commutation channel: sin(x) and sin(x-120)
102	Mechanical analog commutation channel: cos and sin
103	Electrical analog commutation channel: cos and sin

Connector

P-0-0180-Feedback 2 / Parameter channel / Connector

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

Identifier

P-0-0180-Feedback 2 / Parameter channel/ Identifier

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Bit resolution singleturn position

P-0-0180-Feedback 2 / Parameter channel / Bit resolution singleturn position

Format	Size in bit	Offset in bit	Properties
UINT	16	64	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Bit resolution multiturn position

P-0-0180-Feedback 2 / Parameter channel/ Bit resolution multiturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Also see about this

S-0-0079 Position resolution [▶ 72]

Number of clockcycles to get singleturn position or absolute position

P-0-0180-Feedback 2 / Parameter channel / Number of clockcycles to get a singleturn position or absolute position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	96	---

Number of clockcycles get a multiturn position

P-0-0180-Feedback 2 / Parameter channel/ Number of clockcycles to get a multiturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

Digital name plate

P-0-0180-Feedback 2 / Parameter channel/ Digital name plate

Datatype	Size in bit	Offset in bit	Properties
Enum	16	128	---

Value	Description
0	No digital name plate
1	Digital name plate: Beckhoff
2	Electronic data sheet: Beckhoff

Commutation mode

P-0-0180-Feedback 2 / Parameter channel/ Commutation mode

Datatype	Size in bit	Offset in bit	Properties
Enum	4	144	---

Value	Description
0	No commutation position
1	Feedback commutation offset
2	Commutation offset 0 deg
3	Adjustable mechanical offset (P-0-0150)

Adjustible commutation offset (mechanical)

P-0-0180-Feedback 2 / Parameter channel / Adjusible commutation offset (mechanical)

Datatype	Size in bit	Offset in bit	Properties
UINT12	12	148	---

Unit: deg

Linear resolution about digital interface

P-0-0180-Feedback 2 / Parameter channel / Linear resolution about digital interface in nm

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

Unit: nm

rsvd

P-0-0180-Feedback 2 / Parameter channel / Rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	64	192	---

Data

P-0-0180-Feedback 2 / Parameter channel/ Data

Format	Size in bit	Offset in bit	Properties
	480	256	---

BiSS

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS

Format	Size in bit	Offset in bit	Properties
	480	0	---

Sensor mode: Data description

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Data description

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Msb first, left aligned, multiposition-singleposition-status-crc-mcd
1	Msb first, right aligned, multiposition-singleposition-status-crc

Sensor mode: Number of status bits

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Number of status bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Sensor mode: Number of additional data bits

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Number of additional data bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Sensor mode: Number of CRC bits

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Number of CRC bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Sensor mode: Number of CRC polynomial

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Number of CRC polynomial

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Sensor mode: Inverted CRC

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Inverted CRC

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Mcd: Type

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Mcd: Type

Datatype	Size in bit	Offset in bit	Properties
Enum	16	96	---

Value	Description
0	no type

Mcd: Complete number of data bits

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Mcd: Complete number of data bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

Mcd: Complete number of CRC bits

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Mcd: Complete number of CRC bits

Datatype	Size in bit	Offset in bit	Properties
UINT	16	128	---

Mcd: CRC polynomial

P-0-0180-Feedback 2 / Paramerter channel / Data/ BiSS / Mcd: CRC polynomial

Datatype	Size in bit	Offset in bit	Properties
UINT	16	144	---

Mcd: Inverted CRC

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Mcd: Inverted CRC

Datatype	Size in bit	Offset in bit	Properties
UINT	16	160	---

Sensor mode: timeout time

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: timeout time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	176	---

Unit: ms

Sensor mode: Min clock speed

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Min clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	192	---

Unit: kHz

Sensor mode: Max clock speed

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Max clock speed in kHz

Format	Size in bit	Offset in bit	Properties
UINT	16	208	---

Unit: kHz

Sensor mode: Max calculation time

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Sensor mode: Max calculation time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	224	---

Unit: µs

Register mode: Timeout time

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Register mode: Timeout time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	240	---

Unit: µs

Register mode: Min clock speed

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Register mode: Min clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	256	---

Unit: kHz

Register mode: Max clock speed

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Register mode: Max clock speed in kHz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	272	---

Unit: kHz

Register mode: Max write time

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Register mode: Max write time in ms

Datatype	Size in bit	Offset in bit	Properties
UINT	16	288	---

Unit: ms

Register description version number

P-0-0180-Feedback 2/ Parameter channel/ Data / BiSS / Register description version number

Format	Size in bit	Offset in bit	Properties
UINT	16	304	---

OEM: Bank number

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / OEM: Bank number

Datatype	Size in bit	Offset in bit	Properties
UINT	16	320	---

OEM: Start address

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / OEM: Start address

Datatype	Size in bit	Offset in bit	Properties
UINT	16	336	---

OEM: Length in byte

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / OEM: Length in byte

Datatype	Size in bit	Offset in bit	Properties
UINT	16	352	---

Multi slave support

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Multi slave support

Datatype	Size in bit	Offset in bit	Properties
UINT	16	368	---

Pretrigger time encoder to sync

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Pretrigger time encoder to sync in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	384	---

Unit: µs

Position calculation time encoder in µs

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Position calculation time encoder in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	400	---

Unit: µs

Reserved

P-0-0180-Feedback 2 / Parameter channel/ Data / BiSS / Reserved

Format	Size in bit	Offset in bit	Properties
Enum	64	416	---

EnDat

P-0-0180-Feedback 2 / Parameter channel/ Data / EnDat

Datatype	Size in bit	Offset in bit	Properties
	464	0	---

Additional internal ASCII Id

P-0-0180-Feedback 2 / Parameter channel/ Data / EnDat / Additional internal ASCII id

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max. clock low time in µs

P-0-0180-Feedback 2 / Parameter channel/ Data / EnDat / Max. clock low time in µs

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: µs

Hiperface

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Reserved

P-0-0180-Feedback 2 / Parameter channel/ Data / EnDat / Reserved

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Hiperface DSL

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL

Format	Size in bit	Offset in bit	Properties
	480	0	---

Sync Mode

Format	Size in bit	Offset in bit	Properties
USINT	8	0	--

Max accepted sync jitter

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Max accepted sync jitter

Datatype	Size in bit	Offset in bit	Properties
USINT	8	8	---

Max application acceleration

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Max application acceleration

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	128	---

Unit: rad/s²

Use customized " Max accepted position deviation"

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Use customized „Max accepted position deviation“!

Datatype	Size in bit	Offset in bit	Properties
Enum	1	175	---

Value	Description
0	No (Use default!)
1	Yes

Max accepted position deviation (mechanical)

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Max accepted position deviation (mechanical)

Datatype	Size in bit	Offset in bit	Properties
UINT15	15	160	---

Unit: deg

Use customized "Encoder Status error masks"

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Use customized “Encoder Status error masks”

Format	Size in bit	Offset in bit	Properties
Enum	16	176	---

Value	Description
0	No (Use default!)
1	Yes

Encoder Status error masks

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder Status error masks

Format	Size in bit	Offset in bit	Properties
Enum	64	192	---

Encoder status 0 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 0 error mask

Datatype	Size in bit	Offset in bit	Properties
USINT	8	0	---

Table 72: Properties

Name	Value
Display	hex

Encoder status 1 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 1 error mask

Datatype	Size in bit	Offset in bit	Properties
USINT	8	8	---

Table 73: Properties

Name	Value
Display	hex

Encoder status 2 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks /
Encoder status 2 error mask

Format	Size in bit	Offset in bit	Properties
USINT	8	16	---

Table 74: Properties

Name	Value
Display	hex

Encoder status 3 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 3 error mask

Datatype	Size in bit	Offset in bit	Properties
USINT	8	24	---

Table 75: Properties

Name	Value
Display	hex

Encoder status 4 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 4 error mask

Datatype	Size in bit	Offset in bit	Properties
USINT	8	32	---

Table 76: Properties

Name	Value
Display	hex

Encoder status 5 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 5 error mask

Datatype	Size in bit	Offset in bit	Properties
USINT	8	40	---

Table 77: Properties

Name	Value
Display	hex

Encoder status 6 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/
Encoder status 6 error mask

Format	Size in bit	Offset in bit	Properties
USINT	8	48	---

Table 78: Properties

Name	Value
Display	hex

Encoder status 7 error mask

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / Encoder status error masks/ Encoder status 7 error mask

Datatype	Size in bit	Offset in bit	Properties
USINT	8	56	---

Table 79: Properties

Name	Value
Display	hex

rsvd [Error limits (Rev 0201 compatibility)]

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)]

Datatype	Size in bit	Offset in bit	Properties
	112	16	---

rsvd [VPOS error limit]

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VPOS error limit]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

rsvd [VEL error limit]

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VEL error limit]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

rsvd [VRT error limit]

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VRT error limit]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

rsvd [POS error limit]

P-0-0180-Feedback 1 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [POS error limit]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

rsvd [LINK error limit]

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [LINK error limit]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

rsvd [ACC error limit]

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [ACC error limit]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

rsvd

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UNIT	16	96	---

rsvd

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd

Format	Size in bit	Offset in bit	Properties
Array of UNIT	224	256	---

Manufacturer limits settings

P-0-0180-Feedback 2 / Parameter channel/ Data / Manufacturer limits settings

Format	Size in bit	Offset in bit	Properties
	96	1568	---

Maximum operation speed

P-0-0180-Feedback 2 / Parameter channel/ Data / Manufacturer limits settings / Maximum operation speed

Format	Size in bit	Offset in bit	Properties
	16	0	---

Unit: rps or mm/s

Maximum continuous mechanical speed

P-0-0180-Feedback 2 / Parameter channel/ Data / Manufacturer limits settings / Maximum continuous mechanical speed

Datatype	Size in bit	Offset in bit	Properties
	16	16	---

Unit: rps or mm/s

Maximum temperature

P-0-0180-Feedback 2 / Parameter channel/ Data / Manufacturer limits settings / Maximum temperature

Datatype	Size in bit	Offset in bit	Properties
	16	32	---

Unit: °C

rsvd

P-0-0180-Feedback 2 / Parameter channel/ Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd

Format	Size in bit	Offset in bit	Properties
Array of UNIT	48	48	---

Feedback options

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options

Format	Size in bit	Offset in bit	Properties
Enum	32	1664	---

Digital inputs

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Input A (single ended)

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs / Input A (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	0	---

Value	Description
0	Not used
1	used

Input B (single ended)

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs / Input B (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	1	---

Value	Description
0	Not used
1	used

Input C (single ended)

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs / Input C (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	2	---

Value	Description
0	Not used
1	used

Input D (single ended)

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs / Input D (single ended)

Datatype	Size in bit	Offset in bit	Properties
Enum	1	3	---

Value	Description
0	Not used
1	used

Input E (differential)

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs / Input D (differential)

Format	Size in bit	Offset in bit	Properties
Enum	1	4	---

Value	Description
0	Not used
1	used

Input F (differential)

P-0-0180-Feedback 2 / Parameter channel/ Data / Feedback options / Digital inputs / Input E (differential)

Format	Size in bit	Offset in bit	Properties
Enum	1	5	---

Value	Description
0	Not used
1	used

P-0-0181 Scanned feedback 2 type

This read only parameter structure displays the feedback 2 data which are read from the feedback during the execution of P-0-0193 "Scan feedback 2 (pc)".

Attributes

Name	Value
Datatype	udec
Data length in bit	2048
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 201

Actual length

P-0-0181-Feedback 2 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0181-Feedback 2 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0181-Feedback 2 / Data

Datatype	Size in bit	Offset in bit	Properties
	2016	32	---

Manufacturer settings

P-0-0181-Feedback 2 / Manufacturer

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Unknown manufacturer
1	Hengstler
2	Heidenhain
3	Sick
4	Siko
5	Kübler
6	Lika
7	Harowe
8	LTN
9	Numerik Jena
10	Hiwin
11	Tecnotion
12	Beckhoff
13	Renishaw
14	Baumer
15	HighResolution
16	AMO
17	Tyco
18	Balluff
19	Schneeberger
20	Pwb

Feedback type

P-0-0181-Feedback 2 / Feedback type

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	Rotational feedback
1	Linear feedback

Feedback type string

P-0-0181-Feedback 2 / Feedback type string

Datatype	Size in bit	Offset in bit	Properties
	240	32	---

rsvd

P-0-0181-Feedback 2 / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	80	272	---

Size in bit	LBound	Elements
80	0	5

Process channel

P-0-0181-Feedback 2 / Process channel

Datatype	Size in bit	Offset in bit	Properties
	192	352	---

Process interface

P-0-0181-Feedback 2 / Process channel / Process interface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No interface
1	Sin / Cos with 1 V peak to peak
2	Incremental 5V TTL
3	Resolver
4	MES
5	Digital Interface
6	Incremental HTL

Connector

P-0-0181-Feedback 2 / Process channel / Connector

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

rsvd

P-0-0181-Feedback 2 / Process Channel / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	32	32	---

Data

P-0-0181-Feedback 2 / Process channel / Data

Datatype	Size in bit	Offset in bit	Properties
	128	64	---

Sin / Cos

P-0-0181-Feedback 2 / Process channel / Data / Sin - Cos

Datatype	Size in bit	Offset in bit	Properties
	128	0	---

Resolution per rotation

P-0-0181-Feedback 2 / Process channel / Data / Sin – Cos / Resolution per rotation

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Length per signal period

P-0-0181-Feedback 2 type / Process channel / Data / Sin – Cos / Length per signal period

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

rsvd

P-0-0181-Feedback 2 type/ Process channel / Data / Sin – Cos / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	64	64	---

Size in bit	LBound	Elements
64	0	4

Resolver

P-0-0181-Feedback 2 / Process channel / Data / Resolver

Datatype	Size in bit	Offset in bit	Properties
	128	0	---

Number of pole pairs

P-0-0181-Feedback 2 / Process channel / Data / Resolver / Number of poles

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	

Exciting frequency

P-0-0181-Feedback 2 / Process channel / Data / Resolver / frequency

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	96	32	---

Unit: kHz

rsvd

P-0-0181-Feedback 2 / Process channel / Data / Resolver / rsvd

Datatype	Size in bit	LBound	Elements
Array of UINT	96	32	6

Parameter channel

P-0-0181-Feedback 2 / Parameter channel

Datatype	Size in bit	Offset in bit	Properties
	1248	544	---

Parameter interface

P-0-0181-Feedback 2 / Parameter channel / Parameter interface

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No commutation interface
1	BiSS
2	EnDat 2.1
3	EnDat 2.2
4	HIPERFACE
5	BiSS C-Mode
6	BiSS C-Mode unidirectional
7	HIPERFACE DSL
10	SSI binär
11	SSI gray
100	Electrical analog commutation channel: sin(x) and sin(x-120)
102	Mechanical analog commutation channel: cos and sin
103	Electrical analog commutation channel: cos and sin

Connector

P-0-0181-Feedback 2 / Parameter channel / Connector

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	No connector
3	X11 (Front, Encoder, Channel A)
4	X12 (Front, Resolver, Channel A)
5	X21 (Front, Encoder, Channel B)
6	X22 (Front, Resolver, Channel B)
14	X14 (One cable feedback, Channel A)
24	X24 (One cable feedback, Channel B)
41	X41 (Option Slot, Encoder, Channel A)
42	X42 (Option Slot, Encoder, Channel B)

Identifier

P-0-0181-Feedback 2 / Parameter channel / Identifier

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Bit resolution singleturn position

P-0-0181-Feedback 2 / Parameter channel / Bit resolution single position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	64	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Bit resolution multiturn position

P-0-0181-Feedback 2 / Parameter channel/ Bit resolution multi position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Also see about this

- S-0-0079 Position resolution [▶ 72]

Number of clockcycles to get singleturn position or absolute position

P-0-0181-Feedback 2 / Parameter channel / Number of clockcycles to get a singleturn position or absolute position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	96	---

Number of clockcycles to get multiturn position

P-0-0181-Feedback 2 / Parameter channel/ Number of clockcycles to get a multiturn position

Datatype	Size in bit	Offset in bit	Properties
UINT	16	112	---

Digital name plate

P-0-0181-Feedback 2 / Parameter channel / Digital name plate

Datatype	Size in bit	Offset in bit	Properties
Enum	16	128	---

Value	Description
0	No digital name plate
1	Digital name plate: Beckhoff
2	Electronic data sheet: Beckhoff

Commutation mode

P-0-0181-Feedback 2 / Parameter channel / Commutation mode

Datatype	Size in bit	Offset in bit	Properties
Enum	4	144	---

Value	Description
0	No commutation position
1	Feedback commutation offset
2	Commutation offset 0 deg
3	Adjustable mechanical offset (P-0-0150)

Adjustible commutation offset (mechanical)

P-0-0181-Feedback 2 / Parameter channel / Adjusible commutation offset (mechanical)

Datatype	Size in bit	Offset in bit	Properties
UINT12	12	148	---

Unit: deg

Linear resolution about digital interface

P-0-0181-Feedback 2 / Parameter channel / Linear resolution about digital interface in nm

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

Unit: nm

Serial number

P-0-0181-Feedback 2 / Parameter channel / Serial number

Datatype	Size in bit	Offset in bit	Properties
ULINT	64	192	---

Data

P-0-0181-Feedback 2 / Parameter channel / Data

Datatype	Size in bit	Offset in bit	Properties
	992	256	---

BiSS

P-0-0181-Feedback 2 / Parameter channel / Data / BiSS

Datatype	Size in bit	Offset in bit	Properties
	208	0	---

BiSS identification

P-0-0181-Feedback 2 / Parameter channel/ Data / BiSS / BiSS identification

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	64	0	---

Size in bit	LBound	Elements
64	0	4

Feedback identification

P-0-0181-Feedback 2 / Parameter channel/ Data / BiSS / Feedback identification

Datatype	Size in bit	Offset in bit	Properties
	144	64	---

EnDat

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat

Datatype	Size in bit	Offset in bit	Properties
	992	0	---

Additional internal ASCII Id

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Additional internal ASCII id

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Manufacturer parameter

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Manufacturer parameter

Datatype	Size in bit	Offset in bit	Properties
Enum	64	0	---

Operation parameter

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Operation parameter

Datatype	Size in bit	Offset in bit	Properties
Enum	96	784	---

rsvd

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	112	880	---

Hiperface

P-0-0181-Feedback 2 / Parameter channel/ Data / Hiperface

Datatype	Size in bit	Offset in bit	Properties
Enum	656	0	---

Manufacturer parameter

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Reserved

Datatype	Size in bit	Offset in bit	Properties
UINT	64	0	---

RS485Settings

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Manufacturer parameter / RS485Settings

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

EncoderType

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Manufacturer parameter / EncoderType

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Size of E2Prom in [16bytes]

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Manufacturer parameter / Size of E2Prom in [16bytes]

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Options

P-0-0181-Feedback 2 / Parameter channel/ Data / EnDat / Manufacturer parameter / Options

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	---

Serial Number

P-0-0181-Feedback 2 / Parameter channel / Hiperface / Serial Number

Datatype	Size in bit	Offset in bit	Properties
	144	64	---

Firmware version

P-0-0181-Feedback 2 / Parameter channel / Hiperface / Firmware version

Datatype	Size in bit	Offset in bit	Properties
	320	208	---

Firmware date

P-0-0181-Feedback 2 / Parameter channel / Hiperface / Firmware date

Datatype	Size in bit	Offset in bit	Properties
	128	528	---

Hiperface DSL

P-0-0181-Feedback 2 / Parameter channel/ Data / Hiperface DSL

Datatype	Size in bit	Offset in bit	Properties
	992	0	---

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd

Datatype	Size in bit	Offset in bit
UINT	16	0

Table 80: Properties

Name	Value
UIVisible	False

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd

Datatype	Size in bit	Offset in bit
UINT	16	16

Table 81: Properties

Name	Value
UIVisible	False

Ip Core Version

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version

Datatype	Size in bit	Offset in bit
Enum	16	32

Encoding

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / Encoding

Datatype	Size in bit	Offset in bit
Enum	2	6

Value	Description
1	DSL Master IP core

Major Revision

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / Major Revision

Datatype	Size in bit	Offset in bit
UINT2	2	4

Minor Revision

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / Minor Revision

Datatype	Size in bit	Offset in bit
UINT4	4	0

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Ip Core Version / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	8	8

Table 82: Properties

Name	Value
UIVisible	False

Encoder Id

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Id

Datatype	Size in bit	Offset in bit
Enum	48	48

Encoder Type

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Type

Datatype	Size in bit	Offset in bit
Enum	16	96

Value	Description
0	Rotary Encoder, bipolar counting
1	Linear Encoder, bipolar counting
2	Rotary Encoder, unipolar counting
3	Linear Encoder, unipolar counting

Encoder Hardware Version

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Hardware Version

Datatype	Size in bit	Offset in bit
UINT	16	112

Table 83: Properties

Name	Value
DisplayDatatype	hexadecimal

Singleturn Resolution

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Singleturn Resolution

Datatype	Size in bit	Offset in bit
UDINT	32	128

Table 84: Properties

Name	Value
DisplayDatatype	hexadecimal

Multiturn Range

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Multiturn Range

Datatype	Size in bit	Offset in bit
UDINT	32	160

Table 85: Properties

Name	Value
DisplayDatatype	hexadecimal

Type Code Name

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Type Code Name

Datatype	Size in bit	Offset in bit
	144	192

string

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Type Code Name / string

Datatype	Size in bit	Offset in bit
STRING(18)	144	0

hex

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Type Code Name / hex

Datatype	Size in bit	Offset in bit
	144	0

Serial No

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Serial No

Datatype	Size in bit	Offset in bit
	80	336

string

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Serial No / string

Datatype	Size in bit	Offset in bit
STRING(10)	80	0

hex

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Serial No / hex

Datatype	Size in bit	Offset in bit
	80	0

Firmware RevNo

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Firmware RevNo

Datatype	Size in bit	Offset in bit
	160	416

string

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Firmware RevNo / string

Datatype	Size in bit	Offset in bit
STRING(20)	160	0

hex

P-0-0151-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Firmware RevNo / hex

Datatype	Size in bit	Offset in bit
	160	0

Firmware Date

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Firmware Date

Datatype	Size in bit	Offset in bit
Enum	64	576

string

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Firmware Date / string

Datatype	Size in bit	Offset in bit
STRING(8)	64	0

hex

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Firmware Date / hex

Datatype	Size in bit	Offset in bit
Enum	64	0

Eeprom Size

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Eeprom Size

Datatype	Size in bit	Offset in bit
UINT	16	640

Table 86: Properties

Name	Value
UnitName	byte

Minimum encoder temperature

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Minimum encoder temperature

Datatype	Size in bit	Offset in bit
INT	16	656

Table 87: Properties

Name	Value
DecimalPlaces	1
UnitName	°C

Maximum encoder temperature

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Maximum encoder temperature

Datatype	Size in bit	Offset in bit
INT	16	672

Table 88: Properties

Name	Value
DecimalPlaces	1
UnitName	°C

Maximum encoder speed

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Maximum encoder speed

Datatype	Size in bit	Offset in bit
UINT	16	688

Table 89: Properties

Name	Value
UnitName	rpm

Position offset

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Position offset

Datatype	Size in bit	Offset in bit
ULINT	64	704

Properties

Name	Value
UnitName	inc
DisplayDatatype	hexadecimal

Max application acceleration

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Max application acceleration

Datatype	Size in bit	Offset in bit
UDINT	32	768

Table 90: Properties

Name	Value
UnitName	rad/s²
DecimalPlaces	2

Max accepted position deviation (mechanical)

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Max accepted position deviation (mechanical)

Datatype	Size in bit	Offset in bit
UINT	16	800

Table 91: Properties

Name	Value
UnitName	deg
DecimalPlaces	3

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	64	816

Table 92: Properties

Name	Value
UIVisible	False

Sync Mode

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Sync Mode

Datatype	Size in bit	Offset in bit
USINT	8	880

Max accepted sync jitter

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Max accepted sync jitter

Datatype	Size in bit	Offset in bit
USINT	8	888

Table 93: Properties

Name	Value
DisplayDatatype	hexadecimal

Encoder Status error masks

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks

Datatype	Size in bit	Offset in bit
Enum	64	896

EncST 0 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 0 error mask

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 94: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 1 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 1 error mask

Datatype	Size in bit	Offset in bit
USINT	8	8

Table 95: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 2 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 2 error mask

Datatype	Size in bit	Offset in bit
USINT	8	16

Table 96: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 3 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 3 error mask

Datatype	Size in bit	Offset in bit
USINT	8	24

Table 97: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 4 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 4 error mask

Datatype	Size in bit	Offset in bit
USINT	8	32

Table 98: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 5 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 5 error mask

Datatype	Size in bit	Offset in bit
USINT	8	40

Table 99: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 6 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 6 error mask

Datatype	Size in bit	Offset in bit
USINT	8	48

Table 100: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 7 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks / EncST 7 error mask

Datatype	Size in bit	Offset in bit
USINT	8	56

Properties

Name	Value
DisplayDatatype	hexadecimal

Encoder Status error masks (detailed)

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed)

Datatype	Size in bit	Offset in bit
Enum	64	896

EncST 0 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask

Datatype	Size in bit	Offset in bit
Enum	8	0

Protocol Reset Indication

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Protocol Reset Indication

Datatype	Size in bit	Offset in bit
UINT1	1	0

Acceleration Overflow

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Acceleration Overflow

Datatype	Size in bit	Offset in bit
UINT1	1	1

Test In Progress

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Test In Progress

Datatype	Size in bit	Offset in bit
UINT1	1	2

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	1	3

Pos Error: Tracking Filter Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error: Tracking Filter Error

Datatype	Size in bit	Offset in bit
UINT1	1	4

Pos Error: Vector Length Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error: Vector Length Error

Datatype	Size in bit	Offset in bit
UINT1	1	5

Pos Error Counter Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error Counter Error

Datatype	Size in bit	Offset in bit
UINT1	1	6

Pos Error Sync Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 0 error mask / Pos Error Sync Error

Datatype	Size in bit	Offset in bit
UINT1	1	7

EncST 1 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask

Datatype	Size in bit	Offset in bit
Enum	8	8

Single Turn Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Single Turn Error

Datatype	Size in bit	Offset in bit
UINT1	1	0

Multi Turn Error 1

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Multi Turn Error 1

Datatype	Size in bit	Offset in bit
UINT1	1	1

Multi Turn Error 2

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Multi Turn Error 2

Datatype	Size in bit	Offset in bit
UINT1	1	2

Multi Turn Error 3

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / Multi Turn Error 3

Datatype	Size in bit	Offset in bit
UINT1	1	3

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 1 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	4	4

EncST 2 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask

Datatype	Size in bit	Offset in bit
Enum	8	16

Power On Selftest

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Power On Selftest

Datatype	Size in bit	Offset in bit
UINT1	1	0

Safety Parameter Warning

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Safety Parameter Warning

Datatype	Size in bit	Offset in bit
UINT1	1	1

Safety Parameter Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Safety Parameter Error

Datatype	Size in bit	Offset in bit
UINT1	1	2

Standard Parameter Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Standard Parameter Error

Datatype	Size in bit	Offset in bit
UINT1	1	3

Internal Communication Error 1

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Internal Communication Error 1

Datatype	Size in bit	Offset in bit
UINT1	1	4

Internal Communication Error 2

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Internal Communication Error 2

Datatype	Size in bit	Offset in bit
UINT1	1	5

Internal System Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / Internal System Error

Datatype	Size in bit	Offset in bit
UINT1	1	6

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 2 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	1	7

EncST 3 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask

Datatype	Size in bit	Offset in bit
Enum	8	24

Critical Temperature

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Temperature

Datatype	Size in bit	Offset in bit
UINT1	1	0

Critical LED current

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical LED current

Datatype	Size in bit	Offset in bit
UINT1	1	1

Critical Supply Voltage

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Supply Voltage

Datatype	Size in bit	Offset in bit
UINT1	1	2

Critical Speed

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Speed

Datatype	Size in bit	Offset in bit
UINT1	1	3

Critical Acceleration

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Critical Acceleration

Datatype	Size in bit	Offset in bit
UINT1	1	4

Counter Overflow

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Counter Overflow

Datatype	Size in bit	Offset in bit
UINT1	1	5

Internal Monitoring Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / Internal Monitoring Error

Datatype	Size in bit	Offset in bit
UINT1	1	6

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 3 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	1	7

EncST 4 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask

Datatype	Size in bit	Offset in bit
Enum	8	32

Invalid Resource Access Argument

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / Invalid Resource Access Argument

Datatype	Size in bit	Offset in bit
UINT1	1	0

Resource Access Denied

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / Resource Access Denied

Datatype	Size in bit	Offset in bit
UINT1	1	1

Internal Resource Access Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / Internal Resource Access Error

Datatype	Size in bit	Offset in bit
UINT1	1	2

File Access Error

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / File Access Error

Datatype	Size in bit	Offset in bit
UINT1	1	3

rsvd

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 4 error mask / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	4	4

EncST 5 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 5 error mask

Datatype	Size in bit	Offset in bit
Enum	8	40

EncST5

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 5 error mask / EncST5

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 101: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 6 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 6 error mask

Datatype	Size in bit	Offset in bit
Enum	8	48

EncST6

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 6 error mask / EncST6

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 102: Properties

Name	Value
DisplayDatatype	hexadecimal

EncST 7 error mask

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 7 error mask

Datatype	Size in bit	Offset in bit
Enum	8	56

EncST7

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / Encoder Status error masks (detailed) / EncST 7 error mask / EncST7

Datatype	Size in bit	Offset in bit
USINT	8	0

Table 103: Properties

Name	Value
DisplayDatatype	hexadecimal

rsvd [Error limits (Rev 0201 compatibility)]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)]

Datatype	Size in bit	Offset in bit
	96	896

Table 104: Properties

Name	Value
UIVisible	False

rsvd [VPOS error limit]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VPOS error limit]

Datatype	Size in bit	Offset in bit
UINT	16	0

rsvd [VEL error limit]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VEL error limit]

Datatype	Size in bit	Offset in bit
UINT	16	16

rsvd [VRT error limit]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [VRT error limit]

Datatype	Size in bit	Offset in bit
UINT	16	32

rsvd [POS error limit]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [POS error limit]

Datatype	Size in bit	Offset in bit
UINT	16	48

rsvd [LINK error limit]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [LINK error limit]

Datatype	Size in bit	Offset in bit
UINT	16	64

rsvd [ACC error limit]

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / Hiperface DSL / rsvd [Error limits (Rev 0201 compatibility)] / rsvd [ACC error limit]

Datatype	Size in bit	Offset in bit
UINT	16	80

AX572x BiSS

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / AX572x BiSS

Datatype	Size in bit	Offset in bit
	432	0

Config slave

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / AX572x BiSS / Config slave

Datatype	Size in bit	Offset in bit
	256	0

Config master

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / AX572x BiSS / Config master

Datatype	Size in bit	Offset in bit
Enum	48	304

Config channel

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / AX572x BiSS / Config channel

Datatype	Size in bit	Offset in bit
Enum	32	336

Status

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / AX572x BiSS / Status

Datatype	Size in bit	Offset in bit
Enum	32	368

Instruction

P-0-0181-Scanned feedback 2 type / Data / Parameter channel / Data / AX572x BiSS / Instruction

Datatype	Size in bit	Offset in bit
Enum	32	400

Manufacturer limits settings

P-0-0181-Scanned feedback 2 type / Data / Manufacturer limits settings

Datatype	Size in bit	Offset in bit
	96	1792

Maximum continuous operation speed

P-0-0181-Scanned feedback 2 type / Data / Manufacturer limits settings / Maximum continuous operation speed

Datatype	Size in bit	Offset in bit
UINT	16	0

Table 105: Properties

Name	Value
UnitName	rps or mm/s

Maximum continuous mechanical speed

P-0-0181-Scanned feedback 2 type / Data / Manufacturer limits settings / Maximum continuous mechanical speed

Datatype	Size in bit	Offset in bit
UINT	16	16

Table 106: Properties

Name	Value
UnitName	rps or mm/s

Maximum temperature

P-0-0181-Scanned feedback 2 type / Data / Manufacturer limits settings / Maximum temperature

Datatype	Size in bit	Offset in bit
UINT	16	32

Table 107: Properties

Name	Value
UnitName	°C

rsvd

P-0-0181-Scanned feedback 2 type / Data / Manufacturer limits settings / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	48	48

rsvd

P-0-0181-Scanned feedback 2 type / Data / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	128	1888

Properties

Name	Value
UIVisible	False

P-0-0182 Feedback 2 gear numerator

If a gear is placed between motor and load / feedback 2 the ratio is described by numerator and denominator (P-0-0183). Usually the numerator is larger than the denominator (load is slower).

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. Value	1
Default	1
Max. Value	4095; from Rev. 210: 65535
Unit	%
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0150 [▶ 338] and P-0-0180 [▶ 428].

P-0-0183 Feedback 2 gear denominator

If a gear is placed between motor and load / feedback 2 the ratio is described by numerator (P-0-0182) and denominator. Usually the numerator is larger than the denominator (load is slower).

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. Value	1
Default	1
Max. Value	4095; from Rev. 210: 65535
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

P-0-0150 [▶ 338] and P-0-0182 [▶ 490]

P-0-0184 Feedback 2 reference signal

Select the reference source of the feedback 2 system and adjust the compare voltage level. The compare voltage can be set in a range of -570mV up to 570mV.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0130 [▶ 114], S-0-0131 [▶ 115], S-0-0169 [▶ 130], S-0-0170 [▶ 131], S-0-0179 [▶ 132], S-0-0405 [▶ 186], S-0-0409 [▶ 187], S-0-0410 [▶ 189], P-0-0154 [▶ 403], P-0-0250 [▶ 537], P-0-0251 [▶ 538], P-0-0252 [▶ 542], P-0-0253 [▶ 544], P-0-0254 [▶ 545], P-0-0255 [▶ 546]

Actual length

P-0-0184-Feedback 2 / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0184-Feedback 2 / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0184-Feedback 2 / Data

Datatype	Size in bit	Offset in bit	Properties
Enum	64	32	---

Reference source

P-0-0184-Feedback 2 / Reference source

Datatype	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	No source
1	Zero index
2	Sinus
3	Cosinus
4	UVW

Reference index

P-0-0184-Feedback 2 / Reference index

Datatype	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	rsvd

Threshold voltage

P-0-0184-Feedback 2 / Threshold voltage

Datatype	Size in bit	Offset in bit	Properties
INT	16	32	---

Unit: mV

Reserved

P-0-0184-Feedback 2 / Reserved

Datatype	Size in bit	Offset in bit	Properties
UINT	16	48	--

P-0-0187 Feedback 2 identification

This string with up to 64 byte is stored in the nonvolatile memory of feedback 2. The string is stored in the feedback memory if the procedure command P-0-0188 "Save feedback 2 identification (pc)" is executed and read from the feedback during the power up sequence of the feedback.

Attributes

Name	Value
Datatype	text
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

For further information please look into the involved IDN:

P-0-0188 [▶ 495]

Actual length

P-0-0187-Feedback 2 identification / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0187-Feedback 2 identification / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

P-0-0188 Save feedback 2 identification (pc)

Save the feedback identification to encoder nonvolatile memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0157 [▶ 405]

P-0-0189 Raw position feedback value 2

The raw position feedback value 2 displays the actual position of the additional feedback without any offset and without modulo calculation.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	inc
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0079 [▶ 72]

P-0-0192 Feedback 2: Save digital name plate (pc)

Feedback 2: The digital name plate is saved in the feedback memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Passwort-Level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0098 [▶ 303]

P-0-0193 Scan Feedback 2 (pc)

This procedure command detects the connected feedback 2. The results are displayed in P-0-0181 "Scanned feedback 2 type".

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOP und Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

For further information please look into the involved IDN:

P-0-0180 [▶ 428]

P-0-0198 Direct feedback access parameter

Internal Parameter!

This IDN isn´t intended for use by end users!

Parameter structure for the procedure command P-0-0199 "Direct feedback access".

Attributes

Name	Value
Datatype	udec
Data length in bit	224
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0199 Direct feedback access (pc)

Internernal Parameter!

This IDN isn´t intended for use by end users!

Procedure command to access some special feedback system features. For internal use only!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0200 Actual mains voltage peak value

This parameter delivers the measured mains voltage (peak value) with 100 ms averaging time. The rms-value can be calculated by dividing the value by sqrt(2).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0
Max. Value	-
Unit	V
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-x-0201 Nominal mains voltage

Please take notice of the input voltage range specified in the user manual.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	18.0
Default	400.0
Max. Value	480.0
Unit	V
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0201 - P-7-0201.

P-x-0202 Mains voltage positive tolerance range

Please take notice of the input voltage range specified in the user manual. P-0-0201 together with the positive tolerance range should be greater than then maximum averaged input voltage.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	10.0
Max. Value	50.0
Unit	%
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0202 - P-7-0202.

P-x-0203 Mains voltage negative tolerance range

Please take notice of the input voltage range specified in the user manual. P-0-0201 together with the negative tolerance range should be lower than then minimum averaged input voltage.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	10.0
Max. Value	50.0
Unit	%
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0203 - P-7-0203.

P-x-0204 Power management control word

This parameter is used to enable / disable some features of the power management.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	0
Default	9
Max. Value	127
Unit	-
EtherCATState	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0204 - P-7-0204.

Parameter structure

Bit	Description
0	**Internal brake resistor** 0 = disabled 1 = enabled
1	**DC link interface check** 0 = DC link interface check active 1 = DC link interface check disabled
2	**Umains monitoring** 0 = Enable Umain monitoring 1 = Disable Umain monitoring
3	**Umains phase error detection** 0 = disabled 1 = enabled
4	**Long filter time for Umains phase error detection t = 5 s** 0 = disabled 1 = enabled
5	**Umains voltage down to 18V** 0 = disabled 1 = enabled
6	**Enable external ADC filter** 0 = disabled 1 = enabled
7	**DC link voltage monitoring (from Rev. 210)** 0 = Enable dc link voltage monitoring 1 = Disable dc link voltage monitoring
8	**Umains failure monitoring – device protection (from Rev. 210)** 0 = Enable Umains failure monitoring 1 = Disable Umains failure monitoring
9	**Power supply type (from Rev. 214)**
10	**reserved**
11	**Power supply type monitoring (from Rev. 214)**
12	**Periphery voltage monitoring (from Rev. 214)**
13-15	**reserved (from Rev. 214)**

P-x-0205 Power management status word

This parameter displayes the actual internal state of power management and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	-
Unit	-
EtherCATState	-
Cyclic transfer	AT
Device parameter	Yes
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0205 - P-7-0205.

Parameter structure

Bit	Description
0	**Status Umain ok** 0 = Umain is not ok 1 = Umain is ok
1	**Umain Overvoltage** 0 = No Umain overvoltage 1 = Umain overvoltage
2	**Umain phase error** 0 = No phase error 1 = Umain phase error
3	**Status Dc Link ok** 0 = DClink is not ok 1 = DClink is ok
4	**Ext. Umain relay** 0 = Ready to switch off 1 = Ready to switch on
5	**Status fan** 0 = Fan is not active 1 = Fan is active
6	**Status circuit** 0 = Charging resistor is active 1 = Charging resistor is bypassed
7	**Status internal chopper** 0 = Internal chopper is not active 1 = Internal chopper is active
8	**Status external chopper** 0 = External chopper is not active 1 = External chopper is active
9	**Status additional fan** 0= Additional fan is not active 1= Additional fan is active
10	**Extended power management** (see P-0-0010, Bit 5) 0= disabled (from Rev. 210) 1= enabled (from Rev. 210)
11	**Extended Umain check** 0= disabled (from Rev. 210) 1= enabled (from Rev. 210)
12	**Umain loss (from Rev. 210)** 0= Umain is not loss 1= Umain is loss
13--15	**Reserved (from Rev. 210)**

P-0-0206 Power management switching thresholds

This read only parameter displays the switching thresholds of the power management (e.g. the main relay on/off thresholds, the charge resistor bypass threshold, ...).

Attributes

Name	Value
Datatype	udec
Data length in bit	512
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Actual length

P-0-0206 Power management switching thresholds / Actual length

Format	Size in bit	Offset	Properties
UINT	16	0	---

Max length

P-0-0206 Power management switching thresholds / Max length

Format	Size in bit	Offset	Properties
UINT	16	16	---

Data

P-0-0206 Power management switching thresholds / Data

Format	Size in bit	Offset	Properties
	480	32	---

Umain, max. critical hardware voltage

P-0-0206 Power management switching thresholds / Umain, max. critical hardware voltage

Format	Size in bit	Offset	Properties
UINT	16	0	---

Umain, min. critical hardware voltage

P-0-0206 Power management switching thresholds / Umain, min. critical hardware voltage

Format	Size in bit	Offset	Properties
UINT	16	16	---

Umain, overvoltage warning threshold

P-0-0206 Power management switching thresholds / Umain, overvoltage warning threshold

Format	Size in bit	Offset	Properties
UINT	16	32	---

Also see about this

- S-0-0011 Class 1 diagnostic (C1D) [▶ 26]

Umain, undervoltage warning threshold

P-0-0206 Power management switching thresholds / Umain, undervoltage warning threshold

Format	Size in bit	Offset	Properties
UINT	16	48	---

Also see about this

- S-0-0012 Class 2 diagnostic (C2D) [▶ 29]

Umain, peak overvoltage error threshold

P-0-0206 Power management switching thresholds / Umain, peak overvoltage error threshold

Format	Size in bit	Offset	Properties
UINT	16	64	---

Umain, peak undervoltage threshold

P-0-0206 Power management switching thresholds / Umain, peak undervoltage threshold

Format	Size in bit	Offset	Properties
UINT	16	80	---

Umain, peak lost phase threshold

P-0-0206 Power management switching thresholds / Umain, peak lost phase threshold

Format	Size in bit	Offset	Properties
UINT	16	96	---

Internal brake chopper on threshold

P-0-0206 Power management switching thresholds / Internal brake chopper on threshold

Format	Size in bit	Offset	Properties
UINT	16	112	---

Internal brake chopper off threshold

P-0-0206 Power management switching thresholds / Internal brake chopper off threshold

Format	Size in bit	Offset	Properties
UINT	16	128	---

Base internal brake chopper on threshold

P-0-0206 Power management switching thresholds / Base internal chopper on threshold

Format	Size in bit	Offset	Properties
UINT	16	144	---

External brake chopper on threshold

P-0-0206 Power management switching thresholds / External brake chopper on threshold

Format	Size in bit	Offset	Properties
UINT	16	160	---

External brake chopper off threshold

P-0-0206 Power management switching thresholds / External brake chopper off threshold

Format	Size in bit	Offset	Properties
UINT	16	176	---

Base external brake chopper on threshold

P-0-0206 Power management switching thresholds / Base external brake chopper on threshold

Format	Size in bit	Offset	Properties
UINT	16	192	---

External DcLink connection off threshold

P-0-0206 Power management switching thresholds / External DcLink connection off threshold

Format	Size in bit	Offset	Properties
UINT	16	208	---

DcLink overvoltage error threshold

P-0-0206 Power management switching thresholds / DCLink overvoltage error threshold

Format	Size in bit	Offset	Properties
UINT	16	224	---

DcLink undervoltage warning off threshold

P-0-0206 Power management switching thresholds / DCLink undervoltage warning off threshold

Format	Size in bit	Offset	Properties
UINT	16	240	---

DcLink undervoltage warning threshold

P-0-0206 Power management switching thresholds / DCLink undervoltage warning threshold

Format	Size in bit	Offset	Properties
UINT	16	256	---

Also see about this

S-0-0012 Class 2 diagnostic (C2D) [▶ 29]

DcLink undervoltage error threshold

P-0-0206 Power management switching thresholds / DCLink undervoltage error threshold

Format	Size in bit	Offset	Properties
UINT	16	272	---

DcLink charge resistor bypass-on threshold

P-0-0206 Power management switching thresholds / DCLink charge resistor bypass-on threshold

Format	Size in bit	Offset	Properties
UINT	16	288	---

DcLink charge resistor bypass-off threshold

P-0-0206 Power management switching thresholds / DCLink charge resistor bypass-off threshold

Format	Size in bit	Offset	Properties
UINT	16	304	---

External Umain relay, off threshold

P-0-0206 Power management switching thresholds / External Umain relay, off threshold

Format	Size in bit	Offset	Properties
UINT	16	320	---

External Umain relay, on threshold

P-0-0206 Power management switching thresholds / External Umain relay, on threshold

Format	Size in bit	Offset	Properties
UINT	16	336	---

AX5160-AX5193: Umain peak phase monitoring threshold

P-0-0206 Power management switching thresholds / AX5160-AX5193: Umain peak phase monitoring threshold

Datatype	Size in bit	Offset in bit	Properties
UINT	16	352	---

Umain ARV overvoltage error threshold (from Rev. 210)

P-0-0206 Power management switching thresholds / Umain ARV overvoltage error threshold

Datatype	Size in bit	Offset in bit	Properties
UINT	16	368	---

ARV = Averaged rectified value

Umain ARV undervoltage error threshold (Rev. 210)

P-0-0206 Power management switching thresholds / Umain ARV undervoltage error threshold

Datatype	Size in bit	Offset in bit	Properties
UINT	16	384	---

ARV = Averaged rectified value

Umain ARV loss threshold (from Rev. 210)

P-0-0206 Power management switching thresholds / Umain ARV loss threshold

Datatype	Size in bit	Offset in bit	Properties
UINT	16	400	---

ARV = Averaged rectified value

reserved

P-0-0206 Power management switching thresholds / reserved

Datatype	Size in bit	Offset in bit	Properties
Enum	112; from Rev. 210: 64	368; from Rev. 210: 416	---

P-0-0207 Internal braking resistor parameter

This parameter displays the characteristic values of the internal braking resistor.

Attributes

Name	Value
Datatype	udec
Data length in bit	384
Decimal point	0
Min. Value	-
Default	from Rev. 210: 50
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5160 – AX5193

The devices AX5160- AX5193 have no internal braking resistor!

Actual length

P-0-0207 Internal braking resistor parameter / Actual length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0207 Internal braking resistor parameter / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0207 Internal braking resistor parameter / Data

Datatype	Size in bit	Offset in bit	Properties
	352	32	---

Resistance

P-0-0207 Internal braking resistor parameter / Resistance

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Continuous Power

P-0-0207 Internal braking resistor parameter / Continuous Power

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Period time for duty cycle

P-0-0207 Internal braking resistor parameter / Period time for duty cycle

Format	Size in bit	Offset in bit	Properties
UINT	16	32	---

Brake resistor protection

P-0-0207 Internal braking resistor parameter / Brake resistor protection

Format	Size in bit	Offset in bit	Properties
Enum	16	48	---

Value	Explication
0	No brake resistor protection
1	Temperature switch

Maximum peak energy at 40% duty cycle

P-0-0207 Internal braking resistor parameter / Maximum peak energy at 40% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	64	---

Maximum peak energy by 20% duty cycle

P-0-0207 Internal braking resistor parameter / Maximum peak energy at 20% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	96	---

Maximum peak energy by 10% duty cycle

P-0-0207 Internal braking resistor parameter / Maximum peak energy at 10% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	16	128	---

Maximum peak energy by 1% duty cycle

P-0-0207 Internal braking resistor parameter / Maximum peak energy at 1% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	160	---

Maximum peak energy at 0,1% duty cycle

P-0-0207 Internal braking resistor parameter / Maximum peak energy at 0,1% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	192	---

reserved

P-0-0207 Internal braking resistor parameter / reserved

Format	Size in bit	Offset in bit	Properties
	128	224	---

P-0-0208 External braking resistor parameter

This parameter is used to specify the characteristic values of the external braking resistor. The data sheet values of the external braking resistor must be entered here.

Attributes

Name	Value
Datatype	udec
Data length in bit	384
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOP
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0207 External braking resistor parameter / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0207 External braking resistor parameter / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0207 External braking resistor parameter / Data

Format	Size in bit	Offset in bit	Properties
	352	32	---

Resistance

P-0-0207 External braking resistor parameter / Resistance

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Continuous Power

P-0-0207 External braking resistor parameter / Continuous Power

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Period time for duty cycle

P-0-0207 External braking resistor parameter / Period time for duty cycle

Format	Size in bit	Offset in bit	Properties
UINT	16	32	---

Brake resistor protection

P-0-0207 External braking resistor parameter / Brake resistor protection

Format	Size in bit	Offset in bit	Properties
Enum	16	48	---

Value	Explication
0	No brake resistor protection
1	Temperature switch

Maximum peak energy at 40% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 40% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	64	---

Maximum peak energy at 20% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 20% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	96	---

Maximum peak energy at 10% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 10% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	128	---

Maximum peak energy at 1% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 1% duty cycle

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

Maximum peak energy at 0,1% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 0,1% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	192	---

reserved

P-0-0207 Internal braking resistor parameter / reserved

Format	Size in bit	Offset in bit	Properties
	128	224	---

P-0-0209 Internal braking resistor parameter: actual averaged power

This parameter provides an averaged value of the actual power dissipation of the internal braking resistor. The averaging time period is specified in P-0-0207.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	W
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

AX5160 – AX5193

The devices AX5160 – AX5193 have no internal braking resistor!

P-0-0210 External braking resistor: actual averaged power

This parameter provides an averaged value of the actual power dissipation of the optional external braking resistor. The averaging time period is specified in P-0-0208.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	W
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0211 Warning threshold internal braking resistor

If the averaged power of the internal braking resistor (P-0-0209) exceeds the configured threshold a warning will be generated.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	150
Max. Value	300
Unit	W
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

AX5160 – AX5193

The devices AX5160- AX5193 have no internal braking resistor!

P-0-0212 Warning threshold external braking resistor

If the averaged power of the optional external braking resistor (P-0-0210) exceeds the configured threshold a warning will be generated.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	500
Max. Value	10 000
Unit	W
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

P-0-0213 External DC link current

The drive displays the actual external DC link current in this parameter. The value is positive when the drive is supplying energy to the common DC-bus / brake resistor. This value is not available in drives of the type AX5160, AX5172, AX5190, AX5191, AX5192 and AX5193.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	A
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0214 DC link connection mode

This parameter defines the used "DC Link connection". The used value must be choosen depending on the physical wiring of the DC link circuit.

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	21
Unit	A
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Parameter structure:

Value	Explication
0	External DC Link connection disabled
1	AX5x01-AX5x25 [X02]: External brake resistor enabled
3	AX5x01-AX5x25 [X02]: Static external DC Link connection
10	AX5140 – AX5193 [X07] (standalone): External brake resistor enabled
11	AX5140 – AX5193 [X07] (system): External brake resistor enabled

P-0-0215 Actual periphery voltage

The actual measured periphery voltage (connected to X03) is displayed here.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	V
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-x-0216 Max DC Link voltage

This IDN specifies the actions according to the actual DC-bus voltage. The overvoltage error threshold voltage and the brake resistor threshold voltage are depending on this IDN.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	100.0
Default	890.0
Max. Value	890.0
Unit	V
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0216 - P-7-0216.

P-0-0217 Actual mains voltage

This parameter delivers the measured (rectified) mains voltage without averaging.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	V
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0218 Internal braking resistor peak utilization

Internal parameter!

This IDN isn´t intended for use by end users!

This parameter provides the maximal seen value of the averaged actual power of the internal braking resistor (P-0-0209) since booting the drive like a drag indicator.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0219 External braking resistor peak utilization

This parameter provides the maximal seen value of the averaged actual continuous power of the optional external braking resistor (P-0-0210) since booting the drive like a drag indicator.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0220 Internal braking resistor diagnostics

This parameter provides the utilization of the internal braking resistor.

Attributes

Name	Value
Datatype	udec
Data length in bit	224
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	AT
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0207 External braking resistor parameter / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0207 External braking resistor parameter / Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0207 External braking resistor parameter / Data

Format	Size in bit	Offset in bit	Properties
	192	32	---

Maximum peak energy at 100% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 40% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Maximum peak energy at 40% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 40% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Maximum peak energy at 20% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 20% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	64	---

Maximum peak energy at 10% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 10% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	96	---

Maximum peak energy at 1% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 1% duty cycle

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	128	---

Maximum peak energy at 0,1% duty cycle

P-0-0207 External braking resistor parameter / Maximum peak energy at 0,1% duty cycle

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

P-0-0221 External braking resistor diagnostics

This parameter provides the utilization of the external braking resistor.

Attributes

Name	Value
Datatype	udec
Data length in bit	224
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0221 External braking resistor parameter / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0221 External braking resistor parameter / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0221 External braking resistor parameter / Data

Format	Size in bit	Offset in bit	Properties
	192	32	---

Maximum peak energy at 100% duty cycle

P-0-0221 External braking resistor parameter / Maximum peak energy at 40% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	0	---

Maximum peak energy at 40% duty cycle

P-0-0221 External braking resistor parameter / Maximum peak energy at 40% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	32	---

Maximum peak energy at 20% duty cycle

P-0-0221 External braking resistor parameter / Maximum peak energy at 20% duty cycle

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	64	---

Maximum peak energy at 10% duty cycle

P-0-0221 External braking resistor parameter / Maximum peak energy at 10% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	96	---

Maximum peak energy at 1% duty cycle

P-0-0221 External braking resistor parameter / Maximum peak energy at 1% duty cycle

Format	Size in bit	Offset in bit	Properties
UDINT	32	128	---

Maximum peak energy at 0,1% duty cycle

P-0-0221 External braking resistor parameter / Maximum peak energy at 0,1% duty cycle

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	160	---

P-0-0222 Power management diagnostics

This parameter displays some internal states of the drives power management which may be useful for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

DcLink state machine

P-0-0222 Power management diagnostics / DcLink state machine

Format	Size in bit	Offset in bit	Properties
Enum	4	0	---

Value	Description
0	WaitForCharging
1	BypassChargeResistor
2	CheckExtChopperConnection
3	IntDcLinkOk
4	RtO_Run
5	RtO_ShortPowerLoss
6	RtO_PowerLoss_ChargeResistorActive
7	RtO_ChargeInOperation_ChargeResistorActive
8	Err_WaitForIgbtDisable
9	Err_TorqueOff

Umain state machine

P-0-0222 Power Management diagnostics / Umain state machine

Format	Size in bit	Offset in bit	Properties
Enum	4	4	---

Value	Description
0	UmainOff
1	UmainOk
2	UmainLoss
3	UmainToLow
4	UmainToHigh

Umain frequency

P-0-0221 External braking resistor parameter / Umain frequency

Datatype	Size in bit	Offset in bit	Properties
UINT12	12	8	---

Power supply type

P-0-0222 Power Management diagnostics / Power supply type

Datatype	Size in bit	Offset in bit	Properties
Enum	2	20	---

Value	Description
0	AC 3 phases
1	AC 1 phase
2	DC Supply

Reserved

P-0-0221 External braking resistor parameter / Reserved

Format	Size in bit	Offset in bit	Properties
UINT10	10	22	---

P-0-0250 Probe 1 value source

This parameter defines the source value of probe 1. This source value is sampled in case of a probe 1 trigger event and the sampled value is stored in S-0-0130 or S-0-0131 depending on the occurred signal edge.

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Source

P-0-0250 Probe 1 value source / Source

Format	Size in bit	Offset in bit	Properties
Enum	15	0	---

Value	Explication
#00	Position feedback value 1 (S-0-0051)
#01	Position feedback value 2 (S-0-0053)

Also see about this

- S-0-0051 Position feedback value 1 (motor feedback) [▶ 67]
- S-0-0053 Position feedback value 2 (external feedback) [▶ 68]

rsvd

P-0-0250 Probe 1 value source / rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	1	15	---

P-0-0251 Probe 1 logic configuration

This parameter defines which signal (e.g. a digital input) or which signal combination is used to trigger the probe 1.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0251 Probe 1 logic configuration / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0251 Probe 1 logic configuration / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0251 Probe 1 logic configuration / Data

Format	Size in bit	Offset in bit	Properties
Enum	64	32	---

Mux 1

P-0-0251 Probe 1 logic configuration / Mux 1

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Signal selection

P-0-0251 Probe 1 logic configuration / Mux 1 / Signal selection

Format	Size in bit	Offset in bit	Properties
Enum	15	0	---

Value	Explication
0	Digital input 0
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7

Output negation

P-0-0251 Probe 1 logic configuration / Mux 1 / Output negation

Format	Size in bit	Offset in bit	Properties
Enum	1	15	---

Value	Explication
0	Off
1	On

Mux 2

P-0-0251 Probe 1 logic configuration / Mux 2

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Signal selection

P-0-0251 Probe 1 logic configuration / Mux 2 / Signal selection

Format	Size in bit	Offset in bit	Properties
Enum	15	0	---

Value	Explication
0	Digital input 0
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7
8	Referencesignal Feedback (X11/X21)
9	Referencesignal Feedback (X41/X42)
10	ConfigurableStatusWord (P-0-0611)

Output negation

P-0-0251 Probe 1 logic configuration / Mux 2 / Output negation

Format	Size in bit	Offset in bit	Properties
Enum	1	15	---

Value	Explication
0	Off
1	On

Logic

P-0-0251 Probe 1 logic configuration / Logic

Format	Size in bit	Offset in bit	Properties
Enum	16	32	---

Logic operation

P-0-0251 Probe 1 logic configuration / Logic / Logic operation

Format	Size in bit	Offset in bit	Properties
Enum	15	0	---

Value	Explication
0	Mux 1
1	Mux 2
2	Mux 1 AND Mux 2
3	Mux 1 AND rising edge Mux2
4	Reserved
5	Mux 1 OR Mux 2

Output negation

P-0-0251 Probe 1 logic configuration / Logic / Output negation

Format	Size in bit	Offset in bit	Properties
Enum	1	15	---

Value	Explication
0	Off
1	on

Latch ctrl

P-0-0251 Probe 1 logic configuration / Latch ctrl

Format	Size in bit	Offset in bit	Properties
Enum	16	48	---

Value	Explication
0	Single

P-0-0252 Probe 1 logic state

The actual state of the configured probe 1 trigger logic is displayed here. The trigger logic is defined in IDN P-0-0251.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Output Mux1

P-0-0252 Probe 1 logic state / Output Mux1

Format	Size in bit	Offset in bit	Properties
BIT	1	0	---

Output Mux2

P-0-0252 Probe 1 logic state / Output Mux2

Datatype	Size in bit	Offset in bit	Properties
BIT	1	2	---

Output logic

P-0-0252 Probe 1 logic state / Output logic

Format	Size in bit	Offset in bit	Properties
BIT	1	5	---

Rising edge Mux1 stored

P-0-0252 Probe 1 logic state / Rising edge Mux1 stored

Format	Size in bit	Offset in bit	Properties
BIT	1	1	---

Rising edge Mux2 stored

P-0-0252 Probe 1 logic state / Rising edge Mux2 stored

Format	Size in bit	Offset in bit	Properties
BIT	1	3	---

Single shoot ready

P-0-0252 Probe 1 logic state / Single shoot ready

Format	Size in bit	Offset in bit	Properties
BIT	1	4	---

Reference signal feedback front

P-0-0252 Probe 1 logic state / Reference signal feedback front

Format	Size in bit	Offset in bit	Properties
BIT	1	6	---

Reference signal feedback option

P-0-0252 Probe 1 logic state / Reference signal feedback option

Format	Size in bit	Offset in bit	Properties
BIT	1	7	---

reserved

P-0-0252 Probe 1 logic state / reserved

Format	Size in bit	Offset in bit	Properties
USINT	8	8	---

P-0-0253 Probe 1 time positive edge

The drive stores the system time of the positive edge of probe 1 in this parameter.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	µs
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0254 Probe 1 time negative edge

The drive stores the system time of the negative edge of probe 1 in this parameter.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	µs
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0255 Probe 1 time difference: reference switch to index

The time difference between the reference switch signal and the index signal.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	3
Min. Value	-
Default	0.000
Max. Value	-
Unit	µs
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0256 Probe 1 data

Some internal probe 1 processing data are displayed here.

Attributes

Name	Value
Datatype	hex
Data length in bit	608
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0256 Probe 1 data / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Maximum length

P-0-0256 Probe 1 data / Maximum length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0256 Probe 1 data / Data

Format	Size in bit	Offset in bit	Properties
	576	32	---

Positive edge

P-0-0256 Probe 1 data / Positive edge

Format	Size in bit	Offset in bit	Properties
	288	0	---

Times

P-0-0256 Probe 1 data / Positive edge / Times

Format	Size in bit	Offset in bit	Properties
Enum	64	0	---

Values

P-0-0256 Probe 1 data / Positive edge / Values

Format	Size in bit	Offset in bit	Properties
Enum	64	64	---

Rsvd

P-0-0256 Probe 1 data / Positive edge / Rsvd

Datatype	Size in bit	Offset in bit	Properties
Enum	64	128	---

Last time index

P-0-0256 Probe 1 data / Positive edge / Last time index

Datatype	Size in bit	Offset in bit	Properties
UINT	16	192	---

Last value index

P-0-0256 Probe 1 data / Positive edge / Last value index

Format	Size in bit	Offset in bit	Properties
UINT	16	208	---

Latched time

P-0-0256 Probe 1 data / Positive edge / Latched time

Datatype	Size in bit	Offset in bit	Properties
UDINT	32	224	---

Latched value

P-0-0256 Probe 1 data / Positive edge / Latched value

Format	Size in bit	Offset in bit	Properties
UDINT	32	256	---

Negative edge

P-0-0256 Probe 1 data / Negative edge

Format	Size in bit	Offset in bit	Properties
	288	288	---

Times

P-0-0256 Probe 1 data / Negative edge / Times

Format	Size in bit	Offset in bit	Properties
Enum	64	0	---

Values

P-0-0256 Probe 1 data / Negative edge / Values

Format	Size in bit	Offset in bit	Properties
Enum	64	64	---

Rsvd

P-0-0256 Probe 1 data / Negative edge / Rsvd

Datatype	Size in bit	Offset in bit	Properties
Enum	64	128	---

Last time index

P-0-0256 Probe 1 data / Negative edge / Last time index

Format	Size in bit	Offset in bit	Properties
UINT	16	192	---

Last value index

P-0-0256 Probe 1 data / Negative edge / Last value index

Format	Size in bit	Offset in bit	Properties
UINT	16	208	---

Latched time

P-0-0256 Probe 1 data / Negative edge / Latched time

Format	Size in bit	Offset in bit	Properties
UDINT	32	224	---

Latched value

P-0-0256 Probe 1 data / Negative edge / Latched value

Format	Size in bit	Offset in bit	Properties
UDINT	32	256	---

P-0-0257 Probe 1 edge filter

A filter time can configured to prevent multiple latch events caused due to a bouncing input signal. The internal resolution of the filter is 853ns.

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	µs
Changeable in EtherCAT state	In PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Enable filter time on 'Mux 1'

P-0-0257 Probe 1 edge filter / Enable filter time on ‚Mux 1‘

Format	Size in bit	Offset in bit	Properties
UINT1	1	0	---

Enable filter time on 'Mux 2'

P-0-0257 Probe 1 edge filter / Enable filter time on ‚Mux 2‘

Format	Size in bit	Offset in bit	Properties
UINT1	1	1	---

rsvd

P-0-0257 Probe 1 edge filter / rsvd

Datatype	Size in bit	Offset in bit	Properties
UINT 14	14	2	---

Filter time

P-0-0257 Probe 1 edge filter / Filter time

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Unit: µs

P-0-0270 Saved modulo data

This IDN contains some modulo processing data read from or written to the internal nonvolatile memory. The data read operation and the update of and the parts 'Modulo init data' and 'Data read from file' is done in the EtherCAT transition 'Init' to 'PreOp'.

Attributes

Name	Value
Datatype	hex
Data length in bit	1728
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0270-Saved modulo data / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0270-Saved modulo data / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data

Format	Size in bit	Offset in bit
	1696	32

Modulo init data

P-0-0270-Saved modulo data / Data / Modulo init data

Format	Size in bit	Offset in bit
	672	0

Feedback 1

P-0-0270-Saved modulo data / Data / Modulo init data / Feedback 1

Format	Size in bit	Offset in bit
STRING(30)	240	0

rsvd1

P-0-0270-Saved modulo data / Data / Modulo init data / rsvd1

Datatype	Size in bit	Offset in bit
UINT	16	240

Properties

Name	Value
UIVisible	False

Serial number feedback 1

P-0-0270-Saved modulo data / Data / Modulo init data / Serial number feedback 1

Datatype	Size in bit	Offset in bit
ULINT	64	256

Feedback 2

P-0-0270-Saved modulo data / Data / Modulo init data / Feedback 2

Format	Size in bit	Offset in bit
STRING(30)	240	320

rsvd2

P-0-0270-Saved modulo data / Data / Modulo init data / rsvd2

Datatype	Size in bit	Offset in bit
UINT	16	560

Properties

Name	Value
UIVisible	False

Serial number feedback 2

P-0-0270-Saved modulo data / Data / Modulo init data / Serial number feedback 2

Datatype	Size in bit	Offset in bit
ULINT	64	576

Modulo value

P-0-0270-Saved modulo data / Data / Modulo init data / Modulo value

Format	Size in bit	Offset in bit
UDINT	32	640

Data read from file

P-0-0270-Saved modulo data / Data / Data read from file

Format	Size in bit	Offset in bit
	512	672

Data[0][0]

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0]

Format	Size in bit	Offset in bit
	128	0

Feedback number

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0] / Data / Modulo position

Datatype	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][0] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Data[0][1]

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1]

Format	Size in bit	Offset in bit
	128	128

Feedback number

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1] / Data / Feedback position

Datatype	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1] / Data / Modulo position

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Data read from file / Data[0][1] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Data[1][0]

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0]

Format	Size in bit	Offset in bit
	128	256

Feedback number

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0] / Data / Modulo position

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][0] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Data[1][1]

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1]

Format	Size in bit	Offset in bit
	128	384

Feedback number

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1] / Data / Modulo position

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Data read from file / Data[1][1] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Current data

P-0-0270-Saved modulo data / Data / Current data

Format	Size in bit	Offset in bit
	512	1184

Data[0][0]

P-0-0270-Saved modulo data / Data / Current data / Data[0][0]

Format	Size in bit	Offset in bit
	128	0

Feedback number

P-0-0270-Saved modulo data / Data / Current data / Data[0][0] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Current data / Data[0][0] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Current data / Data[0][0] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Current data / Data[0][0] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Current data / Data[0][0] / Data / Modulo position

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Current data / Data[0][0] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Data[0][1]

P-0-0270-Saved modulo data / Data / Current data / Data[0][1]

Format	Size in bit	Offset in bit
	128	128

Feedback number

P-0-0270-Saved modulo data / Data / Current data / Data[0][1] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Current data / Data[0][1] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Current data / Data[0][1] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Current data / Data[0][1] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Current data / Data[0][1] / Data / Modulo position

Datatype	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Current data / Data[0][1] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Data[1][0]

P-0-0270-Saved modulo data / Data / Current data / Data[1][0]

Format	Size in bit	Offset in bit
	128	256

Feedback number

P-0-0270-Saved modulo data / Data / Current data / Data[1][0] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Current data / Data[1][0] / Data set

Datatype	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Current data / Data[1][0] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Current data / Data[1][0] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Current data / Data[1][0] / Data / Modulo position

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Current data / Data[1][0] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Data[1][1]

P-0-0270-Saved modulo data / Data / Current data / Data[1][1]

Format	Size in bit	Offset in bit
	128	384

Feedback number

P-0-0270-Saved modulo data / Data / Current data / Data[1][1] / Feedback number

Format	Size in bit	Offset in bit
UINT	16	0

Data set

P-0-0270-Saved modulo data / Data / Current data / Data[1][1] / Data set

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0270-Saved modulo data / Data / Current data / Data[1][1] / Data

Format	Size in bit	Offset in bit
	96	32

Feedback position

P-0-0270-Saved modulo data / Data / Current data / Data[1][1] / Data / Feedback position

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Modulo position

P-0-0270-Saved modulo data / Data / Current data / Data[1][1] / Data / Modulo position

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Crc

P-0-0270-Saved modulo data / Data / Current data / Data[1][1] / Data / Crc

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

P-0-0271 Save position offset (pc)

This procedure command writes the position offset data, located in P-0-0272, to the internal nonvolatile memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

P-0-0272 Save position offset data

This IDN contains the position offset data which is written with the procedure command P-0-0271 to the internal nonvolatile memory.

Attributes

Name	Value
Datatype	dec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0272-Save position offset data / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0272-Save position offset data / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0272-Save position offset data / Data

Datatype	Size in bit	Offset in bit
Enum	64	32

Feedback number

P-0-0272-Save position offset data / Data / Feedback number

Format	Size in bit	Offset in bit
Enum	4	0

Value	Description
0	Feedback 1
1	Feedback 2

Memory selection

P-0-0272-Save position offset data / Data / Memory selection

Format	Size in bit	Offset in bit
Enum	4	4

Value	Description
0	Encoder
1	Drive

rsvd1

P-0-0272-Save position offset data / Data / rsvd1

Format	Size in bit	Offset in bit
USINT	8	8

Table 108: Properties

Name	Value
UIVisible	false

rsvd2

P-0-0272-Save position offset data / Data / rsvd2

Datatype	Size in bit	Offset in bit
UINT	16	16

Table 109: Properties

Name	Value
UIVisible	false

Position offset

P-0-0272-Save position offset data / Data / Position offset

Format	Size in bit	Offset in bit
UDINT	32	32

Table 110: Properties

Name	Value
Display	hex

P-0-0273 Saved position offsets

The displayed position offset data is read from the internal nonvolatile memory.

Attributes

Name	Value
Datatype	dec
Data length in bit	928
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0273-Saved position offsets / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0273-Saved position offsets / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0273-Saved position offsets / Data

Format	Size in bit	Offset in bit
	896	32

Feedback 1

P-0-0273-Saved position offsets / Data / Feedback 1

Format	Size in bit	Offset in bit
	448	0

Encoder memory

P-0-0273-Saved position offsets / Data / Feedback 1 / Encoder memory

Format	Size in bit	Offset in bit
Enum	64	0

Data valid

P-0-0273-Saved position offsets / Data / Feedback 1 / Encoder memory / Data valid

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	No
1	Yes

rsvd

P-0-0273-Saved position offsets / Data / Feedback 1 / Encoder memory / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Table 111: Properties

Name	Value
UIVisible	False

Position offset

P-0-0273-Saved position offsets / Data / Feedback 1 / Encoder memory / Position offset

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Drive memory

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory

Format	Size in bit	Offset in bit
	384	64

Data valid

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory / Data valid

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	No
1	Yes

rsvd

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Table 112: Properties

Name	Value
UIVisible	False

Feedback type

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory / Feedback type

Format	Size in bit	Offset in bit
STRING(30)	240	32

rsvd1

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory / rsvd1

Format	Size in bit	Offset in bit
UINT	16	272

Properties

Name	Value
UIVisible	False

Feedback serial number

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory / Feedback serial number

Format	Size in bit	Offset in bit
ULINT	64	288

Position offset

P-0-0273-Saved position offsets / Data / Feedback 1 / Drive memory / Position offset

Datatype	Size in bit	Offset in bit
UDINT	32	352

Properties

Name	Value
Display	hex

Feedback 2

P-0-0273-Saved position offsets / Data / Feedback 2

Format	Size in bit	Offset in bit
	448	448

Encoder memory

P-0-0273-Saved position offsets / Data / Feedback 2 / Encoder memory

Format	Size in bit	Offset in bit
Enum	64	0

Data valid

P-0-0273-Saved position offsets / Data / Feedback 2 / Encoder memory / Data valid

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	No
1	Yes

rsvd

P-0-0273-Saved position offsets / Data / Feedback 2 / Encoder memory / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Position offset

P-0-0273-Saved position offsets / Data / Feedback 2 / Encoder memory / Position offset

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Drive memory

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory

Format	Size in bit	Offset in bit
	384	64

Data valid

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory / Data valid

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	No
1	Yes

rsvd

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory / rsvd

Format	Size in bit	Offset in bit
Array ofUINT	16	16

Properties

Name	Value
UIVisible	False

Feedback type

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory / Feedback type

Format	Size in bit	Offset in bit
STRING(30)	240	32

rsvd1

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory / rsvd1

Format	Size in bit	Offset in bit
UINT	16	272

Properties

Name	Value
UIVisible	False

Feedback serial number

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory / Feedback serial number

Format	Size in bit	Offset in bit
ULINT	64	288

Position offset

P-0-0273-Saved position offsets / Data / Feedback 2 / Drive memory / Position offset

Format	Size in bit	Offset in bit
UDINT	32	352

Properties

Name	Value
Display	hex

P-0-0274 Position offset

This positions offsets for feedback 1 and 2 are added to the feedback positions if in P-0-0275 [▶ 576] 'Position offset control' is chosen. This IDN can be included in the startuplist of the drive which is part of the system configuration. Therefore the system configuration is used as positon offset data storage.

Attributes

Name	Value
Datatype	dec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0274-Position offset / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0274-Position offset / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0274-Position offset / Data

Format	Size in bit	Offset in bit
	64	32

Position offset feedback 1

P-0-0274-Position offset / Data / Position offset feedback 1

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Display	hex

Position offset feedback 2

P-0-0274-Position offset / Data / Position offset feedback 2

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

P-0-0275 Position offset control

This IDN specifies the used data storage of the position offsets.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Feedback 1

P-0-0275-Position offset control / Feedback 1

Datatype	Size in bit	Offset in bit
Enum	4	0

Value	Description
0	Use no position offset
1	Use encoder memory position offset
2	Use drive memory position offset
4	Use startuplist position offset

Feedback 2

P-0-0275-Position offset control / Feedback 2

Format	Size in bit	Offset in bit
Enum	4	4

Value	Description
0	Use no position offset
1	Use encoder memory position offset
2	Use drive memory position offset
4	Use startuplist position offset

Initialization error behavior (from Rev. 210)

P-0-0275-Position offset control / Initialization error behavior

Datatype	Size in bit	Offset in bit
	1	8

Table 113: Properties

Name	Value
UIVisible	False

rsvd

P-0-0275-Position offset control / rsvd

Datatype	Size in bit	Offset in bit
UINT 8; from Rev. 210: UINT7	8; from Rev. 210: 7	8; from Rev. 210: 9

Table 114: Properties

Name	Value
UIVisible	False

P-0-0276 Modulo calculation control

Control word of the modulo data processing.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Feedback 1

P-0-0276-Modulo calculation control / Feedback 1

Format	Size in bit	Offset in bit
Enum	8	0

Data storage

P-0-0276-Modulo calculation control / Feedback 1 / Data storage

Format	Size in bit	Offset in bit
Enum	1	0

Value	Description
0	Modulo data storage enabled
1	Modulo data storage disabled

rsvd

P-0-0276-Modulo calculation control / Feedback 1 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	7	1

Table 115: Properties

Name	Value
UIVisible	false

Feedback 2

P-0-0276-Modulo calculation control / Feedback 2

Format	Size in bit	Offset in bit
Enum	8	8

Data storage

P-0-0276-Modulo calculation control / Feedback 2 / Data storage

Format	Size in bit	Offset in bit
Enum	1	0

Value	Description
0	Modulo data storage enabled
1	Modulo data storage disabled

rsvd

P-0-0276-Modulo calculation control / Feedback 2 / rsvd

Format	Size in bit	Offset in bit
Array ofUINT	7	1

Table 116: Properties

Name	Value
UIVisible	false

P-0-0277 Schedule modulo init data saving (PreOp->SafeOp)

This control is used in the initial startup of the modulo data processing.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password level	2

Schedule modulo init data saving

P-0-0277-Schedule modulo init data saving (PreOp->SafeOp) / Schedule modulo init data saving

Format	Size in bit	Offset in bit
Enum	1	0

Value	Description
0	No
1	Yes

rsvd

P-0-0277-Schedule modulo init data saving (PreOp->SafeOp) / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	15	1

Table 117: Properties

Name	Value
UIVisible	False

P-0-0278 Ignore P-0-0275 'Position offset control'

This parameter can be used to determine the required position offsets at the initial startup of the drive.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password level	2

Ignore for one PreOp->SafeOp transition

P-0-0278-Ignore P-0-0275 'Position offset control' / Ignore for one PreOp->SafeOp transition

Format	Size in bit	Offset in bit
Enum	1	0

Value	Description
0	No
1	Yes

rsvd

P-0-0278-Ignore P-0-0275 'Position offset control' / rsvd

Format	Size in bit	Offset in bit
Array of UINT	15	1

Properties

Name	Value
UIVisible	False

P-0-0279 Modulo value remainder

This parameter defines the modulo value remainder in case of using the modulo function together with a prime number gear.

Attributes

Name	Value
Datatype	binary
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

S-0-0103 Modulo Value [▶ 87]

P-0-0300 Error number history

This IDN contains the error number history of the drive. The last entry is displayed at top of the list.

Attributes

Name	Value
Datatype	hex
Data length in bit	3232
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0300-Error number history / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0300-Error number history / Max length

Datatype	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0300-Error number history / Data

Format	Size in bit	Offset in bit
	3200	32

P-0-0301 Error times history

The timestamps related to the errors in the error number history. The value of S-0-0435 [▶ 193] 'Operating time drive control' is used as timestamp if an error occurs.

Attributes

Name	Value
Datatype	hex
Data length in bit	3232
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	s
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0301-Error times history / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0301-Error times history / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0301-Error times history / Data

Format	Size in bit	Offset in bit
	3200	32

P-0-0302 Display value line 1

This IDN defines the information shown in line 1 of the display.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	16 (actual ESC status)
Max. Value	45
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Value	Description
0	Actual main loop time in µs
1	Min mainloop time in µs
2	Max mainloop time in µs
6	Actual control interrupt CPU time in µs
7	Min control interrupt CPU time in µs
8	Max control interrupt CPU time in µs
9	System time
10	Operation time high word
11	Operation time low words
12	IGBT temperature in C°
13	Main voltage in V
14	DC-Link voltage in V
15	DC Link current in A
16	Actual ESC state
17	Actual ESC address
20	Actual Position
23	Actual Velocity
25	Actual Current
26	Actual d-axis current
27	Control word
28	AxisState
29	Operation time high word
30	Operation time low word
31	Encoder temperature
40	Setpoint Position
41	Setpoint Velocity
42	Setpoint ext. Torque
43	Setpoint int. Torque
44	Setpoint Current
45	Setpoint d-axis current

P-0-0303 Display value line 2

This IDN defines the information shown in line 2 of the display.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	14 (DC link voltage in V)
Max. Value	45
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Value	Description
0	Actual main loop time in µs
1	Min mainloop time in µs
2	Max mainloop time in µs
6	Actual control interrupt CPU time in µs
7	Min control interrupt CPU time in µs
8	Max control interrupt CPU time in µs
9	System time
10	Operation time high word
11	Operation time low words
12	IGBT temperature in C°
13	Mains voltage in V
14	DC-Link voltage in V
15	DC-Link current in A
16	Actual ESC state
17	Actual ESC address
20	Actual Position
23	Actual Velocity
25	Actual Current
26	Actual d-axis current
27	Control word
28	AxisState
29	Operation time high word
30	Operation time low word
31	Encoder temperature
40	Setpoint Position
41	Setpoint Velocity
42	Setpoint ext. Torque
43	Setpoint int. Torque
44	Setpoint Current
45	Setpoint d-axis current

P-0-0304 Report diagnostics information

If the flag for the error, warning or information level is set a report message is send to the EtherCAT master. The EtherCAT master can display the message in it's local logger.

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	7; from Rev. 210: 15
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Also see about this

- S-0-0011 Class 1 diagnostic (C1D) [▶ 26]
- S-0-0012 Class 2 diagnostic (C2D) [▶ 29]
- S-0-0013 Class 3 diagnostic (C3D) [▶ 31]

Error/C1D: Send report

P-0-0304 Report diagnostics information / Error/C1D: Send report

Datatype	Size in bit	Offset in bit	Properties
Enum	1	2	---

Value	Description
0	from Rev. 210: No
1	from Rev. 210: Yes

Warning/C2D: Send report

P-0-0304 Report diagnostics information / Warning/C2D: Send report

Datatype	Size in bit	Offset in bit	Properties
Enum	1	1	---

Value	Description
0	from Rev. 210: No
1	from Rev. 210: Yes

Information/C3D: Send report

P-0-0304 Report diagnostics information / Warning/C3D: Send report

Datatype	Size in bit	Offset in bit	Properties
Enum	1	2	---

Value	Description
0	from Rev. 210: No
1	from Rev. 210: Yes

SoE Mailbox errors: Send report

P-0-0304 Report diagnostics information / SoE Mailbox errors: Send report

Datatype	Size in bit	Offset in bit	Properties
UINT 13	13	3	---

rsvd

P-0-0304 Report diagnostics information / SoE Mailbox errors: Send report

Datatype	Size in bit	Offset in bit	Properties
UINT 12	12	4	---

P-0-0305 Trace level

Some additional debug output can be enabled here.

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

- S-0-0011 Class 1 diagnostic (C1D) [▶ 26]
- S-0-0012 Class 2 diagnostic (C2D) [▶ 29]

I2C Bus

P-0-0305 Trace level / I2C

Datatype	Size in bit	Offset in bit	Properties
Enum	2	0	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Lcd

P-0-0305 Trace level / Lcd

Datatype	Size in bit	Offset in bit	Properties
Enum	2	2	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Ext ADC

P-0-0305 Trace level / Ext ADC

Datatype	Size in bit	Offset in bit	Properties
Enum	2	4	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Encoder parameter channel

P-0-0305 Trace level / Encoder parameter channel

Datatype	Size in bit	Offset in bit	Properties
Enum	2	6	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

String

P-0-0305 Trace level / String

Datatype	Size in bit	Offset in bit	Properties
Enum	2	8	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Keypad

P-0-0305 Trace level / Keypad

Datatype	Size in bit	Offset in bit	Properties
Enum	2	10	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Procedure command calls

P-0-0305 Trace level / Procedure command calls

Datatype	Size in bit	Offset in bit	Properties
Enum	2	12	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Power management

P-0-0305 Trace level / Power management

Datatype	Size in bit	Offset in bit	Properties
Enum	2	14	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Feedback Dsp

P-0-0305 Trace level / Feedback Dsp

Datatype	Size in bit	Offset in bit	Properties
Enum	2	16	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Device state machine

P-0-0305 Trace level / Device state machine

Datatype	Size in bit	Offset in bit	Properties
Enum	2	18	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Hiperface DSL

P-0-0305 Trace level / Hiperface DSL

Datatype	Size in bit	Offset in bit	Properties
Enum	2	20	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Modulo

P-0-0305 Trace level / Modulo

Datatype	Size in bit	Offset in bit	Properties
Enum	2	22	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

Serial Flash

P-0-0305 Trace level / Serial Flash

Datatype	Size in bit	Offset in bit	Properties
Enum	2	24	---

Value	Explication
0	Off (no trace messages)
1	Level 1 (some messages)
2	Level 2 (more messages)
3	Level 3 (verbose)

reserved

P-0-0305 Trace level / reserved

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	6	26	---

P-0-0306 Actual main loop time

Time duration of the main loop.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	-
Default	0.00
Max. Value	-
Unit	ms
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0307 Max main loop time

Maximum time duration of the main loop since power up.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	0.00
Unit	ms
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0308 Actual ctrl loop time

Time duration of the control loop task.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	µs
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0309 Max ctrl loop time

Maximum time duration of the control loop task since power up.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	0
Unit	µs
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0310 Error reaction verification

The drives error behaviour can be tested with this parameter. The choosen error type is triggered if the appropriate flag is written to 1.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp, Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210
Password protection level	2

Also see about this

S-0-0011 Class 1 diagnostic (C1D) [▶ 26]

Force error reaction: Torque off

P-0-0310 Error reaction verification / Force error reaction: Torque off

Datatype	Size in bit	Offset in bit	Properties
BIT	1	0	---

Force error reaction: Slow down according to P-x-0356

P-0-0310 Error reaction verification / Force error reaction: Slow down according to P-x-0356

Format	Size in bit	Offset in bit	Properties
BIT	1	1	---

Force error reaction: Open loop ramp

P-0-0310 Error reaction verification / Force error reaction: Open loop ramp

Format	Size in bit	Offset in bit	Properties
BIT	1	2	---

Force error reaction: Closed loop ramp

P-0-0310 Error reaction verification / Force error reaction: Closed loop ramp

Datatype	Size in bit	Offset in bit	Properties
BIT	1	3	---

Force error reaction: NC handling

P-0-0310 Error reaction verification / Force error reaction: NC handling

Format	Size in bit	Offset in bit	Properties
BIT	1	4	---

rsvd1

P-0-0310 Error reaction verification / Force a feedback error

Datatype	Size in bit	Offset in bit	Properties
UINT 11; from Rev. 210 UINT 3	11; from Rev. 210: 3	5	---

Force a feedback error (from Rev. 210)

P-0-0310 Error reaction verification / Force a feedback error

Datatype	Size in bit	Offset in bit	Properties
BIT	1	8	---

rsvd2 (from Rev. 210)

P-0-0310 Error reaction verification / Force a feedback error

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	7	9	---

P-0-0311 PLL ctrl error

This parameter shows the drive internal PLL deviation according to the EtherCAT distributed clock.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	1
Min. Value	-214 748 364.8
Default	0.0
Max. Value	214 748 364.7
Unit	ns
EtherCATState	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0312 PCB temperature

The actual temperatue of the printed circuit board.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	°C
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-0313 Display output line 1

With this parameter a user defined text can be written on line 1 of the drives display.

Attributes

Name	Value
Datatype	udec
Data length in bit	416
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0305 Trace level [▶ 589]

Actual length

P-0-0313-Display output line 1 / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0313-Display output line 1 / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0313-Display output line 1 / Data

Format	Size in bit	Offset in bit
	384	32

String output mode

P-0-0313-Display output line 1 / Data / String output mode

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	Clear output
1	Overwrite cyclic values
2	Overwrite info messages
3	Overwrite warning messages
4	Overwrite error messages

Backlight mode

P-0-0313-Display output line 1 / Data / Backlight mode

Format	Size in bit	Offset in bit
Enum	16	16

Value	Description
0	Drive controlled
1	Light on
2	Ligth off

Keypad mode

P-0-0313-Display output line 1 / Data / Keypad mode

Datatype	Size in bit	Offset in bit
Enum	16	32

Value	Description
0	Menu on
1	Menu off

rsvd

P-0-0313-Display output line 1 / Data / rsvd

Format	Size in bit	Offset in bit
UINT	16	48

Output string

P-0-0313-Display output line 1 / Data / Output string

Datatype	Size in bit	Offset in bit
STRING(40)	320	64

Properties

Name	Value
Display	text

P-0-0314 Display output line 2

With this parameter a user defined text can be written on line 2 of the drives display.

Attributes

Name	Value
Datatype	udec
Data length in bit	416
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0314-Display output line 2 / Actual length

Datatype	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0314-Display output line 2 / Max length

Datatype	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0314-Display output line 2 / Data

Format	Size in bit	Offset in bit
	384	32

String output mode

P-0-0314-Display output line 2 / Data / String output mode

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	Clear output
1	Overwrite cyclic values
2	Overwrite info messages
3	Overwrite warning messages
4	Overwrite error messages

Backlight mode

P-0-0314-Display output line 2 / Data / Backlight mode

Format	Size in bit	Offset in bit
Enum	16	16

Value	Description
0	Drive controlled
1	Light on
2	Ligth off

Keypad mode

P-0-0314-Display output line 2 / Data / Keypad mode

Format	Size in bit	Offset in bit
Enum	16	32

Value	Description
0	Menu on
1	Menu off

rsvd

P-0-0314-Display output line 2 / Data / rsvd

Format	Size in bit	Offset in bit
UINT	16	48

Output string

P-0-0314-Display output line 2 / Data / Output string

Format	Size in bit	Offset in bit
STRING(40)	320	64

Properties

Name	Value
Display	text

P-0-0315 Diagnostic output

In case of an error (C1D) or a warning (C2D) a digital output of the drive can be set to signal the error or warning.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

- S-0-0032 Primary operation mode [▶ 50]
- S-0-0903 Configuration list of dynamic AT [▶ 195]

Configuration

P-0-0315-Diagnostic output / Configuration

Format	Size in bit	Offset in bit
Enum	3	0

Value	Description
0	No output
1	High active

Output number

P-0-0315-Diagnostic output / Output number

Format	Size in bit	Offset in bit
Enum	5	3

Value	Description
7	Digital output 7

Set output on Error (C1D)

P-0-0315-Diagnostic output / Set output on Error (C1D)

Format	Size in bit	Offset in bit
Enum	1	8

Value	Description
0	No
1	Yes

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- P-0-0350 Error reaction control word [▶ 697]

Set output on Warning (C2D)

P-0-0315-Diagnostic output / Set output on Warning (C2D)

Format	Size in bit	Offset in bit
Enum	1	9

Value	Description
0	No
1	Yes

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- P-0-0350 Error reaction control word [▶ 697]

rsvd

P-0-0315-Diagnostic output / rsvd

Format	Size in bit	Offset in bit
Array of UINT	6	10

P-0-0316 Thermal IGBT utilization monitoring

Thermal IGBT utilization monitoring.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Also see about this

- S-0-0032 Primary operation mode [▶ 50]
- S-0-0903 Configuration list of dynamic AT [▶ 195]

Actual length

P-0-0316-Thermal IGBT utilization monitoring / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0316-Thermal IGBT utilization monitoring / Max length

Datatype	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0316-Thermal IGBT utilization monitoring / Data

Format	Size in bit	Offset in bit
Enum	32	32

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- P-0-0350 Error reaction control word [▶ 697]

Mode

P-0-0316-Thermal IGBT utilization monitoring / Data / Mode

Datatype	Size in bit	Offset in bit
Enum	16; from Rev. 210: 6	0

Value	Description
0	Reduction to nominal current at 100%
1	Generate error at parameterized level

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- P-0-0350 Error reaction control word [▶ 697]

Warning level

P-0-0316-Thermal IGBT utilization monitoring / Data / Warning level

Datatype	Size in bit	Offset in bit
UINT16; from Rev. 210 UINT10	16; from Rev. 210: 10	from Rev. 210: 6

Properties

Name	Value
Decimal places	from Rev. 210: 1
Min. Value	from Rev. 210: 0
Max. Value	from Rev. 210: 1000

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- P-0-0350 Error reaction control word [▶ 697]

Error level

P-0-0316-Thermal IGBT utilization monitoring / Data / Error level

Datatype	Size in bit	Offset in bit
UINT10	from Rev. 210: 10	16

nRsvd (from Rev. 210)

P-0-0316-Thermal IGBT utilization monitoring / Data / nRsvd

Datatype	Size in bit	Offset in bit
UINT6	6	26

Properties

Name	Value
UIVisible	false

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- P-0-0350 Error reaction control word [▶ 697]

P-0-0317 Thermal IGBT utilization

Thermal IGBT utilization.

The Overload current integral [in ‰] only counts up when the peak is higher then P-0-0093.

$$Overload\ current\ integral\_max = (P\text{-}0\text{-}0092 - P\text{-}0\text{-}0093) \cdot P\text{-}0\text{-}0052 \cong 1000\ ‰$$

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0320 Software versions

A collection of the device component software versions

Attributes

Name	Value
Datatype	udec
Data length in bit	320
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Also see about this

- P-0-0010 Feature flags [▶ 212]
- S-0-0030 Manufacturer version [▶ 46]

Actual length

P-0-0320-Software versions / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0320-Software versions / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0320-Software versions / Data

Format	Size in bit	Offset in bit
	288	32

Firmware version

P-0-0320-Software versions / Data / Firmware version

Format	Size in bit	Offset in bit
UINT	16	0

Properties

Name	Value
Decimal point	2

Firmware build

P-0-0320-Software versions / Data / Firmware build

Format	Size in bit	Offset in bit
UINT	16	16

Bootloader version

P-0-0320-Software versions / Data / Bootloader version

Format	Size in bit	Offset in bit
UINT	16	32

Properties

Name	Value
Decimal point	2

Bootloader build

P-0-0320-Software versions / Data / Bootloader build

Format	Size in bit	Offset in bit
UINT	16	48

MainDsp compiler version

P-0-0320-Software versions / Data / MainDsp compiler version

Format	Size in bit	Offset in bit
UDINT	32	64

FeedbackDsp compiler version

P-0-0320-Software versions / Data / FeedbackDsp compiler version

Format	Size in bit	Offset in bit
UDINT	32	96

Option card firmware version

P-0-0320-Software versions / Data / Option card firmware version

Format	Size in bit	Offset in bit
UINT	16	128

Properties

Name	Value
Decimal point	2

Option card firmware build

P-0-0320-Software versions / Data / Option card firmware build

Format	Size in bit	Offset in bit
UINT	16	144

Option card interface

P-0-0320-Software versions / Data / Option card interface

Format	Size in bit	Offset in bit
UINT	16	160

Properties

Name	Value
Decimal point	2

rsvd

P-0-0320-Software versions / Data / rsvd

Datatype	Size in bit	Offset in bit
UINT	16	176

Properties

Name	Value
UIVisible	False

Option card Dsp compiler version

P-0-0320-Software versions / Data / Option card Dsp compiler version

Format	Size in bit	Offset in bit
UDINT	32	192

Scnd Fpga: Intf

P-0-0320-Software versions / Data / Scnd Fpga: Intf

Format	Size in bit	Offset in bit
UINT4	4	224

Scnd Fpga: Build

P-0-0320-Software versions / Data / Scnd Fpga: Build

Format	Size in bit	Offset in bit
USINT	8	228

Scnd Fpga: Version

P-0-0320-Software versions / Data / Scnd Fpga: Version

Format	Size in bit	Offset in bit
UINT4	4	236

rsvd

P-0-0320-Software versions / Data / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	240

Properties

Name	Value
UIVisible	Falsch

rsvd

P-0-0320-Software versions / Data / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	256

Properties

Name	Value
UIVisible	Falsch

rsvd

P-0-0320-Software versions / Data / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	272

Properties

Name	Value
UIVisible	Falsch

P-0-0321 Flash directory

The directory of the drives internal nonvolatile memory.

Attributes

Name	Value
Datatype	udec
Data length in bit	3040
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0321-Flash directory / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0321-Flash directory / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0321-Flash directory / Data

Format	Size in bit	Offset in bit
	3008	32

Disk size

P-0-0321-Flash directory / Data / Disk size

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Unit	Byte

Used size

P-0-0321-Flash directory / Data / Used size

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / Alignment

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
UnitName	Byte

Free size

P-0-0321-Flash directory / Data / Free size

Format	Size in bit	Offset in bit
UDINT	32	96

Properties

Name	Value
Unit	Byte

File 0

P-0-0321-Flash directory / Data / File 0

Format	Size in bit	Offset in bit
	288	128

Type

P-0-0321-Flash directory / Data / File 0 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 0 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 0 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 0 / Info / Version

Datatype	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 0 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 0 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Anzeige	hex

Time L

P-0-0321-Flash directory / Data / File 0 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 0 / Info / Id 1

Format	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 0 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 0 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 0 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 0 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 0 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 1

P-0-0321-Flash directory / Data / File 1

Format	Size in bit	Offset in bit
	288	416

Type

P-0-0321-Flash directory / Data / File 1 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 1 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 1 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 1 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 1 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 1 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
DisplayFormat	hex

Time L

P-0-0321-Flash directory / Data / File 1 / Info / Time L

Datatype	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 1 / Info / Id 1

Format	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 1 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 1 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 1 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 1 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 1 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 2

P-0-0321-Flash directory / Data / File 2

Format	Size in bit	Offset in bit
	288	704

Type

P-0-0321-Flash directory / Data / File 2 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 2 / rsvd

Datatype	Size in bit	Offset in bit
UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 2 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 2 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 2 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 2 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 2 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Table 118: Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 2 / Info / Id 1

Datatype	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 2 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 2 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 2 / Size on disk

Datatype	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 2 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 2 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
DisplayFormat	hex

File 3

P-0-0321-Flash directory / Data / File 3

Format	Size in bit	Offset in bit
	288	992

Type

P-0-0321-Flash directory / Data / File 3 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 3 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 3 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 3 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 3 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 3 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 3 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 3 / Info / Id 1

Format	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 3 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 3 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 3 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 3 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 3 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 4

P-0-0321-Flash directory / Data / File 4

Format	Size in bit	Offset in bit
	288	1280

Type

P-0-0321-Flash directory / Data / File 4 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 4 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 4 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 4 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 4 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 4 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 4 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 4 / Info / Id 1

Format	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 4 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 4 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 4 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 4 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 4 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 5

P-0-0321-Flash directory / Data / File 5

Format	Size in bit	Offset in bit
	288	1568

Type

P-0-0321-Flash directory / Data / File 5 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 5 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 5 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 5 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 5 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 5 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 5 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 5 / Info / Id 1

Datatype	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 5 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 5 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 5 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 5 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 5 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 6

P-0-0321-Flash directory / Data / File 6

Format	Size in bit	Offset in bit
	288	1856

Type

P-0-0321-Flash directory / Data / File 6 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 6 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 6 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 6 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 6 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 6 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 6 / Info / Time L

Datatype	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 6 / Info / Id 1

Datatype	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 6 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 6 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 6 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 6 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 6 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 7

P-0-0321-Flash directory / Data / File 7

Format	Size in bit	Offset in bit
	288	2144

Type

P-0-0321-Flash directory / Data / File 7 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 7 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 7 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 7 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 7 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 7 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 7 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 7 / Info / Id 1

Format	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 7 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 7 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 7 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 7 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 7 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 8

P-0-0321-Flash directory / Data / File 8

Format	Size in bit	Offset in bit
	288	2432

Type

P-0-0321-Flash directory / Data / File 8 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 8 / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 8 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 8 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 8 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 8 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 8 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 8 / Info / Id 1

Datatype	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 8 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 8 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 8 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 8 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 8 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

File 9

P-0-0321-Flash directory / Data / File 9

Format	Size in bit	Offset in bit
	288	2720

Type

P-0-0321-Flash directory / Data / File 9 / Type

Format	Size in bit	Offset in bit
Enum	16	0

Value	Description
1	Bootloader
2	Fpga config
3	Dsp code
4	Diagnostics File
16	Operation data 0
17	Operation data 1

rsvd

P-0-0321-Flash directory / Data / File 9 / rsvd

Format	Size in bit	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Info

P-0-0321-Flash directory / Data / File 9 / Info

Format	Size in bit	Offset in bit
	128	32

Version

P-0-0321-Flash directory / Data / File 9 / Info / Version

Format	Size in bit	Offset in bit
UINT	16	0

Build

P-0-0321-Flash directory / Data / File 9 / Info / Build

Format	Size in bit	Offset in bit
UINT	16	16

Time H

P-0-0321-Flash directory / Data / File 9 / Info / Time H

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
Display	hex

Time L

P-0-0321-Flash directory / Data / File 9 / Info / Time L

Format	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Display	hex

Id 1

P-0-0321-Flash directory / Data / File 9 / Info / Id 1

Format	Size in bit	Offset in bit
UINT	16	96

Properties

Name	Value
Display	hex

Id 2

P-0-0321-Flash directory / Data / File 9 / Info / Id 2

Format	Size in bit	Offset in bit
UINT	16	112

Properties

Name	Value
Display	hex

Size

P-0-0321-Flash directory / Data / File 9 / Size

Format	Size in bit	Offset in bit
UDINT	32	160

Properties

Name	Value
UnitName	Byte

Size on disk

P-0-0321-Flash directory / Data / File 9 / Size on disk

Format	Size in bit	Offset in bit
UDINT	32	192

Properties

Name	Value
UnitName	Byte

Alignment

P-0-0321-Flash directory / Data / File 9 / Alignment

Format	Size in bit	Offset in bit
UDINT	32	224

Properties

Name	Value
UnitName	Byte

Start address

P-0-0321-Flash directory / Data / File 9 / Start address

Format	Size in bit	Offset in bit
UDINT	32	256

Properties

Name	Value
Display	hex

P-0-0322 Device component hardware Ids

A collection of the device component hardware Ids.

Attributes

Name	Value
Datatype	udec
Data length in bit	1088
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No
Password protection level	1

Actual length

P-0-0322-Device component hardware Ids / Actual length

Format	Data length	Offset in bit
UINT	16	0

Max length

P-0-0322-Device component hardware Ids / Max length

Format	Data length	Offset in bit
UINT	16	16

Data

P-0-0322-Device component hardware Ids / Data

Datatype	Data length	Offset in bit
-	1056	32

Control Pcb

P-0-0322-Device component hardware Ids / Control Pcb

Format	Data length	Offset in bit
-	128	0

PCB ID version

P-0-0322-Device component hardware Ids / Control Pcb / PCB ID version

Format	Data length	Offset in bit
UINT	16	0

Hwld 1

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 1

Format	Data length	Offset in bit
Enum	16	16

reserved

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 1 / reserved

Datatype	Data length	Offset in bit
UINT2	2	0

Hardware type

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 1 / Hardware type

Format	Data length	Offset in bit
UINT6	6	2

Programming place

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 1 / Programming place

Format	Data length	Offset in bit
UINT4	4	8

Vendor

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 1 / Vendor

Format	Data length	Offset in bit
UINT4	4	12

Hwld 2

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 2

Format	Data length	Offset in bit
Enum	16	32

Component type

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 2 / Component type

Datatype	Data length	Offset in bit
UINT4	4	0

Hardware Index

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 2 / Hardware Index

Datatype	Data length	Offset in bit
UINT4	4	4

Pcb rype

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 2 / Pcb type

Datatype	Data length	Offset in bit
UINT4	4	8

Pcb revision

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 2 / Pcb revision

Format	Data length	Offset in bit
UINT4	4	12

Hwld 3

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3

Format	Data length	Offset in bit
Enum	16	32

Feature flags

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Feature flags

Format	Data length	Offset in bit
Enum	4	0

Feature 0

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Feature flags / Feature 0

Format	Data length	Offset in bit
BIT	1	0

Feature 1

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Feature flags / Feature 1

Format	Data length	Offset in bit
BIT	1	1

Feature 2

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Feature flags / Feature 2

Datatype	Data length	Offset in bit
BIT	1	2

Feature 3

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Feature flags / Feature 3

Format	Data length	Offset in bit
BIT	1	3

Supported No of channels

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Supported No of channels

Format	Data length	Offset in bit
UINT4	4	4

Firmware Index

P-0-0322-Device component hardware Ids / Control Pcb / Hwld 3 / Firmware Index

Format	Data length	Offset in bit
USINT	8	8

Manufacturing Date

P-0-0322-Device component hardware Ids / Control Pcb / Manufacturing Date

Format	Data length	Offset in bit
UINT	16	64

Serial number low

P-0-0322-Device component hardware Ids / Control Pcb / Serial number low

Format	Data length	Offset in bit
UINT	16	80

Serial number high

P-0-0322-Device component hardware Ids / Control Pcb / Serial number high

Datatype	Data length	Offset in bit
UINT	16	96

Checksum

P-0-0322-Device component hardware Ids / Control Pcb / Checksum

Format	Data length	Offset in bit
UINT	16	112

Power Pcb

P-0-0322-Device component hardware Ids / Power Pcb

Format	Data length	Offset in bit
-	128	128

PCB ID version

P-0-0322-Device component hardware Ids / Power Pcb / PCB ID version

Datatype	Data length	Offset in bit
UINT	16	0

Hwld 1

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 1

Format	Data length	Offset in bit
Enum	16	16

reserved

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 1 / reserved

Format	Data length	Offset in bit
UINT2	2	0

Hardware type

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 1 / Hardware type

Format	Data length	Offset in bit
UINT6	6	2

Programming place

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 1 / Programming place

Format	Data length	Offset in bit
UINT4	4	8

Vendor

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 1 / Vendor

Format	Data length	Offset in bit
UINT4	4	12

Hwld 2

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 2

Format	Data length	Offset in bit
Enum	16	32

Component type

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 2 / Component type

Format	Data length	Offset in bit
UINT4	4	0

Hardware Index

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 2 / Hardware Index

Format	Data length	Offset in bit
UINT4	4	4

Pcb type

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 2 / Pcb type

Format	Data length	Offset in bit
UINT4	4	8

Pcb revision

Hwld 3

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3

Format	Data length	Offset in bit
Enum	16	48

Feature flags

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Feature flags

Format	Data length	Offset in bit
Enum	4	0

Feature 0

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Feature flags / Feature 0

Format	Data length	Offset in bit
BIT	1	0

Feature 1

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Feature flags / Feature 1

Format	Data length	Offset in bit
BIT	1	1

Feature 2

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Feature flags / Feature 2

Format	Data length	Offset in bit
BIT	1	2

Feature 3

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Feature flags / Feature 3

Format	Data length	Offset in bit
BIT	1	3

Supported No of channels

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Supported No of channels

Format	Data length	Offset in bit
UINT4	4	4

Firmware Index

P-0-0322-Device component hardware Ids / Power Pcb / Hwld 3 / Firmware Index

Format	Data length	Offset in bit
USINT	8	8

Manufacturing Date

P-0-0322-Device component hardware Ids / Power Pcb / Manufacturing Date

Format	Data length	Offset in bit
UINT	16	64

Serial number low

P-0-0322-Device component hardware Ids / Power Pcb / Serial number low

Format	Data length	Offset in bit
UINT	16	80

Serial number high

P-0-0322-Device component hardware Ids / Power Pcb / Serial number high

Format	Data length	Offset in bit
UINT	16	96

Checksum

P-0-0322-Device component hardware Ids / Power Pcb / Checksum

Format	Data length	Offset in bit
UINT	16	112

Driver Pcb

P-0-0322-Device component hardware Ids / Driver Pcb

Format	Data length	Offset in bit
-	128	256

PCB ID version

P-0-0322-Device component hardware Ids / Driver Pcb / PCB ID version

Format	Data length	Offset in bit
UINT	16	0

Hwld 1

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 1

Format	Data length	Offset in bit
Enum	16	16

reserved

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 1 / reserved

Format	Data length	Offset in bit
UINT2	2	0

Hardware type

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 1 / Hardware type

Datatype	Data length	Offset in bit
UINT6	6	2

Programming place

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 1 / Programming place

Format	Data length	Offset in bit
UINT4	4	8

Vendor

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 1 / Vendor

Format	Data length	Offset in bit
UINT4	4	12

Hwld 2

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 2

Format	Data length	Offset in bit
Enum	16	32

Component type

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 2 / Component type

Format	Data length	Offset in bit
UINT4	4	0

Hardware Index

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 2 / Hardware Index

Format	Data length	Offset in bit
UINT4	4	4

Pcb type

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 2 / Pcb type

Datatype	Data length	Offset in bit
UINT4	4	8

Pcb revision

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 2 / Pcb revision

Format	Data length	Offset in bit
UINT4	4	12

Hwld 3

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3

Format	Data length	Offset in bit
Enum	16	48

Feature flags

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Feature flags

Format	Data length	Offset in bit
Enum	4	0

Feature 0

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Feature flags / Feature 0

Format	Data length	Offset in bit
BIT	1	0

Feature 1

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Feature flags / Feature 1

Format	Data length	Offset in bit
BIT	1	1

Feature 2

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Feature flags / Feature 2

Format	Data length	Offset in bit
BIT	1	2

Feature 3

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Feature flags / Feature 3

Format	Data length	Offset in bit
BIT	1	3

Supported No of channels

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Supported No of channels

Format	Data length	Offset in bit
UINT4	4	4

Firmware Index

P-0-0322-Device component hardware Ids / Driver Pcb / Hwld 3 / Firmware Index

Format	Data length	Offset in bit
USINT	8	8

Manufacturing Date

P-0-0322-Device component hardware Ids / Driver Pcb / Manufacturing Date

Format	Data length	Offset in bit
UINT	16	64

Serial number low

P-0-0322-Device component hardware Ids / Driver Pcb / Serial number low

Format	Data length	Offset in bit
UINT	16	80

Serial number high

P-0-0322-Device component hardware Ids / Driver Pcb / Serial number high

Format	Data length	Offset in bit
UINT	16	96

Checksum

P-0-0322-Device component hardware Ids / Driver Pcb / Checksum

Format	Data length	Offset in bit
UINT	16	112

Front Pcb

P-0-0322-Device component hardware Ids / Front Pcb

Format	Data length	Offset in bit
-	128	384

PCB ID version

P-0-0322-Device component hardware Ids / Front Pcb / PCB ID version

Format	Data length	Offset in bit
UINT	16	0

Hwld 1

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 1

Format	Data length	Offset in bit
Enum	16	16

reserved

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 1 / reserved

Format	Data length	Offset in bit
UINT2	2	0

Hardware type

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 1 / Hardware type

Format	Data length	Offset in bit
UINT6	6	2

Programming place

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 1 / Programming place

Format	Data length	Offset in bit
UINT4	4	8

Vendor

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 1 / Vendor

Format	Data length	Offset in bit
UINT4	4	12

Hwld 2

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 2

Format	Data length	Offset in bit
Enum	16	32

Component type

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 2 / Component type

Format	Data length	Offset in bit
UINT4	4	0

Hardware Index

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 2 / Hardware Index

Format	Data length	Offset in bit
UINT4	4	4

Pcb type

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 2 / Pcb type

Format	Data length	Offset in bit
UINT4	4	8

Pcb revision

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 2 / Pcb revision

Format	Data length	Offset in bit
UINT4	4	12

Hwld 3

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3

Format	Data length	Offset in bit
Enum	16	48

Feature flags

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Feature flags

Format	Data length	Offset in bit
Enum	4	0

Feature 0

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Feature flags / Feature 0

Datatype	Data length	Offset in bit
BIT	1	0

Feature 1

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Feature flags / Feature 1

Format	Data length	Offset in bit
BIT	1	1

Feature 2

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Feature flags / Feature 2

Format	Data length	Offset in bit
BIT	1	2

Feature 3

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Feature flags / Feature 3

Format	Data length	Offset in bit
BIT	1	3

Supported No of channels

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Supported No of channels

Format	Data length	Offset in bit
UINT4	4	4

Firmware Index

P-0-0322-Device component hardware Ids / Front Pcb / Hwld 3 / Firmware Index

Format	Data length	Offset in bit
USINT	8	8

Manufacturing Date

P-0-0322-Device component hardware Ids / Front Pcb / Manufacturing Date

Format	Data length	Offset in bit
UINT	16	64

Serial number low

P-0-0322-Device component hardware Ids / Front Pcb / Serial number low

Datatype	Data length	Offset in bit
UINT	16	80

Serial number high

P-0-0322-Device component hardware Ids / Front Pcb / Serial number high

Format	Data length	Offset in bit
UINT	16	96

Checksum

P-0-0322-Device component hardware Ids / Front Pcb / Checksum

Format	Data length	Offset in bit
UINT	16	112

Option Pcb

P-0-0322-Device component hardware Ids / Option Pcb

Format	Data length	Offset in bit
-	128	512

PCB ID version

P-0-0322-Device component hardware Ids / Option Pcb / PCB ID version

Format	Data length	Offset
UINT	16	0

Hwld 1

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 1

Format	Data length	Offset in bit
Enum	16	16

reserved

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 1 / reserved

Format	Data length	Offset in bit
UINT2	2	0

Hardware type

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 1 / Hardware type

Datatype	Data length	Offset in bit
UINT6	6	2

Programming place

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 1 / Programming place

Format	Data length	Offset in bit
UINT4	4	8

Vendor

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 1 / Vendor

Format	Data length	Offset in bit
UINT4	4	12

Hwld 2

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 2

Format	Data length	Offset in bit
Enum	16	32

Component type

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 2 / Component type

Format	Data length	Offset in bit
UINT4	4	0

Hardware Index

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 2 / Hardware Index

Format	Data length	Offset in bit
UINT4	4	4

Pcb type

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 2 / Pcb type

Format	Data length	Offset in bit
UINT4	4	8

Pcb revision

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 2 / Pcb revision

Format	Data length	Offset in bit
UINT4	4	12

Hwld 3

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3

Format	Data length	Offset in bit
Enum	16	48

Feature flags

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Feature flags

Format	Data length	Offset in bit
Enum	4	0

Feature 0

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Feature flags / Feature 0

Datatype	Data length	Offset in bit
BIT	1	0

Feature 1

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Feature flags / Feature 1

Format	Data length	Offset in bit
BIT	1	1

Feature 2

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Feature flags / Feature 2

Format	Data length	Offset in bit
BIT	1	2

Feature 3

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Feature flags / Feature 3

Format	Data length	Offset in bit
BIT	1	3

Supported No of channels

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Supported No of channels

Format	Data length	Offset in bit
UINT4	4	4

Firmware Index

P-0-0322-Device component hardware Ids / Option Pcb / Hwld 3 / Firmware Index

Format	Data length	Offset in bit
USINT	8	8

Manufacturing Date

P-0-0322-Device component hardware Ids / Option Pcb / Manufacturing Date

Format	Data length	Offset
UINT	16	64

Serial number low

P-0-0322-Device component hardware Ids / Option Pcb / Serial number low

Format	Data length	Offset
UINT	16	80

Serial number high

P-0-0322-Device component hardware Ids / Option Pcb / Serial number high

Format	Data length	Offset
UINT	16	96

Checksum

P-0-0322-Device component hardware Ids / Option Pcb / Checksum

Format	Data length	Offset
UINT	16	112

Safety Pcb

P-0-0322-Device component hardware Ids / Safety Pcb

Format	Data length	Offset in bit
-	128	640

PCB ID version

P-0-0322-Device component hardware Ids / Safety Pcb / PCB ID version

Datatype	Data length	Offset in bit
UINT	16	0

Hwld 1

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 1

Format	Data length	Offset in bit
Enum	16	16

reserved

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 1 / reserved

Datatype	Data length	Offset in bit
UINT2	2	0

Hardware type

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 1 / Hardware type

Datatype	Data length	Offset in bit
UINT6	6	2

Programming place

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 1 / Programming place

Format	Data length	Offset in bit
UINT4	4	8

Vendor

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 1 / Vendor

Format	Data length	Offset in bit
UINT4	4	12

Hwld 2

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 2

Format	Data length	Offset in bit
Enum	16	32

Component type

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 2 / Component type

Format	Data length	Offset in bit
UINT4	4	0

Hardware Index

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 2 / Hardware Index

Format	Data length	Offset in bit
UINT4	4	4

Pcb type

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 2 / Pcb type

Datatype	Data length	Offset in bit
UINT4	4	8

Pcb revision

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 2 / Pcb revision

Format	Data length	Offset in bit
UINT4	4	12

Hwld 3

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3

Format	Data length	Offset in bit
Enum	16	48

Feature flags

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Feature flags

Format	Data length	Offset in bit
Enum	4	0

Feature 0

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Feature flags / Feature 0

Format	Data length	Offset in bit
BIT	1	0

Feature 1

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Feature flags / Feature 1

Format	Data length	Offset in bit
BIT	1	1

Feature 2

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Feature flags / Feature 2

Format	Data length	Offset in bit
BIT	1	2

Feature 3

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Feature flags / Feature 3

Format	Data length	Offset in bit
BIT	1	3

Supported No of channels

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Supported No of channels

Format	Data length	Offset in bit
UINT4	4	4

Firmware Index

P-0-0322-Device component hardware Ids / Safety Pcb / Hwld 3 / Firmware Index

Datatype	Data length	Offset in bit
USINT	8	8

Manufacturing Date

P-0-0322-Device component hardware Ids / Safety Pcb / Manufacturing Date

Format	Data length	Offset in bit
UINT	16	64

Serial number low

P-0-0322-Device component hardware Ids / Safety Pcb / Serial number low

Format	Data length	Offset in bit
UINT	16	80

Serial number high

P-0-0322-Device component hardware Ids / Safety Pcb / Serial number high

Datatype	Data length	Offset in bit
UINT	16	96

Checksum

P-0-0322-Device component hardware Ids / Safety Pcb / Checksum

Datatype	Data length	Offset in bit
UINT	16	112

Control Pcb Id valid

P-0-0322-Device component hardware Ids / Control Pcb Id valid

Format	Data length	Offset in bit
UINT	16	768

Power Pcb Id valid

P-0-0322-Device component hardware Ids / Power Pcb Id valid

Format	Data length	Offset in bit
UINT	16	784

Driver Pcb Id valid

P-0-0322-Device component hardware Ids / Driver Pcb Id valid

Format	Data length	Offset in bit
UINT	16	800

Front Pcb Id valid

P-0-0322-Device component hardware Ids / Front Pcb Id valid

Format	Data length	Offset in bit
UINT	16	816

OptionSlot Pcb Id valid

P-0-0322-Device component hardware Ids / OptionSlot Pcb Id valid

Format	Data length	Offset in bit
UINT	16	832

SafetySlot Pcb Id valid

P-0-0322-Device component hardware Ids / SafetySlot Pcb Id valid

Format	Data length	Offset in bit
UINT	16	848

Dsp Revision

P-0-0322-Device component hardware Ids / Dsp Revision

Format	Data length	Offset in bit
Enum	16	864

Value	Description
0	Silicon Rev. 0
1	Silicon Rev. A
2	Silicon Rev. B
3	Silicon Rev. C
4	Silicon Rev. D
5	Silicon Rev. E
6	Silicon Rev. F
7	Silicon Rev. G

Dsp Id / Xint Revision

P-0-0322-Device component hardware Ids / Dsp Id / Xint Revision

Format	Data length	Offset in bit
Enum	16	880

Value	Description
4	Type R
65488	C28346
65489	C28345
65490	C28344
65491	C28343
65492	C28342
65493	C28341

Feedback Dsp Id

P-0-0322-Device component hardware Ids / Feedback Dsp Id

Format	Data length	Offset in bit
Enum	16	896

Value	Description
44	F2801
52	F2806
60	F2808
208	C28346
209	C28345
210	C28344
211	C28343
212	C28342
213	C28341

Feedback Dsp Revision

P-0-0322-Device component hardware Ids / Feedback Dsp Revision

Format	Data length	Offset in bit
Enum	16	912

Value	Description
0	Silicon Rev. 0
1	Silicon Rev. A
2	Silicon Rev. B
3	Silicon Rev. C
4	Silicon Rev. D

Esc Revision

P-0-0322-Device component hardware Ids / ESC Revision

Datatype	Data length	Offset in bit
UINT	16	928

Esc Build

P-0-0322-Device component hardware Ids / Esc Build

Format	Data length	Offset in bit
UINT	16	944

Esc Type

P-0-0322-Device component hardware Ids / Esc Type

Datatype	Data length	Offset in bit
UINT	16	960

FPGA Device Type

P-0-0322-Device component hardware Ids / FPGA Device Type

Format	Data length	Offset in bit
UINT	16	976

FPGA Device Subtype

P-0-0322-Device component hardware Ids / FPGA Device Subtype

Datatype	Data length	Offset in bit
UINT	16	992

FPGA Version Number

P-0-0322-Device component hardware Ids / FPGA Version Number

Format	Data length	Offset in bit
UINT	16	1008

FPGA Build Number

P-0-0322-Device component hardware Ids / FPGA Build Number

Format	Data length	Offset in bit
UINT	16	1024

Option slot FPGA

P-0-0322-Device component hardware Ids / Option slot FPGA

Format	Data length	Offset in bit
Enum	16	1040

Version

P-0-0322-Device component hardware Ids / Option slot FPGA / Version

Format	Data length	Offset in bit
USINT	8	0

Build

P-0-0322-Device component hardware Ids / Option slot FPGA / Build

Datatype	Data length	Offset in bit
USINT	8	8

P-0-0323 Memory usage

Internal diagnostic of the used memory.

Attributes

Name	Value
Datatype	udec
Data length in bit	800
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0323-Memory usage / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0323-Memory usage / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0323-Memory usage / Data

Format	Size in bit	Offset in bit
	768	32

Control

P-0-0323-Memory usage / Data / Control

Format	Size in bit	Offset in bit
	256	0

Stack

P-0-0323-Memory usage / Data / Control / Stack

Format	Size in bit	Offset in bit
Enum	64	0

Total

P-0-0323-Memory usage / Data / Control / Stack / Total

Datatype	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Control / Stack / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

Heap

P-0-0323-Memory usage / Data / Control / Heap

Format	Size in bit	Offset in bit
Enum	64	64

Total

P-0-0323-Memory usage / Data / Control / Heap / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Control / Heap / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

Dynamic

P-0-0323-Memory usage / Data / Control / Dynamic

Format	Size in bit	Offset in bit
Enum	64	128

Total

P-0-0323-Memory usage / Data / Control / Dynamic / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Control / Dynamic / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

rsvd

P-0-0323-Memory usage / Data / Control / rsvd

Format	Size in bit	Offset in bit
Array of UINT	64	192

Properties

Name	Value
UIVisible	False

Total

P-0-0323-Memory usage / Data / Control / rsvd / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Control / rsvd / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

Front

P-0-0323-Memory usage / Data / Front

Format	Size in bit	Offset in bit
	256	256

Stack

P-0-0323-Memory usage / Data / Front / Stack

Format	Size in bit	Offset in bit
Enum	64	0

Total

P-0-0323-Memory usage / Data / Front / Stack / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Front / Stack / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

Heap

P-0-0323-Memory usage / Data / Front / Heap

Format	Size in bit	Offset in bit
Array of UINT	64	64

Total

P-0-0323-Memory usage / Data / Front / Heap / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Front / Heap / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

rsvd1

P-0-0323-Memory usage / Data / Front / rsvd1

Format	Size in bit	Offset in bit
Enum	64	128

Table 119: Properties

Name	Value
UIVisible	False

Total

P-0-0323-Memory usage / Data / Front / rsvd1 / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Front / rsvd1 / Available

Datatype	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

rsvd2

P-0-0323-Memory usage / Data / Front / rsvd2

Format	Size in bit	Offset in bit
Enum	64	192

Table 120: Properties

Name	Value
UIVisible	False

Total

P-0-0323-Memory usage / Data / Front / rsvd2 / Total

Datatype	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Front / rsvd2 / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

Option

P-0-0323-Memory usage / Data / Option

Datatype	Size in bit	Offset in bit
	256	512

Stack

P-0-0323-Memory usage / Data / Option / Stack

Format	Size in bit	Offset in bit
Enum	64	0

Total

P-0-0323-Memory usage / Data / Option / Stack / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Table 121: Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Option / Stack / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Table 122: Properties

Name	Value
UnitName	Byte

Heap

P-0-0323-Memory usage / Data / Option / Heap

Format	Size in bit	Offset in bit
Enum	64	64

Total

P-0-0323-Memory usage / Data / Option / Heap / Total

Datatype	Size in bit	Offset in bit
UDINT	32	0

Table 123: Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Option / Heap / Available

Datatype	Size in bit	Offset in bit
UDINT	32	32

Table 124: Properties

Name	Value
UnitName	Byte

rsvd1

P-0-0323-Memory usage / Data / Option / rsvd1

Format	Size in bit	Offset in bit
Enum	64	128

Properties

Name	Value
UIVisible	False

Total

P-0-0323-Memory usage / Data / Option / rsvd1 / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Option / rsvd1 / Available

Format	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

rsvd2

P-0-0323-Memory usage / Data / Option / rsvd2

Format	Size in bit	Offset in bit
Enum	64	192

Properties

Name	Value
UIVisible	False

Total

P-0-0323-Memory usage / Data / Option / rsvd2 / Total

Format	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Byte

Available

P-0-0323-Memory usage / Data / Option / rsvd2 / Available

Datatype	Size in bit	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	Byte

P-0-0324 ProductCode/RevisionNo

This IDN displays the product code and revision number stored in the drives internal nonvolatile memory.

Attributes

Name	Value
Datatype	text
Data length in bit	160
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0324-ProductCode/RevisionNo / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0324-ProductCode/RevisionNo / Max length

Format	Size in bit	Offset in bit
UINT	16	16

P-0-0325 Compile time and date

This IDN displays the compile time and data of the drives firmware.

Attributes

Name	Value
Datatype	text
Data length in bit	208
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0325-Compile time and date / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0325-Compile time and date / Max length

Format	Size in bit	Offset in bit
UINT	16	16

P-0-0326 Release notes

The drives firmware can display some release notes in this IDN.

Attributes

Name	Value
Datatype	text
Data length in bit	672
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Actual length

P-0-0326-Release notes / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0326-Release notes / Max length

Format	Size in bit	Offset in bit
UINT	16	16

P-0-0340 Error propagation configuration

This IDN specifies how a torque off error can be fast signaled to another drive. For dependent axes, where the error reaction is time-critical, there is the possibility, in the event of an error directly, in regardless of the fieldbus, between the axes. This is described in P-0-0340 configured. An example of this is gantry operation. Signaling can be done internally (AX52xx) or via a digital I/O.

Attributes

Name	Value
Datatype	udec
Data length in bit	128
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

- P-0-0341 Gantry brake configuration [▶ 695]

Actual length

P-0-0340-Error propagation configuration / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Maximal length

P-0-0340-Error propagation configuration / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0340-Error propagation configuration / Data

Format	Size in bit	Offset in bit
	96	32

Propagate error types

P-0-0340-Error propagation configuration / Propagate error types

Datatype	Size in bit	Offset in bit
	16	0

Parameter structure

Bit	Description
0	**Torque off** 0 = No 1 = Yes

rsvd

Datatype	Size in bit	Offset in bit	Properties
UINT15	15	1	--

Propagate errors

P-0-0340-Error configuration / Propagate errors

Datatype	Size in bit	Offset in bit
Enum	16	16

Parameter structure

Value	Description
0	No
8	To: digital output 7
9	To: other channel oft he same device

React on propagated errors

P-0-0340-Error propagation configuration / React on propagated errors

Datatype	Size in bit	Offset in bit
Enum	16	32

Value	Description
0	No
1	With: Torque off
5	With: Gantry brake, see P-0-0341 [▶ 695]

Receive propagated errors

P-0-0340-Error propagation configuration / Receive propagated errors

Datatype	Size in bit	Offset in bit
Enum	16	48

Value	Description
0	No
1	from: Digital Input 0
2	from: Digital Input 1
3	from: Digital Input 2
4	from: Digital Input 3
5	from: Digital Input 4
6	from: Digital Input 5
7	from: Digital Input 6
8	from: Digital Input 7
9	from: Other channel of same device

rsvd

P-0-0340-Error propagation configuration / Reserved

Format	Size in bit	Offset in bit
Array of UINT	16	64

rsvd

P-0-0340-Error propagation configuration / Reserved

Format	Size in bit	Offset in bit
Array of UINT	16	80

Torque off

P-0-0340-Error propagation configuration / Torque off

Format	Size in bit	Offset in bit
Enum	1	0

Shorted coils brake

P-0-0340-Error propagation configuration / Shorted coils brake

Format	Size in bit	Offset in bit
Enum	1	1

Open loop ramp

P-0-0340-Error propagation configuration / Open loop ramp

Format	Size in bit	Offset in bit
Enum	1	2

Closed loop ramp

P-0-0340-Error propagation configuration / Closed loop ramp

Format	Size in bit	Offset in bit
Enum	1	3

Nc handling

P-0-0340-Error propagation configuration / Nc handling

Format	Size in bit	Offset in bit
-	1	4

Lost feedback

P-0-0340-Error propagation configuration / Lost feedback

Format	Size in bit	Offset in bit
-	1	5

P-0-0341 Gantry brake configuration

This IDN can be used for a special reaction in case of an error state of the other gantry drive.

Attributes

Name	Value
Datatype	udec
Data length in bit	96
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

P-0-0340 Error propagation configuration [▶ 691]

Actual length

P-0-0341-Gantry brake configuration / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0341 Gantry brake configuration / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Data

P-0-0341-Gantry brake configuration / Data

Format	Size in bit	Offset in bit
Enum	64	32

Use ´Gantry-Brake´ instead of the ´closed loop ramp´

Format	Size in Bit	Offset in bit
	16	16

Brake torque

P-0-0341-Gantry brake configuration / Brake torque

Format	Size in bit	Offset in bit
UINT	16	0

Unit: %

Also see about this

- P-0-0340 Error propagation configuration [▶ 691]

rsvd

P-0-0341-Error propagation configuration / Reserved

Format	Size in bit	Offset in bit
Array of UINT	16	32

rsvd

P-0-0341-Error propagation configuration / Reserved

Datatype	Size in bit	Offset in bit
Enum	16	48

P-0-0350 Error reaction control word

This control word defines the drives error behaviour.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	1
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp, SafeOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Description:

The servo drive falls back to the EtherCAT SafeOp state when the feedback position is invalid.

If the position is invalid, the NC has noticed this. In this case we use the WC-state. If we get an invalid position, the servo drive shut down the process data SyncMan. The result is that the WC-state signaled invalid data.

When the servo drive returns in the EtherCAT SafeOp state, depends on the settings in this parameter.

Whether the unit falls back to the EtherCAT SafeOp state shows the parameter P-0-0040 (Additional drive status word).

For further information please look into the involved IDN:

P-0-0040 [▶ 216]

Error reaction

P-0-0350 Error reaction control word / Error reaction

Format	Size in bit	Offset in bit	Properties
Enum	4	0	---

Table 125: Attributes

Value	Explication
0	a) Torque off
1	a) Ramp (S-0-0429) b) torque off
2	a) Ramp b) Slow down according to P-x-0356 with thermal monitoring
3	a) Ramp b) Slow down according to P-x-0356 without thermal monitoring

Also see about this

P-x-0356 Rotor slowdown procedure parameter [▶ 703]

Communication state change on fatal error

P-0-0350 Error reaction control word / Communication state change on fatal error

Format	Size in bit	Offset in bit	Properties
Enum	2	4	---

Value	Explication
0	Immediate state change
1	No state change while enabled
2	State change if reset is called

Also see about this

- P-0-0040 Additional drive status word [▶ 216]
- S-0-0099 Reset class 1 diagnostic (pc) [▶ 84]

rsvd

P-0-0350 Error reaction control word / rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	10	6	---

P-0-0351 Error reaction delay time

During the error reaction delay time the NC has the possibility to stop the axis. If the time is elapsed, the drive stops the axis.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	30.00
Unit	s
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

P-x-0352 Drive halt jerk bipolar

Drive Halt deceleration (S-0-0372) is activated in conjunction with drive Halt jerk if Drive Halt (control word, bit 13 = 1 -> 0) is changed by the control unit.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0 (= no jerk limitation)
Min. Value	0
Default	0
Max. Value	1 073 741 824
Unit	rad/s³
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0352 - P-7-0352.

Also see about this

S-x-0372 Drive Halt acceleration bipolar [▶ 176]

P-x-0353 Emergency stop jerk

When the control unit activates 'Drive OFF' with enable drive bit set (control word, bit 15 = 0, bit 14 = 1) the drive decelerates as best as possible limited by the emergency stop deceleration (S-0-0429) and emergency stop jerk, followed by disabling of the torque at n^{-1}.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	0
Min. Value	0
Default	0 (= no jerk limitation)
Max. Value	1 073 741 824
Unit	rad/s³
Changeable in EtherCATState	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!

This IDN exists as P-0-0353 - P-7-0353.

Also see about this

- S-x-0429 Emergency stop deceleration [▶ 191]

P-0-0354 Standstill window monitoring time

The drive signals 'standstill' if the actual velocity is for the given time in the standstill window (S-0-0124 [▶ 112]).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	2
Min. Value	0.00
Default	0.00
Max. Value	500.00
Unit	ms
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

P-x-0356 Rotor slowdown procedure parameter

This parameter are defining how an induction motors can slowdown in case of an error.

Attributes

Name	Value
Datatype	dec
Data length in bit	448
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Included in the “Parameter Set Switching” function group!
This IDN exists as P-0-0356 - P-7-0356.

Actual length

P-0-0356 Rotor slowdown procedure parameter / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0356 Rotor slowdown procedure parameter / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Data

P-0-0356 Rotor slowdown procedure parameter / Data

Format	Size in bit	Offset in bit	Properties
	416	32	---

rsvd

P-0-0356 Rotor slowdown procedure parameter / rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	32	0	---

Asynchronous Motor (ASM)

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM)

Format	Size in bit	Offset in bit	Properties
	192	32	---

Available for

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Available for

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Error reaction
1	Error reaction and Uf control: if |v| < v_standstill, with time limitation
2	Error reaction and Uf control: if |v| < v_standstill, without time limitation

Command mode

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Command mode

Format	Size in bit	Offset in bit	Properties
Enum	16	16	---

Value	Description
0	DC brake (current level P-0-0093)
1	DC brake (current level S-0-0080)
2	DC brake (current level P-x-0356.ASM.CurrentLevel)

Also see about this

- S-0-0080 Torque command value [▶ 73]
- P-x-0093 Configured channel current [▶ 291]
- P-x-0356 Rotor slowdown procedure parameter [▶ 703]

Current level

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Current level

Format	Size in bit	Offset in bit	Properties
UINT	16	32	---

Unit: %

Current slope

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Current slope

Format	Size in bit	Offset in bit	Properties
UINT	16	48	---

Unit: % / ms

Wait time before braking

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Wait time before braking

Format	Size in bit	Offset in bit	Properties
UINT	16	64	---

Unit: ms

First phase activation time with f=f1

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / First phase activation time with f=f1

Datatype	Size in bit	Offset in bit	Properties
UINT	16	80	---

Unit: ms

Rotary field frequency f1

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Rotary field frequency f1

Format	Size in bit	Offset in bit	Properties
UINT	16	96	---

Unit: Hz

Rotor slowdown mode

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Rotor slowdown mode

Format	Size in bit	Offset in bit	Properties
UINT	16	112	---

Value	Explication
0	Without changing the direction of rotary field
1	With changing the direction of rotary field

Second phase activation time with f=0Hz

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Second phase activation time with f=0Hz

Datatype	Size in bit	Offset in bit	Properties
UINT	16	128	---

Unit: ms

Wait time after braking

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / Wait time after braking

Format	Size in bit	Offset in bit	Properties
UINT	16	144	---

Unit: ms

rsvd1

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / rsvd1

Format	Size in bit	Offset in bit	Properties
UINT	16	160	---

rsvd2

P-0-0356 Rotor slowdown procedure parameter / Asynchronous Motor (ASM) / rsvd2

Datatype	Size in bit	Offset in bit	Properties
UINT	16	176	---

Synchronous Motor (SM)

P-0-0356 Rotor slowdown procedure parameter / Synchronous Motor (SM)

Format	Size in bit	Offset in bit	Properties
	192	224	---

P-0-0360 Parameter set prearrangement

This parameter defines the available data sets for the parameter switch procedure. 0: No parameter switching is possible, 1: Parameter set 0 and 1 is available, 7: Parameter set 0, 1 ... 7 is available.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	7
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

- S-0-0217 Parameter set preselection [▶ 155]
- S-0-0216 Switch parameter set (pc) [▶ 154]

P-0-0361 Parameter set configuration

This list defines the IDNs included in the parameter switch procedure.

Attributes

Name	Value
Datatype	idn
Data length in bit	592
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0361-Parameter set configuration / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0361-Parameter set configuration / Max length

Datatype	Size in bit	Offset in bit
UINT	16	16

Configured IDNs

P-0-0361-Parameter set configuration / Configured IDNs

Format	Size in bit	Offset in bit
	560	32

P-0-0400 Hardware enable configuration

This parameter configures a digital input as hardware enable.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Configuration

P-0-0400-Hardware enable configuration / Configuration

Format	Size in bit	Offset in bit
Enum	2	0

Value	Description
0	No hardware enable
1	High active

rsvd

P-0-0400-Hardware enable configuration / rsvd

Format	Size in bit	Offset in bit
Array of UINT	1	2

Input number

P-0-0400-Hardware enable configuration / Input number

Format	Size in bit	Offset in bit
Enum	5	3

Value	Description
0	Digital input 0
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7

Disable reaction

P-0-0400-Hardware enable configuration / Disable reaction

Format	Size in bit	Offset in bit
Enum	3	8

Value	Description
0	Torque off
1	Slow down according to P-x-0356
2	Emergency Ramp S-0-0429
3	Halt Ramp S-0-0372

Diagnostic

P-0-0400-Hardware enable configuration / Diagnostic

Datatype	Size in bit	Offset in bit
	2	11

Value	Description
0	Error
3	Silent

rsvd

P-0-0400-Hardware enable configuration / rsvd

Datatype	Size in bit	Offset in bit
Array of UINT	3	13

P-0-0401 Position limit switch configuration

This parameter configures digital inputs as positive and negative limit switches.

Attributes

Name	Value
Datatype	binary
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Positive limit switch

P-0-0401-Position limit switch configuration / Positive limit switch

Format	Size in bit	Offset in bit
Enum	16	0

Configuration

P-0-0401-Position limit switch configuration / Positive limit switch / Configuration

Format	Size in bit	Offset in bit
Enum	3	0

Value	Description
0	No limit switch
1	Normally closed
2	Normally open

Limit switch reaction

P-0-0401-Position limit switch configuration / Positive limit switch / Limit switch reaction

Format	Size in bit	Offset in bit
Enum	3	3

Value	Description
0	E-Stop with a C1D error
1	E-Stop with a C2D warning
2	Axis halt with a C2D warning

rsvd

P-0-0401-Position limit switch configuration / Positive limit switch / rsvd

Format	Size in bit	Offset in bit
Array of UINT	2	6

Input number

P-0-0401-Position limit switch configuration / Positive limit switch / Input number

Format	Size in bit	Offset in bit
Enum	8	8

Value	Description
0	Digital input 0
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7

Negative limit switch

P-0-0401-Position limit switch configuration / Negative limit switch

Format	Size in bit	Offset in bit
Enum	16	16

Configuration

P-0-0401-Position limit switch configuration / Negative limit switch / Configuration

Format	Size in bit	Offset in bit
Enum	3	0

Value	Description
0	No limit switch
1	Normally closed
2	Normally open

Limit switch reaction

P-0-0401-Position limit switch configuration / Negative limit switch / Limit switch reaction

Format	Size in bit	Offset in bit
Enum	3	3

Value	Description
0	E-Stop with a C1D error
1	E-Stop with a C2D warning
2	Axis halt with a C2D warning

rsvd

P-0-0401-Position limit switch configuration / Negative limit switch / rsvd

Format	Size in bit	Offset in bit
Array of UINT	2	6

Input number

P-0-0401-Position limit switch configuration / Negative limit switch / Input number

Format	Size in bit	Offset in bit
Enum	8	8

Value	Description
0	Digital input 0
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7

P-0-0402 Ready to operate configuration

A configurable digital output can signal the drive internal ready to operate (RTO) state. In case of a configured digital input the internal RTO state is logical AND combined with the input to build the RTO digital output. A daisy chain of serval drives can build a common RTO.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Ready to operate output

P-0-0402-Ready to operate configuration / Ready to operate output

Format	Size in bit	Offset in bit
Enum	8	0

Configuration

P-0-0402-Ready to operate configuration / Ready to operate output / Configuration

Format	Size in bit	Offset in bit
Enum	3	0

Value	Description
0	No RTO output
1	High active

Output number

P-0-0402-Ready to operate configuration / Ready to operate output / Output number

Format	Size in bit	Offset in bit
Enum	5	3

Value	Description
7	Digital output 7

Ready to operate input

P-0-0402-Ready to operate configuration / Ready to operate input

Format	Size in bit	Offset in bit
Enum	8	8

Configuration

P-0-0402-Ready to operate configuration / Ready to operate input / Configuration

Datatype	Size in bit	Offset in bit
Enum	3	0

Value	Description
0	No RTO input
1	High active

Input number

P-0-0402-Ready to operate configuration / Ready to operate input / Input number

Format	Size in bit	Offset in bit
Enum	5	3

Value	Description
0	Digital input 0
1	Digital input 1
2	Digital input 2
3	Digital input 3
4	Digital input 4
5	Digital input 5
6	Digital input 6
7	Digital input 7

P-x-0451 Current controller settings

Setting a bit is enabling extended functionality of the current controller.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!
This IDN exists as P-0-0451 - P-7-0451.

rsvd1

P-x-0451-Current controller settings / Enable DC link compensation (changed from Rev. 211 in rsvd1)

Datatype	Size in bit	Offset in bit
UINT1	1	0

Control mode

P-X-0451-Current controller settings / Control mode

Format	Size in bit	Offset in bit
Enum	3	1

Value	Description
0	i-control with feedback
1	i-control without feedback
2	U/f control
3	U/f control with independent feedback

Optimized I-part limitation

P-X-0451-Current controller settings / Optimized I-part limitation

Format	Size in bit	Offset in bit
UINT1	1	4

Also see about this

- S-0-0106 Current loop proportional gain 1 [▶ 89]
- S-0-0107 Current control loop integral action time 1 [▶ 90]

Enable acceleration control

P-X-0451-Current controller settings / Enable acceleration control

Datatype	Size in bit	Offset in bit
UINT1	1	5

Enable stall protection

P-X-0451-Current controller settings / Enable stall protection

Format	Size in bit	Offset in bit
UINT1	1	6

Enable slip compensation

P-x-0451-Current controller settings / Enable slip compensation

Format	Size in bit	Offset in bit
UINT1	1	7

Customized1

P-X-0451-Current controller settings / Customized1

Format	Size in bit	Offset in bit
UINT1	1	8

Customized2

P-X-0451-Current controller settings / Customized2

Format	Size in bit	Offset in bit
UINT1	1	9

Current limitation according to motor characteristics

P-X-0451-Current controller settings / Current limitation according to motor characteristics

Format	Size in bit	Offset in bit
UINT1	1	10

Also see about this

- S-0-0383 Motor temperature [▶ 182]

Velocity limitation according to motor characteristics

P-X-0451-Current controller settings / Velocity limitation according to motor characteristics

Format	Size in bit	Offset in bit
UINT1	1	11

Motor characteristics with consideration of neg mains voltage tolerance

P-X-0451-Current controller settings / Motor characteristics with consideration of neg mains voltage tolerance

Format	Size in bit	Offset in bit
UINT1	1	12

rsvd2

P-X-0451-Current controller settings / rsvd (changed from Rev. 211 in rsvd2)

Datatype	Size in bit	Offset in bit
UINT3; from Rev. 210: UINT1	3; from Rev. 210: 1	13

Linear interpolation of S-0-0081 (from Rev. 210)

P-X-0451-Current controller settings / Linear interpolation of S-0-0081

Datatype	Size in bit	Offset in bit
Enum	1	14

Value	Description
0	No
1	Yes

rsvd (from Rev. 210)

P-X-0451-Current controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	15

P-0-0452 Current controller control word

This parameter displays the internal control word of the current controller and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

Internal control word active

P-0-0452-Current controller control word active/ Internal control word active

Format	Size in bit	Offset in bit
UINT1	1	0

Enable controller

P-0-0452-Current controller control word / Enable

Format	Size in bit	Offset in bit
UINT1	1	1

Operation mode

P-0-0452-Current controller control word / Operation mode

Datatype	Size in bit	Offset in bit
Enum	3	2

Value	Description
0	standard

Command value source

P-0-0452-Current controller control word / Command value source

Datatype	Size in bit	Offset in bit
Enum	4; from Rev. 210: 6	5

Value	Description
0	i_set=0
1	v-ctrl
2	IDN S-0-0080 (torque command value)
4	Internal
32	from Rev. 210: IDN S-0-0909

Stop request

P-0-0452-Current controller control word / Stop request

Format	Size in bit	Offset in bit
UINT1	1	11

EStop request

P-0-0452-Current controller control word / EStop request

Format	Size in bit	Offset in bit
UINT1	1	12

Enable field weakening

P-0-0452-Current controller control word / Enable field weakening

Format	Size in bit	Offset in bit
UINT1	1	13

Enable acc feed forward

P-0-0452-Current controller control word / Enable acc feed forward

Datatype	Size in bit	Offset in bit
UINT1	1	14

P-0-0453 Current controller status word

This read only parameter provides the internal state of the current controller and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

Control word is active

P-0-0453-Current controller status word / Crtl word active

Format	Size in bit	Offset in bit
UINT1	1	0

Controller ready to enable

P-0-0453-Current controller status word / Ready to enable

Format	Size in bit	Offset in bit
UINT1	1	1

Actual current greater than I nominal

P-0-0453-Current controller status word / i(t) greater than i_nom

Format	Size in bit	Offset in bit
UINT1	1	2

Actual current greater than I peak

P-0-0453-Current controller status word / i(t) greater than i_peak

Format	Size in bit	Offset in bit
UINT1	1	3

Current reduction active

P-0-0453-Current controller status word / i reduction active

Format	Size in bit	Offset in bit
UINT1	1	4

Also see about this

- S-0-0080 Torque command value [▶ 73]

Max output voltage reached

P-0-0453-Current controller status word / u max reached

Format	Size in bit	Offset in bit
UINT1	1	5

Field weakening active

P-0-0453-Current controller status word / Field weakening active

Datatype	Size in bit	Offset in bit
	1	6

Also see about this

- P-0-0455 Field weakening parameter [▶ 726]

rsvd

P-0-0453-Current controller status word / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	7

Current limitation active

P-0-0453-Current controller status word / Current limitation active

Format	Size in bit	Offset in bit
UINT 1	1	8

Command value positive

P-0-0453-Current controller status word / Cmd move positive

Format	Size in bit	Offset in bit
UINT1	1	9

Command value negative

P-0-0453-Current controller status word / Cmd move negative

Format	Size in bit	Offset in bit
UINT1	1	10

'Torque off' active

P-0-0453-Current controller status word / Torque off active

Datatype	Size in bit	Offset in bit
UINT1	1	11

Switching frequency reduced to 4kHz

P-0-0453-Current controller status word / Switching frequency 4kHz active

Format	Size in bit	Offset in bit
UINT1	1	12

Also see about this

- P-0-0010 Feature flags [▶ 212]

Phase clamping active

P-0-0453-Current controller status word / Phase clamp active

Format	Size in bit	Offset in bit
UINT1	1	13

Also see about this

- P-0-0010 Feature flags [▶ 212]

Shorted coils or Dc brake active (from Rev. 210)

P-0-0453-Current controller status word / Shorted coils or Dc brake active

Datatype	Size in bit	Offset in bit
UINT1	1	14

Also see about this

- P-0-0010 Feature flags [▶ 212]

Motor current reduction active (from Rev. 210)

P-0-0453-Current controller status word / Motor current reduction active

Datatype	Size in bit	Offset in bit
UINT1	1	15

Also see about this

- P-0-0010 Feature flags [▶ 212]

P-0-0454 Effective torque command value

This IDN is providing the torque command value after torque limiting. The scaling is according to P-0-0094 “Configured channel peak torque”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Involved IDN´s

P-0-0094 [▶ 300] and S-0-0084 [▶ 77]

P-0-0455 Field weakening parameter

This IDN can be used con configure field weakening for permanent magnet synchronous motors to achieve higher speeds.

Attributes

Name	Value
Datatype	udec
Data length in bit	160
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0455 Field weakening parameter / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0455 Field weakening parameter / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Field weakening parameter

P-0-0455 Field weakening parameter / Field weakening parameter

Format	Size in bit	Offset in bit	Properties
	128	32	---

Mode

P-0-0455 Field weakening parameter / Mode

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Explication
0	Off
1	On

reserved

P-0-0455 Field weakening parameter / reserved

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Min voltage

P-0-0455 Field weakening parameter / Min voltage

Format	Size in bit	Offset in bit	Properties
UINT	16	32	---

Max voltage

P-0-0455 Field weakening parameter / Max voltage

Format	Size in bit	Offset in bit	Properties
UINT	16	48	---

Max current for fieldweakening

P-0-0455 Field weakening parameter / Max current for fieldweakening

Format	Size in bit	Offset in bit	Properties
UDINT	32	64	---

Unit: A

Max velocity for fieldweakening

P-0-0455 Field weakening parameter / Max velocity for fieldweakening

Format	Size in bit	Offset in bit	Properties
UDINT	32	96	---

Unit: rpm

P-0-0456 Actual motor current phase U

This IDN is providing the actual motor current of phase U. The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	PreOp
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282] and P-0-0459 [▶ 731]

P-0-0457 Actual motor current phase V

This IDN is providing the actual motor current of phase V. The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282]

P-0-0458 Actual motor current phase W

This IDN is providing the actual motor current of phase W. The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282]

P-0-0459 Actual torque / force generating current

This IDN is providing the actual value of the torque / force producing current (q-component). The scaling is according to P-0-0092 'Configured channel peak current'.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282] and P-0-0456 [▶ 739]

Also see about this

- P-0-0461 Actual absolute current [▶ 733]

P-0-0460 Actual flux generating current

This IDN is providing the actual value of the flux generating current (d component). The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282]

Also see about this

- P-0-0461 Actual absolute current [▶ 733]
- P-0-0361 Parameter set configuration [▶ 708]

P-0-0461 Actual absolute current

This IDN is providing the actual value of the motor current (sqrt(I_d^2+I_q^2)). The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282]

Also see about this

- P-0-0460 Actual flux generating current [▶ 732]
- P-0-0459 Actual torque / force generating current [▶ 731]

P-0-0462 Actual peak current limit

This IDN is providing the actual peak current limit. Usually the value is 1000 (100.0%). To protect motor and drive I²T can reduce the peak current limit to lower values. The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0092 [▶ 282]

P-0-0463 Actual current limit

This IDN is providing the actual current limit. Usually the value is 1000 (100.0%). To protect motor and drive I2T can reduce the current limit to lower values. The scaling is according to P-0-0092 ´Configured channel peak current´.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0464 Sensorless control

This IDN can be used to configure sensorless control of permanent magnet synchronous motors.

Attributes

Name	Value
Datatype	udec
Data length in bit	256
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0514 Velocity observer [▶ 759]

Actual length

P-0-0464 Sensorless control / Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	---

Max length

P-0-0464 Sensorless control / Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	---

Sensorless control parameter

P-0-0464 Sensorless control / Sensorless control parameter

Format	Size in bit	Offset in bit	Properties
	224	32	---

Mode

P-0-0464 Sensorless control / Mode

Format	Size in bit	Offset in bit	Properties
Enum	16	0	---

Value	Description
0	Off
1	SM sensorless FOC

Adaptive gain

P-0-0464 Sensorless control / Adaptive gain

Format	Size in bit	Offset in bit	Properties
INT	16	16	---

Min bandwidth

P-0-0464 Sensorless control / Min bandwidth

Datatype	Size in bit	Offset in bit	Properties
UINT	16	32	---

Max bandwidth

P-0-0464 Sensorless control / Max bandwidth

Format	Size in bit	Offset in bit	Properties
UINT	16	48	---

Correction factor Iq to Acc

P-0-0464 Sensorless control / Adaptive gain

Format	Size in bit	Offset in bit	Properties
UINT	16	64	---

Damping

P-0-0464 Sensorless control / Damping

Format	Size in bit	Offset in bit	Properties
UINT	16	80	---

Starting current command

P-0-0464 Sensorless control / Starting current command

Format	Size in bit	Offset in bit	Properties
INT	16	96	---

rsvd

P-0-0464 Sensorless control / rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	16	112	---

Threshold speed 1

P-0-0464 Sensorless control / Threshold speed 1

Datatype	Size in bit	Offset in bit	Properties
UINT	32	128	---

Threshold speed 2

P-0-0464 Sensorless control / Threshold speed 2

Format	Size in bit	Offset in bit	Properties
UINT	32	160	---

rsvd

P-0-0464 Sensorless control / rsvd

Format	Size in bit	Offset in bit	Properties
Array of UINT	32	192	---

P-0-0465 Effective current command value

This IDN is providing the command value of the torque producing current after limiting. The scaling is according to P-0-0092 “Configured channel peak current”.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	
Default	0.0
Max. Value	
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

For further information please look into the involved IDN:

P-0-0092 [▶ 282] and P-0-0459 [▶ 731]

P-0-0501 Velocity controller settings

Setting a bit is enabling extended functionality of the velocity controller.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Linear interpolation of S-0-0036 and S-0-0037

P-0-0501 Velocity controller settings / Linear interpolation of S-0-0036 and S-0-0037

Format	Size in Bit	Offset in bit
Enum	1	0

Value	Description
0	No
1	Yes

rsvd

P-0-0501-Velocity controller settings / Velocity controller settings

Datatype	Size in bit	Offset in bit
UINT1	1	1

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	2

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	3

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	4

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	5

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	6

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	7

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	8

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	9

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	10

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	11

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	12

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	13

rsvd

P-0-0501-Velocity controller settings / rsvd

Datatype	Size in bit	Offset in bit
UINT1	1	14

P-0-0502 Velocity controller control word

This parameter displays the internal control word of the velocity controller and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

rsvd1

P-0-0502-Velocity controller control word / rsvd1

Format	Size in bit	Offset in bit
UINT1	1	0

Enable

P-0-0502-Velocity controller control word / Enable

Format	Size in bit	Offset in bit
UINT1	1	1

Operation mode

P-0-0502-Velocity controller control word / Operation mode

Format	Size in bit	Offset in bit
Enum	3	2

Value	Description
0	standard

Command value source

P-0-0502-Velocity controller control word / Command value source

Format	Size in bit	Offset in bit
Enum	4	5

Value	Description
0	v_set=0
1	position ctrl
2	v_set=IDN S-0-0036
4	internal

Stop request

P-0-0502-Velocity controller control word / Stop request

Format	Size in bit	Offset in bit
UINT1	1	9

EStop request

P-0-0502-Velocity controller control word / EStop request

Format	Size in bit	Offset in bit
UINT1	1	10

Feedback value source

P-0-0502-Velocity controller control word / Feedback value source

Format	Size in bit	Offset in bit
Enum	3	11

Value	Description
0	Feedback 1
1	Feedback 2

Enable velocity feed forward

P-0-0502-Velocity controller control word / Enable velocity feed forward

Datatype	Size in bit	Offset in bit
UINT1	1	14

EStop request with max dec

P-0-0502-Velocity controller control word / EStop request with max dec

Format	Size in bit	Offset in bit
UINT1	1	15

P-0-0503 Velocity controller status word

This read only parameter provides the internal state of the velocity controller and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

Control word active

P-0-0503-Velocity controller status word / Control word active

Format	Size in bit	Offset in bit
UINT1	1	0

Ready to enable

P-0-0503-Velocity controller status word / Ready to enable

Format	Size in bit	Offset in bit
UINT1	1	1

Positive direction enabled

P-0-0503-Velocity controller status word / Positive direction enabled

Format	Size in bit	Offset in bit
UINT1	1	2

Negative direction enabled

P-0-0503-Velocity controller status word / Negative direction enabled

Datatype	Size in bit	Offset in bit
UINT1	1	3

Acceleration control active

P-0-0503-Velocity controller status word / Acceleration control active

Format	Size in bit	Offset in bit
UINT1	1	4

v limitation active

P-0-0503-Velocity controller status word / v limitation active

Datatype	Size in bit	Offset in bit
UINT1	1	5

v is less or equal v_0

P-0-0503-Velocity controller status word / v is less or equal v_0

Format	Size in bit	Offset in bit
UINT1	1	6

Moving positive

P-0-0503-Velocity controller status word / Moving positive

Format	Size in bit	Offset in bit
UINT1	1	7

Moving negative

P-0-0503-Velocity controller status word / Moving negative

Format	Size in bit	Offset in bit
UINT1	1	8

Positive command value

P-0-0503-Velocity controller status word / Positive command value

Format	Size in bit	Offset in bit
UINT1	1	9

Negative command value

P-0-0503-Velocity controller status word / Negative command value

Format	Size in bit	Offset in bit
UINT1	1	10

Stall protection control active

P-0-0503-Velocity controller status word / Stall protection control active

Format	Size in bit	Offset in bit
UINT1	1	11

Standstill reached

P-0-0503-Velocity controller status word / Standstill reached

Format	Size in bit	Offset in bit
UINT1	1	12

Integral limit reached (from Rev. 210)

P-0-0503-Velocity controller status word / Integral limit reached

Datatype	Size in bit	Offset in bit
UINT1	1	13

Velo ctrl output limitation is active (from Rev. 210)

P-0-0503-Velocity controller status word / Velo ctrl output limitation is active

Datatype	Size in bit	Offset in bit
UINT1	1	14

rsvd

P-0-0503-Velocity controller status word / rsvd

Datatype	Size in bit	Offset in bit
UINT3; from Rev. 210: UINT1	3; from Rev. 210: 1	13; from Rev. 210: 15

P-0-0504 Effective velocity command value

This read only IDN provides the internal velocity set point after limitation. Scaling see S-0-0036.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	inc/(1024 ms); from Rev. 210: rev/(2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

For further information please look into the involved IDN:

S-0-036 [▶ 58], S-0-040 [▶ 60], S-0-045 [▶ 63], S-0-046 [▶ 64]

P-0-0505 Velocity controller output

This read only IDN provides the actual velocity controller output. Scaling is according to P-0-094

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

P-0-0094 [▶ 300] and P-0-0454 [▶ 725]

P-0-0508 Torque / force feed forward

The position loop following error during acceleration can be reduced by using the calculated torque / force feed forward signal. Scaling is according to P-0-0094.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-
Default	0.0
Max. Value	-
Unit	%
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0348 [▶ 174], P-0-094 [▶ 300], P-0-0454 [▶ 725] and P-0-0557 [▶ 795]

Also see about this

- P-0-0097 Motor status word [▶ 302]

P-0-0511 Velocity filter 1: Low pass time constant

Internal Parameter!

This IDN isn´t intended for use by end users!

Configuration of the velocity error-signal low pass filter time constant. Setting P-0-0512 to a value greater than zero turns the low pass filter into a phase lag compensator.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	3
Min. Value	0.000
Default	0.000
Max. Value	65.000
Unit	ms
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0512 Velocity filter 1: Gain at infinite frequency [▶ 752]

P-0-0512 Velocity filter 1: Gain at infinite frequency

Internal Parameter!

This IDN isn´t intended for use by end users!

Setting this gain to a value greater than zero turns the velocity error-signal low pass filter P-0-0511 into a phase lag compensator.

Attributes

Name	Value
Datatype	udec
Data length in bit	32
Decimal point	8
Min. Value	0.00000000
Default	0.00000000
Max. Value	0.99999999
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0511 Velocity filter 1: Low pass time constant [▶ 751]

P-0-0513 Current command value filter 0

To optimize the velocity loop tuning up to 4 current command value filters can be configured.

Attributes

Name	Value
Datatype	udec
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Also see about this

- S-x-0092 Bipolar torque limit value [▶ 81]
- P-0-0040 Additional drive status word [▶ 216]

Actual length

P-0-0513-Current command value filter 0 / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0513-Current command value filter 0 / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Current command value filter

P-0-0513-Current command value filter 0 / Current command value filter

Datatype	Size in bit	Offset in bit
	512	32

Version

P-0-0513-Current command value filter 0 / Current command value filter / Version

Format	Size in bit	Offset in bit
UINT	16	0

nRsvd1

P-0-0513-Current command value filter 0 / Current command value filter / nRsvd1

Format	Size in bit	Offset in bit
UINT	16	16

Properties

Name	Value
UIVisible	False

Filter type

P-0-0513-Current command value filter 0 / Current command value filter / Filter type

Format	Size in bit	Offset in bit
Enum	16	32

Value	Description
0	No filter
1	Low pass filter 1.order
2	Phase correction filter 1.order
3	Low pass filter 2.order
4	Phase correction filter 2.order
5	Notch filter

Properties

Name	Value
UIReadonly	True

nRsvd2

P-0-0513-Current command value filter 0 / Current command value filter / nRsvd2

Format	Size in bit	Offset in bit
UINT	16	48

Table 126: Properties

Name	Value
UIVisible	False

Filter parameter

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter

Datatype	Size in bit	Offset in bit
	192	64

Properties

Name	Value
UIReadonly	True

Low pass frequency

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter / Low pass frequency

Datatype	Size in bit	Offset in bit
UDINT	32	0

Properties

Name	Value
Unit	Hz
Default	3200; from Rev. 210: 500
Min.Value	1; from Rev. 210: 10
Max.Value	600000; from Rev. 210: 4000

Low pass damping

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter / Low pass damping

Datatype	Size in bit	Offset in bit
DINT	32	32

Properties

Name	Value
Default Value	from Rev. 210: 0.50000000
Min.Value	0; from Rev. 210: 0.5000000
Max.Value	0.99999999
Decimal point	8

High pass frequency

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter / High pass frequency

Datatype	Size in bit	Offset in bit
UDINT	32	64

Properties

Name	Value
Unit	Hz
Default	16000; from Rev. 210: 1000
Min.Value	1; from Rev. 210: 10
Max.Value	600000; from Rev. 210: 4000

High pass damping

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter / High pass damping

Datatype	Size in bit	Offset in bit
DINT	32	96

Properties

Name	Value
Default Value	from Rev. 210: 50000000
Min.Value	0; from Rev. 210: 5000000
Max.Value	99999999
Decimal pointn	8

nRsvd1

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter / nRsvd1

Format	Size in bit	Offset
UDINT	32	128

Properties

Name	Value
UIVisible	False

nRsvd2

P-0-0513-Current command value filter 0 / Current command value filter / Filter parameter / nRsvd2

Format	Size in bit	Offset
UDINT	32	160

Properties

Name	Value
UIVisible	False

Filter coefficient

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient

Datatype	Size in bit	Offset in bit
	256	256

QMath Factor

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / QMath Factor

Format	Size in bit	Offset
UINT	16	0

Properties

Name	Value
DefaultValue	30
MinValue	1
MaxValue	30

nRsvd1

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / nRsvd1

Format	Size in bit	Offset
UINT	16	16

Properties

Name	Value
UIVisible	False

b0

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / b0

Format	Size in bit	Offset
DINT	32	32

Properties

Name	Value
Default	1073741824

b1

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / b1

Format	Size in bit	Offset
DINT	32	64

b2

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / b2

Format	Size in bit	Offset
DINT	32	96

a1

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / a1

Format	Size in bit	Offset
DINT	32	128

a2

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / a2

Format	Size in bit	Offset
DINT	32	160

nRsvd2

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / nRsvd2

Format	Size in bit	Offset
DINT	32	192

Properties

Name	Value
UIVisible	False

nRsvd3

P-0-0513-Current command value filter 0 / Current command value filter / Filter coefficient / nRsvd3

Format	Size in bit	Offset
DINT	32	224

Properties

Name	Value
UIVisible	False

P-0-0514 Velocity observer

The velocity observer generates due to a drive internal motor model a velocity feedback signal without delay due to numerical differentiation. In addition the generated velocity signal is less noisy.

Attributes

Name	Value
Datatype	udec
Data length in bit	128
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Actual length

P-0-0514-Velocity observer / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0514-Velocity observer / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Velocity observer

P-0-0514-Velocity observer / Velocity observer

Datatype	Size in bit	Offset in bit
	96	32

Mode

P-0-0514-Velocity observer / Velocity observer / Mode

Datatype	Size in bit	Offset in bit
Enum	16	0

Value	Description
0	Off
1	Basic
2	from Rev. 210: Advanced

nRsvd1

P-0-0514-Velocity observer / Velocity observer / nRsvd1

Format	Size in bit	Offset in bit
UINT	16	16

Table 127: Properties

Name	Value
UIVisible	False

Bandwidth

P-0-0514-Velocity observer / Velocity observer / Bandwidth

Format	Size in bit	Offset in bit
UINT	16	32

Table 128: Properties

Name	Value
UnitName	Hz
DefaultValue	500
MinValue	25
MaxValue	1000

Correction factor Iq to Acc

P-0-0514-Velocity observer / Velocity observer / Correction factor Iq to Acc

Format	Size in bit	Offset in bit
UINT	16	48

Table 129: Properties

Name	Value
DefaultValue	1000
MinValue	0
MaxValue	2000
DecimalPlaces	3

Damping

P-0-0514-Velocity observer / Velocity observer / Damping

Datatype	Size in bit	Offset in bit
UINT	16	64

Table 130: Properties

Name	Value
DefaultValue	700
MinValue	0; from Rev. 210: 200
MaxValue	1000
DecimalPlaces	3

nRsvd1

P-0-0514-Velocity observer / Velocity observer / nRsvd1

Format	Size in bit	Offset in bit
UINT	16	80

Table 131: Properties

Name	Value
UIVisible	False

P-0-0515 Current command value filter 1

To optimize the velocity loop tuning up to 4 current command value filters can be configured.

Attributes

Name	Value
Datatype	udec
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

- S-x-0092 Bipolar torque limit value [▶ 81]
- P-0-0040 Additional drive status word [▶ 216]

Actual length

P-0-0515-Current command value filter 1 / Actual length

Format	Size in bit	Offset in bit
UINT	16	0

Max length

P-0-0515-Current command value filter 1 / Max length

Format	Size in bit	Offset in bit
UINT	16	16

Current command value filter

P-0-0515-Current command value filter 1 / Current command value filter

Format	Size in bit	Offset in bit
	512	32

Version

P-0-0515-Current command value filter 1 / Current command value filter / Version

Datatype	Size in bit	Offset in bit
UINT	16	0

nRsvd1

P-0-0515-Current command value filter 1 / Current command value filter / nRsvd1

Format	Size in bit	Offset in bit
UINT	16	16

Table 132: Properties

Name	Value
UIVisible	False

Filter type

P-0-0515-Current command value filter 1 / Current command value filter / Filter type

Format	Size in bit	Offset in bit
	16	32

Value	Description
0	No filter
1	Low pass filter 1.order
2	Phase correction filter 1.order
3	Low pass filter 2.order
4	Phase correction filter 2.order
5	Notch filter

Table 133: Properties

Name	Value
UIReadonly	True

nRsvd2

P-0-0515-Current command value filter 1 / Current command value filter / nRsvd2

Format	Size in bit	Offset in bit
UINT	16	48

Table 134: Properties

Name	Value
UIVisible	False

Filter parameter

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter

Format	Size in bit	Offset in bit
	192	64

Table 135: Properties

Name	Value
UIReadonly	True

Low pass frequency

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter / Low pass frequency

Format	Size in bit	Offset in bit
UDINT	32	0

Table 136: Properties

Name	Value
UnitName	Hz
DefaultValue	3200
MinValue	1
MaxValue	600000

Low pass damping

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter / Low pass damping

Format	Size in bit	Offset in bit
DINT	32	32

Table 137: Properties

Name	Value
MinValue	0
MaxValue	99999999
DecimalPlaces	8

High pass frequency

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter / High pass frequency

Format	Size in bit	Offset in bit
UDINT	32	64

Table 138: Properties

Name	Value
UnitName	Hz
DefaultValue	16000
MinValue	1
MaxValue	600000

High pass damping

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter / High pass damping

Format	Size in bit	Offset in bit
DINT	32	96

Table 139: Properties

Name	Value
MinValue	0
MaxValue	99999999
DecimalPlaces	8

nRsvd1

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter / nRsvd1

Format	Size in bit	Offset in bit
UDINT	32	128

Table 140: Properties

Name	Value
UIVisible	False

nRsvd2

P-0-0515-Current command value filter 1 / Current command value filter / Filter parameter / nRsvd2

Format	Size in bit	Offset in bit
UDINT	32	160

Table 141: Properties

Name	Value
UIVisible	False

Filter coefficient

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient

Format	Size in bit	Offset in bit
	256	256

QMath Factor

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / QMath Factor

Format	Size in bit	Offset in bit
UINT	16	0

Table 142: Properties

Name	Value
DefaultValue	30
MinValue	1
MaxValue	30

nRsvd1

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / nRsvd1

Format	Size in bit	Offset in bit
UINT	16	16

Table 143: Properties

Name	Value
UIVisible	False

b0

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / b0

Format	Size in bit	Offset in bit
DINT	32	32

Table 144: Properties

Name	Value
DefaultValue	1073741824

b1

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / b1

Format	Size in bit	Offset in bit
DINT	32	64

b2

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / b2

Format	Size in bit	Offset in bit
DINT	32	96

a1

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / a1

Format	Size in bit	Offset in bit
DINT	32	128

a2

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / a2

Format	Size in bit	Offset in bit
DINT	32	160

nRsvd2

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / nRsvd2

Format	Size in bit	Offset in bit
DINT	32	192

Table 145: Properties

Name	Value
UIVisible	False

nRsvd3

P-0-0515-Current command value filter 1 / Current command value filter / Filter coefficient / nRsvd3

Format	Size in bit	Offset in bit
DINT	32	224

Table 146: Properties

Name	Value
UIVisible	False

P-0-0516 Current command value filter 2

To optimize the velocity loop tuning up to 4 current command value filters can be configured.

Attributes

Name	Value
Datatype	udec
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

- S-x-0092 Bipolar torque limit value [▶ 81]
- P-0-0040 Additional drive status word [▶ 216]

Actual length

P-0-0516-Current command value filter 2 / Actual length

Format	Data length	Offset in bit
UINT	16	0

Max length

P-0-0516-Current command value filter 2 / Max length

Format	Data length	Offset in bit
UINT	16	16

Current command value filter

P-0-0516-Current command value filter 2 / Current command value filter

Format	Data length	Offset in bit
	512	32

Version

P-0-0516-Current command value filter 2 / Current command value filter / Version

Format	Data length	Offset in bit
UINT	16	0

nRsvd1

P-0-0516-Current command value filter 2 / Current command value filter / nRsvd1

Format	Data length	Offset in bit
UINT	16	16

Properties

Name	Value
UIVisible	False

Filter type

P-0-0516-Current command value filter 2 / Current command value filter / Filter type

Format	Data length	Offset in bit
Enum	16	32

Value	Description
0	No filter
1	Low pass filter 1.order
2	Phase correction filter 1.order
3	Low pass filter 2.order
4	Phase correction filter 2.order
5	Notch-Filter

Properties

Name	Value
UIReadonly	True

nRsvd2

P-0-0516-Current command value filter 2 / Current command value filter / nRsvd2

Format	Data length	Offset in bit
UINT	16	48

Properties

Name	Value
UIVisible	False

Filter parameter

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter

Format	Data length	Offset in bit
	192	64

Table 147: Properties

Name	Value
UIReadonly	True

Low pass frequency

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter / Low pass frequency

Format	Data length	Offset in bit
UDINT	32	0

Properties

Name	Value
Unit	Hz
Value	3200
Min.Value	1
Max.Value	600000

Low pass damping

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter / Low pass damping

Format	Data length	Offset in bit
DINT	32	32

Table 148: Properties

Name	Value
Min.Value	0
Max.Value	99999999
Decimal point	8

High pass frequency

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter / High pass frequency

Format	Data length	Offset in bit
UDINT	32	64

Table 149: Properties

Name	Value
Unit	Hz
Default	16000
Min.Value	1
Max.Value	600000

High pass damping

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter / High pass damping

Datatype	Data length	Offset in bit
DINT	32	96

Properties

Name	Value
Min.Value	0
Max.Value	99999999
Decimal point	8

nRsvd1

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter / nRsvd1

Format	Data length	Offset in bit
UDINT	32	128

Table 150: Properties

Name	Value
UIVisible	False

nRsvd2

P-0-0516-Current command value filter 2 / Current command value filter / Filter parameter / nRsvd2

Format	Data length	Offset in bit
UDINT	32	160

Table 151: Properties

Name	Value
UIVisible	False

Filter coefficient

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient

Datatype	Data length	Offset in bit
	256	256

QMath Factor

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / QMath Factor

Der "QMath factor" bestimmt die Skalierung der Filtereingangsgröße.

Format	Data length	Offset in bit
UINT	16	0

Properties

Name	Value
Default	30
Min.Value	1
Max.Value	30

nRsvd1

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / nRsvd1

Format	Data length	Offset in bit
UINT	16	16

Table 152: Properties

Name	Value
UIVisible	False

b0

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / b0

Format	Data length	Offset in bit
DINT	32	32

Properties

Name	Value
Default	1073741824

b1

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / b1

Datatype	Data length	Offset in bit
DINT	32	64

b2

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / b2

Format	Data length	Offset in bit
DINT	32	96

a1

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / a1

Format	Data length	Offset in bit
DINT	32	128

a2

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / a2

Format	Data length	Offset in bit
DINT	32	160

nRsvd2

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / nRsvd2

Format	Data length	Offset in bit
DINT	32	192

Properties

Name	Value
UIVisible	Falsch

nRsvd3

P-0-0516-Current command value filter 2 / Current command value filter / Filter coefficient / nRsvd3

Format	Data length	Offset in bit
DINT	32	224

Properties

Name	Value
UIVisible	False

P-0-0517 Current command value filter 3

To optimize the velocity loop tuning up to 4 current command value filters can be configured.

Attributes

Name	Value
Datatype	udec
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-0517-Current command value filter 3 / Actual length

Format	Data length	Offset in bit
UINT	16	0

Max length

P-0-0517-Current command value filter 3 / Max length

Format	Data length	Offset in bit
UINT	16	16

Current command value filter

P-0-0517-Current command value filter 3 / Current command value filter

Format	Data length	Offset in bit
	512	32

Version

P-0-0517-Current command value filter 3 / Current command value filter / Version

Format	Data length	Offset in bit
UINT	16	0

nRsvd1

P-0-0517-Current command value filter 3 / Current command value filter / nRsvd1

Format	Data length	Offset in bit
UINT	16	16

Table 153: Properties

Name	Value
UIVisible	False

Filter type

P-0-0517-Current command value filter 3 / Current command value filter / Filter type

Format	Data length	Offset in bit
Enum	16	32

Value	Description
0	No filter
1	Low pass filter 1.order
2	Phase correction filter 1.order
3	Low pass filter 2.order
4	Phase correction filter 2.order
5	Notch filter

Properties

Name	Value
UIReadonly	True

nRsvd2

P-0-0517-Current command value filter 3 / Current command value filter / nRsvd2

Format	Data length	Offset in bit
UINT	16	48

Properties

Name	Value
UIVisible	False

Filter parameter

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter

Format	Data length	Offset in bit
	192	64

Properties

Name	Value
UIReadonly	True

Low pass frequency

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter / Low pass frequency

Format	Data length	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	Hz
DefaultValue	3200
MinValue	1
MaxValue	600000

Low pass damping

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter / Low pass damping

Format	Data length	Offset in bit
DINT	32	32

Properties

Name	Value
Min.Value	0
Max.Value	99999999
Decimal pointn	8

High pass frequency

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter / High pass frequency

Format	Data length	Offset in bit
UDINT	32	64

Properties

Name	Value
Unit	Hz
Default	16000
Min. Value	1
Max. Value	600000

High pass damping

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter / High pass damping

Format	Data length	Offset in bit
DINT	32	96

Properties

Name	Value
Min.Value	0
Max.Value	99999999
Decimal point	8

nRsvd1

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter / nRsvd1

Datatype	Data length	Offset in bit
UDINT	32	128

Properties

Name	Value
UIVisible	False

nRsvd2

P-0-0517-Current command value filter 3 / Current command value filter / Filter parameter / nRsvd2

Format	Data length	Offset in bit
UDINT	32	160

Properties

Name	Value
UIVisible	False

Filter coefficient

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient

Datatype	Data length	Offset in bit
	256	256

QMath Factor

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / QMath Factor

Format	Data length	Offset in bit
UINT	16	0

Table 154: Properties

Name	Value
Default	30
Min.Value	1
Max.Value	30

nRsvd1

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / nRsvd1

Datatype	Data length	Offset in bit
UINT	16	16

Properties

Name	Value
UIVisible	False

b0

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / b0

Format	Data length	Offset in bit
DINT	32	32

Properties

Name	Value
Default	1073741824

b1

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / b1

Format	Data length	Offset in bit
DINT	32	64

b2

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / b2

Format	Data length	Offset in bit
DINT	32	96

a1

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / a1

Datatype	Data length	Offset in bit
DINT	32	128

a2

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / a2

Format	Data length	Offset in bit
DINT	32	160

nRsvd2

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / nRsvd2

Format	Data length	Offset in bit
DINT	32	192

Properties

Name	Value
UIVisible	False

nRsvd3

P-0-0517-Current command value filter 3 / Current command value filter / Filter coefficient / nRsvd3

Datatype	Data length	Offset in bit
DINT	32	224

Properties

Name	Value
UIVisible	False

P-x-0518 Velocity error monitoring

If the absolute value of the velocity loop error is longer than the specified time larger than the specified velocity window error F2E1 will be generated.

Attributes

Name	Value
Datatype	udec
Data length in bit	160
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Included in the “Parameter Set Switching” function group!
This IDN exists as P-0-0518 - P-7-0518.

Actual length

P-X-0518-Velocity error monitoring / Actual length

Format	Data length	Offset in bit
UINT	16	0

Max length

P-X-0518-Velocity error monitoring / Max length

Format	Data length	Offset in bit
UINT	16	16

Data

P-X-0518-Velocity error monitoring / Data

Datatype	Data length	Offset in bit
	128	32

Mode

P-X-0518-Velocity error monitoring / Data / Mode

Format	Data length	Offset
Enum	16	0

Properties

Value	Description
0	Off
1	Window and Time

Also see about this

- P-0-0354 Standstill window monitoring time [▶ 702]

nRsvd1

P-X-0518-Velocity error monitoring / Data / nRsvd1

Format	Data length	Offset
UINT	16	16

Properties

Name	Value
UIVisible	Falsch

Velocity window

P-X-0518-Velocity error monitoring / Data / Velocity window

Datatype	Data length	Offset in bit
UDINT	32	32

Properties

Name	Value
UnitName	inc/(1024 ms); from Rev. 210: Rev / (2^{30}ms)

Time

P-X-0518-Velocity error monitoring / Data / Time

Format	Data length	Offset
UINT	16	64

Properties

Name	Value
Unit	ms

nRsvd1

P-X-0518-Velocity error monitoring / Data / nRsvd1

Format	Data length	Offset
UINT	16	80

Properties

Name	Value
UIVisible	False

nRsvd2

P-X-0518-Velocity error monitoring / Data / nRsvd2

Format	Data length	Offset
UINT	16	96

Properties

Name	Value
UIVisible	False

nRsvd3

P-X-0518-Velocity error monitoring / Data / nRsvd3

Format	Data length	Offset
UINT	16	112

Properties

Name	Value
UIVisible	False

P-0-0519 Velocity feedback 1 value d/dt

The velocity feedback 1 value can be transferred from the drive to the control unit. The velocity feedback 1 value refers to the motor feedback and is not filtered and calculated by the differentiation of the position feedback 1 value. Scaling is according to S-0-0036.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-2 147 483 648
Default	0
Max. Value	2 147 483 647
Unit	rev/(2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

- P-0-0512 Velocity filter 1: Gain at infinite frequency [▶ 752]

P-0-0523 Velocity controller positive output limit

The configurable positive output limit value limits the velocity controller output (torque command) in the positive direction of rotation. Scaling is according to P-0-0094.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	100.0
Max. Value	100.0
Unit	%
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	from Rev. 210

For further information please look into the involved IDN:

P-0-0094 [▶ 300] and P-0-0524 [▶ 785]

P-0-0524 Velocity controller negative output limit

The configurable negative output limit value limits the velocity controller output (torque command) in the negative direction of rotation. Scaling is according to P-0-0094.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	1
Min. Value	0.0
Default	100.0
Max. Value	100.0
Unit	%
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	MDT
Device parameter	No
Related to interface revision	from Rev. 210

For further information please look into the involved IDN:

P-0-0094 [▶ 300] and P-0-0523 [▶ 784]

P-0-0525 Active load damping

Systems using a high resolution 2nd feedback can use active load damping to improve the velocity control performance in case of compliantly coupled load.

Attributes

Name	Value
Datatype	udec
Data length in bit	128
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Actual length

P-0-0525 Active load damping / Actual length

Format	Data length	Offset in bit
UINT	16	0

Max length

P-0-0525 Active load damping / Max length

Format	Data length	Offset in bit
UINT	16	16

Active load damping

P-0-0525 Active load damping / Active load damping

Format	Data length	Offset in bit
	96	32

Mode

P-0-0525 Active load damping / Mode

Format	Data length	Offset in bit
Enum	16	0

Properties

Value	Description
0	Off
1	On

Also see about this

P-0-0354 Standstill window monitoring time [▶ 702]

Kd

P-0-0525 Active load damping / Kd

Format	Data length	Offset in bit
UINT	16	16

Low pass frequency

P-0-0525 Active load damping / Low pass frequency

Format	Data length	Offset in bit
UINT	16	32

Properties

Name	Value
Unit	Hz

Low pass damping

P-0-0525 Active load damping / Low pass damping

Format	Data length	Offset in bit
UINT	16	48

rsvd

P-0-0525 Active load damping / rsvd

Format	Data length	Offset in bit
Array of UINT	32	64

P-0-0552 Position controller control word

This parameter displays the internal control word of the position controller and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0553 Position controller status word [▶ 790]

rsvd

P-0-0552-Position controller control word / rsvd

Format	Data length	Offset in bit
Array of UINT	1	0

Enable

P-0-0552-Position controller control word / Enable

Format	Data length	Offset in bit
UINT1	1	1

Operation mode

P-0-0552-Position controller control word / Operation mode

Format	Data length	Offset in bit
Enum	3	2

Value	Description
0	standard

Command value source

P-0-0552-Position controller control word / Command value source

Format	Data length	Offset in bit
Enum	3	5

Value	Description
0	IDN S-0-0047 (position command value)
1	internal

Feedback value source

P-0-0552-Position controller control word / Feedback value source

Format	Data length	Offset in bit
Enum	3	8

Value	Description
0	Feedback 1
1	Feedback 2

Calculate v feedforward value

P-0-0552-Position controller control word / Calculate feedforward value

Format	Data length	Offset in bit
UINT1	1	11

reserved

P-0-0552-Position controller control word / reserved

Format	Data length	Offset in bit
UINT4	4	12

P-0-0553 Position controller status word

This parameter displays the internal state of the position controller and can be used for diagnostic purposes.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0552 Position controller control word [▶ 788]

Crtl word active

P-0-0553-Position controller status word / Crtl word active

Format	Data length	Offset in bit
UINT1	1	0

Ready to enable

P-0-0553-Position controller status word / Ready to enable

Format	Data length	Offset in bit
UINT1	1	1

Move positive

P-0-0553-Position controller status word / Move positive

Datatype	Data length	Offset in bit
UINT1	1	2

Move negative

P-0-0553-Position controller status word / Move negaitve

Format	Data length	Offset in bit
UINT1	1	3

rsvd

P-0-0553-Position controller status word / rsvd

Format	Data length	Offset in bit
Array of UINT	12	4

P-0-0554 Effective position command value

This IDN provides the position command value generated by the optional interpolator.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	inc
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

- P-0-0556 Position interpolation type [▶ 794]

P-0-0555 Position command value monitoring window

If a sequence of cyclic transferred position command values (S-0-0047) is showing an impracticable jump the error F324 is reported. The position difference between two samples corresponds to the requested velocity. The monitoring window scaling is configured in percent of S-0-0091 Bipolar velocity limit.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0; from Rev. 210: 200
Max. Value	500
Unit	% of S-x-0091
Changeable in EtherCAT state	In PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

P-0-0556 Position interpolation type

In configurations where the position control loop update time (P-0-0004) is faster than the communication cycle time (S-0-0002) the internal fine-interpolation type can be configured to linear- (0) or cubic-interpolation (1).

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0; from Rev. 210: 1
Max. Value	-
Unit	-
Changeable in EtherCAT state	PreOp
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Value	Description
0	linear
1	cubic

Also see about this

- S-0-0001 Control unit cycle time (TNcyc) [▶ 23]

P-0-0557 Acceleration feed forward filter time constant

A first order lag can be utilized to filter the internal calculated acceleration feed forward signal.

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	3
Min. Value	0.000
Default	0.000
Max. Value	10.000
Unit	ms
Changeable in EtherCAT state	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

For further information please look into the involved IDN:

S-0-0348 [▶ 174] and P-0-0508 [▶ 750]

P-0-0558 Position controller output

This IDN delivers the velocity command from the position controller before adding any feed forward.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	rev / (2^{30} ms)
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	changed from Rev. 210

P-0-0559 Velocity feed forward

The position loop following error at constant speed can be reduced by using the calculated velocity feed forward signal.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	rev/(2^{30} ms)
Changeable in EtherCATState	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-0610 Configurable status word configuration

With the IDN P-0-0611 "Configurable status word" can be a configured operational state of the axis indicated. The indicated operational state is configured with this parameter.

Attributes

Name	Value
Datatype	udec
Data length in bit	224
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	changed from Rev. 210

Also see about this

P-0-0611 Configurable status word [▶ 802]

Actual length

P-0-0610-Configurable status word configuration / Actual length

Format	Data length	Offset in bit
UINT	16	0

Max length

P-0-0610-Configurable status word configuration / Max length

Format	Data length	Offset in bit
UINT	16	16

Data

P-0-0610-Configurable status word configuration / Data

Datatype	Data length	Offset in bit
	192	32

Velocity

P-0-0610-Configurable status word configuration / Data / Velocity

Datatype	Data length	Offset in bit
Enum	64	0

Velocity limit

P-0-0610-Configurable status word configuration / Data / Velocity / Velocity limit

Datatype	Data length	Offset in bit
UDINT	32	0

Properties

Name	Value
UnitName	inc/(1024 ms); from Rev. 210: rev/(2^{30} ms)

Velocity condition

P-0-0610-Configurable status word configuration / Data / Velocity / Velocity condition

Format	Data length	Offset
Enum	16	32

Properties

Value	Description
0	Don't care
1	v > v_limit
2	v < v_limit
3	|v| > v_limit
4	|v| < v_limit

rsvd

P-0-0610-Configurable status word configuration / Data / Velocity / rsvd

Format	Data length	Offset
UINT	16	48

Properties

Name	Value
UIVisible	False

Torque/Force

P-0-0610-Configurable status word configuration / Data / Torque/Force

Format	Data length	Offset in bit
Enum	64	64

Torque/Force limit

P-0-0610-Configurable status word configuration / Data / Torque/Force / Torque/Force limit

Format	Data length	Offset in bit
INT	16	0

Properties

Name	Value
Unit	%
Decimal point	1

rsvd

P-0-0610-Configurable status word configuration / Data / Torque/Force / rsvd

Format	Data length	Offset in bit
Array of UINT	16	16

Properties

Name	Value
UIVisible	False

Torque/Force condition

P-0-0610-Configurable status word configuration / Data / Torque/Force / Torque/Force condition

Datatype	Data length	Offset in bit
Enum	16	32

Properties

Value	Description
0	Don't care
1	T > T_limit
2	T < T_limit
3	|T| > T_limit
4	|T| < T_limit

rsvd

P-0-0610-Configurable status word configuration / Data / Torque/Force / rsvd

Datatype	Data length	Offset in bit
Array of UINT	16	48

Table 155: Properties

Name	Value
UIVisible	False

rsvd

P-0-0610-Configurable status word configuration / Data / rsvd

Datatype	Data length	Offset in bit
UDINT	32	128

Table 156: Properties

Name	Value
UIVisible	False

rsvd

P-0-0610-Configurable status word configuration / Data / rsvd

Datatype	Data length	Offset in bit
UDINT	32	160

Table 157: Properties

Name	Value
UIVisible	False

P-0-0611 Configurable status word

With the IDN P-0-0611 "Configurable status word" can be a configured operational state of the axis indicated. The indicated operational state is configured with this parameter.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0610 Configurable status word configuration [▶ 798]

P-0-0800 Digital output control word

With this parameter the digital drive output can be configured as “user output”. This means that the output can be set and cleared with a cyclic transferred value in IDN P-0-0802.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Also see about this

- P-0-0802 Digital outputs [▶ 807]
- P-0-0401 Position limit switch configuration [▶ 711]

reserved

P-0-0800-Digital output control word / reserved

Format	Data length	Offset in bit
UINT7	7	0

Properties

Name	Value
UIVisible	False

Digital I/O 7

P-0-0800-Digital output control word / Digital I/O 7

Format	Data length	Offset in bit
	1	7

Value	Description
0	unspecified
1	user output (P-0-0802)

reserved

P-0-0800-Digital output control word / reserved

Format	Data length	Offset in bit
USINT	8	8

Properties

Name	Value
UIVisible	False

P-0-0801 Digital inputs, state

This IDN displays the state of the digital drive inputs.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	0
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

P-0-0805 Force digital inputs [▶ 811]

Digital Input 0

P-0-0801-Digital inputs, state / Digital Input 0

Format	Data length	Offset in bit
UINT1	1	0

Digital Input 1

P-0-0801-Digital inputs, state / Digital Input 1

Format	Data length	Offset in bit
UINT1	1	1

Digital Input 2

P-0-0801-Digital inputs, state / Digital Input 2

Datatype	Data length	Offset in bit
UINT1	1	2

Digital Input 3

P-0-0801-Digital inputs, state / Digital Input 3

Format	Data length	Offset in bit
UINT1	1	3

Digital Input 4

P-0-0801-Digital inputs, state / Digital Input 4

Format	Data length	Offset in bit
UINT1	1	4

Digital Input 5

P-0-0801-Digital inputs, state / Digital Input 5

Format	Data length	Offset in bit
UINT1	1	5

Digital Input 6

P-0-0801-Digital inputs, state / Digital Input 6

Format	Data length	Offset in bit
UINT1	1	6

Digital Input 7

P-0-0801-Digital inputs, state / Digital Input 7

Format	Data length	Offset in bit
UINT1	1	7

reserved

P-0-0801-Digital inputs, state / reserved

Format	Data length	Offset in bit
USINT	8	8

Properties

Name	Value
UIVisible	False

P-0-0802 Digital outputs

With this cyclic transferable IDN the state of the digital drive output can be set and cleared. See also P-0-0800 "Digital outputs control word".

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	MDT
Device parameter	Yes
Related to interface revision	No

Also see about this

- P-0-0401 Position limit switch configuration [▶ 711]

reserved

P-0-0802-Digital outputs / reserved

Format	Data length	Offset in bit
UINT7	7	0

Properties

Name	Value
UIVisible	False

Digital Ouptut 7

P-0-0802-Digital outputs / Digital Ouptut 7

Format	Data length	Offset in bit
UINT1	1	7

reserved

P-0-0802-Digital outputs / reserved

Format	Data length	Offset in bit
USINT	8	8

Properties

Name	Value
UIVisible	False

P-0-0804 Digital feedback inputs option unit

The optionally provided digital input states of the feedback system connected to the option unit of the drive (X41, X42) are displayed here. (Only some special feedback systems provide digital input states.)

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	0
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Digital Input A

P-0-0804-Digital feedback inputs option unit / Digital Input A

Format	Data length	Offset in bit
UINT1	1	0

Digital Input B

P-0-0804-Digital feedback inputs option unit / Digital Input B

Format	Data length	Offset in bit
UINT1	1	1

Digital Input C

P-0-0804-Digital feedback inputs option unit / Digital Input C

Format	Data length	Offset in bit
UINT1	1	2

Digital Input D

P-0-0804-Digital feedback inputs option unit / Digital Input D

Format	Data length	Offset in bit
UINT1	1	3

Digital Input E

P-0-0804-Digital feedback inputs option unit / Digital Input E

Format	Data length	Offset in bit
UINT1	1	4

Digital Input F

P-0-0804-Digital feedback inputs option unit / Digital Input F

Format	Data length	Offset in bit
UINT1	1	5

reserved

P-0-0804-Digital feedback inputs option unit / reserved

Format	Data length	Offset in bit
UINT10	10	6

Properties

Name	Value
UIVisible	False

P-0-0805 Force digital inputs

The input states of the digital inputs can be forced with this parameter.

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Also see about this

- P-0-0401 Position limit switch configuration [▶ 711]
- P-0-0402 Ready to operate configuration [▶ 714]
- P-0-0800 Digital output control word [▶ 803]

Digital input 0

P-0-0805-Force digital inputs / Digital input 0

Format	Data length	Offset in bit
Enum	2	0

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 1

P-0-0805-Force digital inputs / Digital input 1

Format	Data length	Offset in bit
Enum	2	2

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 2

P-0-0805-Force digital inputs / Digital input 2

Format	Data length	Offset in bit
Enum	2	4

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 3

P-0-0805-Force digital inputs / Digital input 3

Format	Data length	Offset in bit
Enum	2	6

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 4

P-0-0805-Force digital inputs / Digital input 4

Format	Data length	Offset in bit
Enum	2	8

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 5

P-0-0805-Force digital inputs / Digital input 5

Format	Data length	Offset in bit
Enum	2	10

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 6

P-0-0805-Force digital inputs / Digital input 6

Format	Data length	Offset in bit
Enum	2	12

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Digital input 7

P-0-0805-Force digital inputs / Digital input 7

Format	Data length	Offset in bit
Enum	2	14

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Referencesignal Feedback (X11)

P-0-0805-Force digital inputs / Referencesignal Feedback (X11)

Format	Data length	Offset in bit
Enum	2	16

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Referencesignal Feedback (X21)

P-0-0805-Force digital inputs / Referencesignal Feedback (X21)

Format	Data length	Offset in bit
Enum	2	18

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Referencesignal Feedback (X41)

P-0-0805-Force digital inputs / Referencesignal Feedback (X41)

Format	Data length	Offset in bit
Enum	2	20

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

Referencesignal Feedback (X42)

P-0-0805-Force digital inputs / Referencesignal Feedback (X42)

Format	Data length	Offset in bit
Enum	2	22

Properties

Value	Description
#00	Release
#01	Force to 1
#02	Force to 0

rsvd

P-0-0805-Force digital inputs / rsvd

Format	Data length	Offset in bit
Array of UINT	8	24

Properties

Name	Value
UIVisible	False

P-0-0806 Amplifier output voltage slope

The output voltage slope of the motor phases is displayed here. This value must be less of equal of the dielectric strength of the connected motor winding.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	5000
Max. Value	0
Unit	V/ µs
Changeable EtherCATState	No
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

P-0-0810 Customer specific functionality: control

Customer specific parameter!

This parameter is used only for authorized users.

P-0-0811 Customer specific functionality: status

Customer specific parameter!

This parameter is used only for authorized users.

P-0-0850 Amplifier identification

The amplifier identification string stored in the drive nonvolatile memory is displayed here.

Attributes

Name	Value
Datatype	text
Data length in bit	544
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No
Password protection level	2

Also see about this

P-0-0851 Save amplifier identification (pc) [▶ 820]

Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	-

Max length

Format	Size in bit	Offset in bit	Properties
UINT	16	16	-

P-0-0851 Save amplifier identification (pc)

Save the amplifier identification to internal nonvolatile memory.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No
Password protection level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

Also see about this

- P-0-0850 Amplifier identification [▶ 819]

P-0-0900 Factory settings

Internal parameter!

This IDN isn´t intended for use by end users!

A collection of the device factory settings.

Attributes

Name	Value
Datatype	udec
Data length in bit	4448
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No
Password level	1

Also see about this

S-0-0031 Hardware version [▶ 48]

Actual length

Format	Size in bit	Offset in bit	Properties
UINT	16	0	-

Max length

Datatype	Size in bit	Offset in bit	Properties
UINT	16	16	-

Data

Format	Size in bit	Offset in bit	Properties
	4416	32	-

Control Pcb

Format	Size in bit	Offset in bit	Properties
	480	0	-

Safety test status

Format	Size in bit	Offset in bit	Properties
UINT	16	0	-

reserved

Format	Size in bit	Offset in bit	Properties
UINT	16	16	-

ADC calibration

Format	Size in bit	Offset in bit	Properties
	320	32	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Channel 0 offset	INT	16	0	-
Channel 0 gain	UINT	16	16	-
Channel 1 offset	INT	16	32	-
Channel 1 gain	UINT	16	48	-
Channel 2 offset	INT	16	64	-
Channel 2 gain	UINT	16	80	-
Channel 3 offset	INT	16	96	-
Channel 3 gain	UINT	16	112	-
Channel 4 offset	INT	16	128	-
Channel 4 gain	UINT	16	144	-
Channel 5 offset	INT	16	160	-
Channel 5 gain	UINT	16	176	-
Channel 6 offset	INT	16	192	-
Channel 6 gain	UINT	16	208	-
Channel 7 offset	INT	16	224	-
Channel 7 gain	UINT	16	240	-
Channel 8 offset	INT	16	256	-
Channel 8 gain	UINT	16	272	-
Channel 9 offset	INT	16	288	-
Channel 9 gain	UINT	16	304	-

reserved

Format	Size in bit	Offset in bit	Properties
	112	352	-

Checksum

Datatype	Size in bit	Offset in bit	Properties
UINT	16	464	-

Power Pcb

Format	Size in bit	Offset in bit	Properties
	640	480	-

Current calibration

Format	Size in bit	Offset in bit	Properties
	608	0	-

Channel A

Format	Size in bit	Offset in bit	Properties
	304	0	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Calibration type	UINT	16	0	-
V: Offset in bit	INT	16	16	-
W: Offset in bit	INT	16	32	-
V: Resistor value 1	UINT	16	48	-
W: Resistor value 1	UINT	16	64	-
V: Resistor value 2	UINT	16	80	-
W: Resistor value 2	UINT	16	96	-
V: Resistor value 3	UINT	16	112	-
W: Resistor value 3	UINT	16	128	-
V: Resistor value 4	UINT	16	144	-
W: Resistor value 4	UINT	16	160	-
V: Current value 1	UINT	16	176	-
W: Current value 1	UINT	16	192	-
V: Current value 2	UINT	16	208	-
W: Current value 2	UINT	16	224	-
V: Current value 3	UINT	16	240	-
W: Current value 3	UINT	16	256	-
V: Current value 4	UINT	16	272	-
W: Current value 4	UINT	16	288	-

Channel B

Format	Size in bit	Offset in bit	Properties
	304	304	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Calibration type	UINT	16	0	-
V: Offset in bit	INT	16	16	-
W: Offset in bit	INT	16	32	-
V: Resistor value 1	UINT	16	48	-
W: Resistor value 1	UINT	16	64	-
V: Resistor value 2	UINT	16	80	-
W: Resistor value 2	UINT	16	96	-
V: Resistor value 3	UINT	16	112	-
W: Resistor value 3	UINT	16	128	-
V: Resistor value 4	UINT	16	144	-
W: Resistor value 4	UINT	16	160	-
V: Current value 1	UINT	16	176	-
W: Current value 1	UINT	16	192	-
V: Current value 2	UINT	16	208	-
W: Current value 2	UINT	16	224	-
V: Current value 3	UINT	16	240	-
W: Current value 3	UINT	16	256	-
V: Current value 4	UINT	16	272	-
W: Current value 4	UINT	16	288	-

reserved

Format	Size in bit	Offset in bit	Properties
Enum	16	608	-

Checksum

Datatype	Size in bit	Offset in bit	Properties
UINT	16	624	-

Driver Pcb

Format	Size in bit	Offset in bit	Properties
	640	480	-

Safety test status

Datatype	Size in bit	Offset in bit	Properties
UINT	16	0	-

Voltage calibration

Datatype	Size in bit	Offset in bit	Properties
	160	16	-

Substructure

Name	Datatype	Size in bit	Offset in bit	Properties
Calibration type	UINT	16	0	-
Reserved	UINT	16	16	-
Udclink offset	INT	16	32	-
Udclink gain	INT	16	48	-
Umain 1 offset	INT	16	64	-
Umain 1 gain	INT	16	80	-
Umain 2 offset	INT	16	96	-
Umain 2 gain	INT	16	112	-
Umain 3 offset	INT	16	128	-
Umain 3 gain	INT	16	144	-

reserved

Format	Size in bit	Offset in bit	Properties
	288	176	-

Checksum

Format	Size in bit	Offset in bit	Properties
UINT	16	464	-

Front Pcb

Format	Size in bit	Offset in bit	Properties
	1280	1600	-

Device Ids

Format	Size in bit	Offset in bit	Properties
	448	0	-

Identity object

Format	Size in bit	Offset in bit	Properties
	128	0	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Vendor Id	UDINT	32	0	-
Product code	UDINT	32	32	-
Revision No	UDINT	32	64	-
Serial No	UDINT	32	96	-

Manufacturing date

Format	Size in bit	Offset in bit	Properties
Enum	16	128	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Year	USINT	8	0	-
Week	USINT	8	8	-

Hardware device id 1

Format	Size in bit	Offset in bit	Properties
	128	0	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Fan	Enum	4	0	-

Value	Description
0	No fan
1	Papst614NM 1W4 60mm 35$m^7/_h$
2	Papst614NHH 3W 60mm 56$m^3/_h$
3	2 * Papst614NHH 3W 60mm 56$m^3/_h$ Papst614NHH 3W 60mm 56$m^3/_h$
4	2 * Papst614JH 7W7 60mm 70$m^3/_h$ Papst614NHH 3W 60mm 56$m^3/_h$
5	3 * Papst614JH 7W7 60mm 70$m^3/_h$ Papst614NHH 3W 60mm 56$m^3/_h$

Name	Format	Size in bit	Offset in bit	Properties
Profile type	Enum	4	4	-

Value	Description
0	With cold plate
1	With cold plate 18 and 25A
2	With cold plate 40A

Name	Format	Size in bit	Offset in bit	Properties
Internal brake resistor	Enum	4	8	-

Value	Description
0	No
1	ISA_PLAN_BRQ_200R0_K
2	ISA_PLAN_BRQ_100R0_K
3	ISA_PLAN_BRQ_47R0_K
4	2 * ISA_PLAN_BRQ_47R0_K
5	reserved
6	GMADU210x20 50R
7	VHPR300 28R
8	GPADU215x30 27R
9	VHPR150 50R

Name	Format	Size in bit	Offset in bit	Properties
rsvd	Array of UINT	4	12	-

Hardware device id 2

Format	Size in bit	Offset in bit	Properties
UINT	16	160	-

Hardware device id 3

Format	Size in bit	Offset in bit	Properties
UINT	16	176	-

Hardware device id 4

Format	Size in bit	Offset in bit	Properties
UINT	16	192	-

rsvd 1

Format	Size in bit	Offset in bit	Properties
Enum	48	208	-

CustomizedId

Format	Size in bit	Offset in bit	Properties
Enum	32	256	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
CustomerId	UINT	16	0	-
ModificationId	UINT	16	16	-

rsvd 2

Format	Size in bit	Offset in bit	Properties
Enum	64	288	-

Free switch code 1

Format	Size in bit	Offset in bit	Properties
UINT	16	352	-

Free switch code 2

Format	Size in bit	Offset in bit	Properties
UINT	16	368	-

rsvd 3

Format	Size in bit	Offset in bit	Properties
Enum	64	384	-

Resolver calibration

Format	Size in bit	Offset in bit	Properties
	448	0	-

Version

Format	Size in bit	Offset in bit	Properties
UINT	16	0	-

rsvd

Datatype	Size in bit	Offset in bit	Properties
Array of UINT	16	16	-

Channel A

Format	Size in bit	Offset in bit	Properties
	192	32	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Sin offset	DINT	32	0	Unit: inc
Cos offset	DINT	32	32	Unit: inc
Sin gain	UDINT	32	64	
Cos gain	UDINT	32	96	
Excitation voltage gain	UINT	16	128	
rsvd	Array of UINT	48	144	

Channel B

Format	Size in bit	Offset in bit	Properties
	192	224	-

Substructure

Name	Format	Size in bit	Offset in bit	Properties
Sin offset	DINT	32	00	Unit: inc
Cos offset	DINT	32	32	Unit: inc
Sin gain	UDINT	32	64	-
Cos gain	UDINT	32	96	-
Excitation voltage gain	UINT	16	128	-
rsvd	Array of UINT	48	144	-

reserved

Format	Size in bit	Offset in bit	Properties
	400	864	-

Checksum

Format	Size in bit	Offset in bit	Properties
UINT	16	1264	-

Option Pcb

Datatype	Size in bit	Offset in bit	Properties
	1280	2880	-

arData

Format	Size in bit	Offset in bit	Properties
	1280	0	-

Safety Pcb

Datatype	Size in bit	Offset in bit	Properties
	160	4160	-

reserved

Format	Size in bit	Offset in bit	Properties
	144	0	-

Checksum

Format	Size in bit	Offset in bit	Properties
UINT	16	144	-

Control Pcb data valid

Format	Size in bit	Offset in bit	Properties
UINT	16	4320	-

Power Pcb data valid

Format	Size in bit	Offset in bit	Properties
UINT	16	4336	-

Driver Pcb data valid

Format	Size in bit	Offset in bit	Properties
UINT	16	4352	-

Front Pcb data valid

Format	Size in bit	Offset in bit	Properties
UINT	16	4368	-

Option Pcb data valid

Format	Size in bit	Offset in bit	Properties
UINT	16	4384	-

Safety Pcb data valid

Format	Size in bit	Offset in bit	Properties
UINT	16	4400	-

P-0-0901 Save factory settings (pc)

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	1

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

P-0-0902 Current calibration (pc)

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!]

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	1

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

Also see about this

P-0-0912 Current calibration parameter [▶ 836]

P-0-0904 Save device component hardware Id's (pc)

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	1

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

P-0-0905 Clear error history (pc)

Internal paramater!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	1

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

P-0-0906 Reset operation times (pc)

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	2

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

Also see about this

- S-0-0435 Operating time drive control [▶ 193]
- S-0-0436 Operating time power stage [▶ 194]

P-0-0912 Current calibration parameter

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	128
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password protection level	1

Also see about this

P-0-0902 Current calibration (pc) [▶ 832]

P-0-1000 Debug pointer 1 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Also see about this

- P-0-1001 Debug pointer 1 type [▶ 838]
- P-0-1002 Debug pointer 1 value [▶ 839]

P-0-1001 Debug pointer 1 type

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	7
Max. Value	7
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Value	Description
0	Binary 16
1	Unsigned Decimal 16
2	Decimal 16
3	Hex 16
4	Binary 32
5	Unsigned Decimal 32
6	Decimal 32
7	Hex 32

Also see about this

- P-0-1000 Debug pointer 1 addr [▶ 837]
- P-0-1002 Debug pointer 1 value [▶ 839]

P-0-1002 Debug pointer 1 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Also see about this

- P-0-1000 Debug pointer 1 addr [▶ 837]
- P-0-1001 Debug pointer 1 type [▶ 838]

P-0-1003 Debug pointer 2 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-1004 Debug pointer 2 type

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	7
Max. Value	7
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Value	Description
0	Binary 16
1	Unsigned decimal 16
2	Decimal 16
3	Hex 16
4	Binary 32
5	Unsigned Decimal 32
6	Decimal 32
7	Hex 32

P-0-1005 Debug pointer 2 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	AT
Device parameter	No
Related to interface revision	Yes

P-0-1006 Feedback debug pointer 1 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Addr

P-0-1006-Feedback debug pointer 1 adr / Addr

The actual feedback vector length from the sine and cosine evaluation can be read out via the feedback debug pointer with the address 0xA006. The valid limits are between 2332 and 14906.

The normal value is 8301 and corresponds exactly to 1Vpp for the cosine and sine signal and 90° phase shift between the two signals.

Datatype	Data length	Offset in bit
-	16	0

Value	Feedback signal
#A000	Sin/Cos ChA: Sin (Int16)
#A001	Sin/Cos ChA: Cos (Int16)
#A002	Sin/Cos ChA: Sin max (Int16)
#A003	Sin/Cos ChA: Sin min (Int16)
#A004	Sin/Cos ChA: Cos max (Int16)
#A005	Sin/Cos ChA: Cos min (Int16)
#A006	Sin/Cos ChA: Sqr vec length (Uint16)
#A007	Sin/Cos ChA: Sqr vec length max (Uint16) With address 0xA007 the largest internally calculated vector length since initialization of the feedback (PreOp after Op or ErrorReset after feedback error) can be read
#A008	Sin/Cos ChA: Sqr vec length min (Uint16) With address 0xA008 the smallest internally calculated vector length since feedback initialization (PreOp after Op or ErrorReset after feedback error) can be read.
#A010	Resolver/MES ChA: Sin pos (Int16)
#A011	Resolver/MES ChA: Cos pos (Int16)
#A012	Resolver ChA: Sin neg (Int16)
#A013	Resolver ChA: Cos neg (Int16)
#A014	rsvd 0 (Uint16)
#A015	rsvd 1 (Uint16)
#A016	Resolver/MES ChA: Estimation error (Int16)
#A017	Resolver/MES ChA: Estimated velo (Int16)
#A018	ParaCh ChA: Abs. parameter channel position LW (Uint16)
#A019	ParaCh ChA: Abs. parameter channel position HW (Uint16)
#A020	Sin/Cos ChB: Sin (Int16)
#A021	Sin/Cos ChB: Cos (Int16)
#A022	Sin/Cos ChB: Sin max (Int16)
#A023	Sin/Cos ChB: Sin min (Int16)
#A024	Sin/Cos ChB: Cos max (Int16)
#A025	Sin/Cos ChB: Cos min (Int16)
#A026	Sin/Cos ChB: Sqr vec length (Uint16)
#A027	Sin/Cos ChB: Sqr vec length max (Uint16)
#A028	Sin/Cos ChB: Sqr vec length min (Uint16)
#A030	Resolver/MES ChB: Sin pos (Int16)
#A031	Resolver/MES ChB: Cos pos (Int16)
#A032	Resolver ChB: Sin neg (Int16)
#A033	Resolver ChB: Cos neg (Int16)
#A034	rsvd 2 (Uint16)
#A035	rsvd 3 (Uint16)
#A036	Resolver/MES ChB: Estimation error (Int16)
#A037	Resolver/MES ChB: Estimated velo (Int16)
#A038	ParaCh ChB: Abs. parameter channel position LW (Uint16)
#A039	ParaCh ChB: Abs. parameter channel position HW (Uint16)

Source

P-0-1006-Feedback debug pointer 1 adr / Source

Datatype	Data length	Offset in bit
-	16	16

Value	Description
#00	Front
#01	Option

P-0-1007 Feedback debug pointer 1 type

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	3
Max. Value	3
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Data type

P-0-1007-Feedback debug pointer 1 type / Data type

Value	Datatype and Data length
0	Binary 16
1	Unsigned Decimal 16
2	Decimal 16
3	Hex 16

P-0-1008 Feedback debug pointer 1 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	Yes
Related to interface revision	No

P-0-1009 Feedback debug pointer 2 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Addr

P-0-1009-Feedback debug pointer 2 adr / Addr

Format	Data length	Offset in bit
Enum	16	0

Value	Feedback signal
#A000	Sin/Cos ChA: Sin (Int16)
#A001	Sin/Cos ChA: Cos (Int16)
#A002	Sin/Cos ChA: Sin max (Int16)
#A003	Sin/Cos ChA: Sin min (Int16)
#A004	Sin/Cos ChA: Cos max (Int16)
#A005	Sin/Cos ChA: Cos min (Int16)
#A006	Sin/Cos ChA: Sqr vec length (Uint16)
#A007	Sin/Cos ChA: Sqr vec length max (Uint16)
#A008	Sin/Cos ChA: Sqr vec length min (Uint16)
#A010	Resolver/MES ChA: Sin pos (Int16)
#A011	Resolver/MES ChA: Cos pos (Int16)
#A012	Resolver ChA: Sin neg (Int16)
#A013	Resolver ChA: Cos neg (Int16)
#A014	rsvd 0 (Uint16)
#A015	rsvd 1 (Uint16)
#A016	Resolver/MES ChA: Estimation error (Int16)
#A017	Resolver/MES ChA: Estimated velo (Int16)
#A018	ParaCh ChA: Abs. parameter channel position LW (Uint16)
#A019	ParaCh ChA: Abs. parameter channel position HW (Uint16)
#A020	Sin/Cos ChB: Sin (Int16)
#A021	Sin/Cos ChB: Cos (Int16)
#A022	Sin/Cos ChB: Sin max (Int16)
#A023	Sin/Cos ChB: Sin min (Int16)
#A024	Sin/Cos ChB: Cos max (Int16)
#A025	Sin/Cos ChB: Cos min (Int16)
#A026	Sin/Cos ChB: Sqr vec length (Uint16)
#A027	Sin/Cos ChB: Sqr vec length max (Uint16)
#A028	Sin/Cos ChB: Sqr vec length min (Uint16)
#A030	Resolver/MES ChB: Sin pos (Int16)
#A031	Resolver/MES ChB: Cos pos (Int16)
#A032	Resolver ChB: Sin neg (Int16)
#A033	Resolver ChB: Cos neg (Int16)
#A034	rsvd 2 (Uint16)
#A035	rsvd 3 (Uint16)
#A036	Resolver/MES ChB: Estimation error (Int16)
#A037	Resolver/MES ChB: Estimated velo (Int16)
#A038	ParaCh ChB: Abs. parameter channel position LW (Uint16)
#A039	ParaCh ChB: Abs. parameter channel position HW (Uint16)

Source

P-0-1009-Feedback debug pointer 2 adr / Source

Format	Data length	Offset in bit
Enum	16	16

Value	Description
#00	Front
#01	Option

P-0-1010 Feedback debug pointer 2 type

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	3
Max. Value	3
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Value	Datatype and length
0	Binary 16
1	Unsigned Decimal 16
2	Decimal 16
3	Hex 16

P-0-1011 Feedback debug pointer 2 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	Yes
Related to interface revision	No

P-0-1012 Memory dump selector

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	16
Decimal point	0
Min. Value	0
Default	0
Max. Value	65535
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password level	1

Pointer

P-0-1012-Memory dump selector / Pointer

Value	Description
#00	reserved
#01	Stack
#02	EscReg
#03	SchedulerArray
#10	Encoder manufacturer parameter
#11	Encoder motor parameter
#FFFF	AddrPointer P-0-1000

Also see about this

P-0-1000 Debug pointer 1 addr [▶ 837]

P-0-1013 Memory dump

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	8224
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

Actual length

P-0-1013-Memory dump / Actual length

Datatype	Data length	Offset in bit
UINT	16	0

Max length

P-0-1013-Memory dump / Max length

Datatype	Data length	Offset in bit
UINT	16	16

Data

P-0-1013-Memory dump / Data

Datatype	Data length	Offset in bit
	8192	32

P-0-1020 Debug parameter

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No

P-0-1021 Debug variable

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

P-0-1022 Debug command

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	No
Password level	1

Properties

Value	Description
0	Cancel cmd
1	Set cmd
3	Set & enable cmd

Also see about this

- P-0-1020 Debug parameter [▶ 856]
- P-0-1021 Debug variable [▶ 857]

P-0-1040 Float 32-Debug pointer 1 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1042 Float 32-Debug pointer 1 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	float
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp. SafeOp and Op
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1043 Float 32-Debug pointer 2 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1045 Float 32-Debug pointer 2 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	float
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1050 Debug pointer 3 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1051 Debug pointer 3 type

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	7
Max. Value	11
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	from Rev. 210

Value	Description
0	Binary 16
1	Unsigned Decimal 16
2	Decimal 16
3	Hex 16
4	Binary 32
5	Unsigned Decimal 32
6	Decimal 32
7	Hex 32
8	Binary 64
9	Unsigned Decimal 64
10	Decimal 64
11	Hex 64

P-0-1052 Debug pointer 3 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	64
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1053 Debug pointer 4 addr

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	32
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1054 Debug pointer 4 type

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	udec
Data length in bit	16
Decimal point	0
Min. Value	0
Default	7
Max. Value	11
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	from Rev. 210

Value	Description
0	Binary 16
1	Unsigned Decimal 16
2	Decimal 16
3	Hex 16
4	Binary 32
5	Unsigned Decimal 32
6	Decimal 32
7	Hex 32
8	Binary 64
9	Unsigned Decimal 64
10	Decimal 64
11	Hex 64

P-0-1055 Debug pointer 4 value

Internal parameter!

This IDN isn´t intended for use by end users!

Internal manufacturer procedure command!

Attributes

Name	Value
Datatype	hex
Data length in bit	64
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp, SafeOp and Op
Cyclic transfer	AT
Device parameter	No
Related to interface revision	from Rev. 210

P-0-1100 Torque command value (Dynamic MDT)

During operation mode torque / force control, torque / force command values are transferred from the control unit to the drive updated with the control unit cycle time. The value is related to the configured channel peak torque / force (P-0-0094). 1000 (=100.0%) requests the maximal value.

Attributes

Name	Value
Datatype	dec
Data length in bit	16
Decimal point	1
Min. Value	-100.0
Default	0.0
Max. Value	100.0
Unit	%
Changeable EtherCATState	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

- S-0-0904 Configuration list of dynamic MDT [▶ 196]
- S-0-0001 Control unit cycle time (TNcyc) [▶ 23]

P-0-1101 Velocity command value (Dynamic MDT)

During operating mode velocity control, the control unit provides the velocity command values to the drive updated with the control unit cycle time. Scaling is constant: Rotary motor: 1 rpm corresponds to 2^{30} / 60000 counts (17895.697). Linear motor: 1 m/s corresponds to 2^{30} / 24 counts (at 24 mm pole pitch)

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-2 147 483 648
Default	0
Max. Value	2 147 483 647
Unit	rev/(2^{30} ms)
Changeable EtherCATState	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

- S-0-0904 Configuration list of dynamic MDT [▶ 196]

P-0-1102 Position command value (Dynamic MDT)

During the position control drive operation mode, the position command values are transferred from the control unit to the drive according to the time pattern of the control unit cycle. The modulo calculation isn't considered here.

Attributes

Name	Value
Datatype	dec
Data length in bit	32
Decimal point	0
Min. Value	-2 147 483 648
Default	0
Max. Value	2 147 483 647
Unit	inc
Changeable EtherCATState	No
Cyclic transfer	No
Device parameter	No
Related to interface revision	from Rev. 210

Also see about this

- P-0-0904 Save device component hardware Id's (pc) [▶ 833]

P-0-2000 Configured safety option

The enumeration of this parameter must be choosen to the used / inserted safety option.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	In PreOp
Cyclic transfer	No
Device parameter	Yes
Related to interface revision	No

Option Identifier

P-0-2000-Configured safety option / Option Identifier

Format	Data length	Offset in bit
Enum	16	0

Value	Description
0	No safety option
1	AX5801
2	AX5805/AX5806
3	AX5801-0200 (HW2)

P-0-2001 Safety option diagnostics

This parameter displays some diagnostics of the safety logic.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min. Value	-
Default	0
Max. Value	-
Unit	-
Changeable EtherCATState	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Switching off path 1 (low side)

P-0-2001-Safety option diagnostics / Switching off path 1 (low side)

Format	Data length	Offset in bit
Enum	1	0

Value	Description
0	Switched off
1	Switched on

Switching off path 2 (power supply)

P-0-2001-Safety option diagnostics / Switching off path 2 (power supply)

Datatype	Data length	Offset in bit
Enum	1	1

Value	Description
0	Switched off
1	Switched on

RecoveryTimeElapsed

P-0-2001-Safety option diagnostics /

Format	Data length	Offset in bit
Enum	1	2

Value	Description
0	false
1	true

Switching off path 3 (high side)

P-0-2001-Safety option diagnostics / Switching off path 3 (high side)

Datatype	Data length	Offset in bit
Enum	1	3

Value	Description
0	Switched off
1	Switched on

reserved

P-0-2001-Safety option diagnostics / reserved

Format	Data length	Offset in bit
UINT12	12	4

P-0-2002, Safety option state

This parameter displays the state of the safety logic.

Attributes

Name	Value
Datatype	binary
Data length in bit	16
Decimal point	0
Min value	-
Default	0
Max value	-
Unit	-
Changeable in EtherCAT state	No
Cyclic transfer	AT
Device parameter	No
Related to interface revision	No

Parameter structure

Value	Description
Bit 0	Drive in a safe state 0 = False 1 = True
Bit 1 - 15	reserved

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