BECKHOFF New Automation Technology

Diagnostic Messages | EN

AX5000

Digital compact servo drives

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1 Documentation notes

1.1 Disclaimer

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- EP1590927
- EP1789857
- EP1456722
- EP2137893
- DE102015105702

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All components of this product described in the original operating instructions are delivered in a hardware and software configuration, depending on the application requirements. Modifications and changes to the hardware and/or software configuration that go beyond the documented options are prohibited and nullify the liability of Beckhoff Automation GmbH & Co. KG.

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- Failure to comply with this documentation
- Improper use
- Use of untrained personnel
- Use of unauthorized spare parts

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1.2 Version numbers

Provision of revision levels

On request we can send you a list of revision levels for changes to the documentation.

- Send your request to: info@beckhoff.de

Origin of the document

This documentation was originally written in German. All other languages are derived from the German original.

Product features

The valid product features are always those specified in the current documentation. Further information given on the product pages of the Beckhoff homepage, in emails or in other publications is not authoritative.

1.3 Scope of the documentation

The complete documentation consists of the following documents:

1.4 Staff qualification

This documentation is aimed at trained specialists working in control technology and automation who have knowledge of the applicable and required standards and directives.

Specialists must have knowledge of drive technology and electrical equipment as well as knowledge of safe working on electrical systems and machines. This includes knowledge of proper setup and preparation of the workplace as well as securing the working environment for other persons.

The documentation published at the time must be used for each installation and commissioning. The products must be used in compliance with all safety requirements, including all applicable laws, regulations, provisions and standards.

Instructed person

Instructed persons have a clearly defined task area and have been informed about the work to be carried out. Instructed persons are familiar with:

- The necessary protective measures and protective devices
- The intended use and risks that can arise from use other than for the intended purpose

Trained person

Trained persons meet the requirements for instructed persons. Trained persons have additionally received training from the machine manufacturer or vendor:

- Machine-specific or
- Plant-specific

Trained specialists

Trained specialists have received specific technical training and have specific technical knowledge and experience. Trained specialists can:

- Apply relevant standards and directives
- Assess tasks that they have been assigned
- Recognize possible hazards
- Prepare and set up workplaces

Qualified electricians

Qualified electricians have comprehensive technical knowledge gained from a course of study, an apprenticeship or technical training. They have an understanding of control technology and automation. They are familiar with relevant standards and directives. Qualified electricians can:

- Independently recognize, avoid and eliminate sources of danger
- Implement specifications from the accident prevention regulations
- Assess the work environment
- Independently optimize and carry out their work

Customer service

Customer service personnel and service personnel are verifiably trained and authorized by Beckhoff or the machine manufacturer for the work on the machine or plant.

1.5 Safety and instruction

Read the contents that refer to the activities you have to perform with the product. Always read the chapter For your safety in the documentation. Observe the warning notes in the chapters so that you can handle and work properly and safely with the product.

1.6 Explanation of symbols

Various symbols are used for a clear arrangement:

a) The triangle indicates instructions that you should execute
• The bullet point indicates an enumeration
[…] The square parentheses indicate cross-references to other text passages in the document
[+] The plus sign in square brackets indicates ordering options and accessories

1.6.1 Pictograms

Pictograms and signal words are used in warning notices to make it easier for you to find text passages:

⚠ DANGER

Failure to observe will result in serious or fatal injuries.

⚠ WARNING

Failure to observe may result in serious or fatal injuries.

⚠ CAUTION

Failure to observe may result in minor or moderate injuries.

NOTE

Notes

Notes are used for important information on the product.

The possible consequences of failure to observe these include:

- Malfunctions of the product
- Damage to the product
- Damage to the environment

Informations

This sign indicates information, tips and notes for dealing with the product or the software.

Examples

This symbol shows examples of how to use the product or software.

1.7 Beckhoff Services

Beckhoff and its international partner companies offer comprehensive support and service.

1.7.1 Support

The Beckhoff Support offers technical advice on the use of individual Beckhoff products and system planning. Staff provide assistance for programming and commissioning complex automation systems and offer a comprehensive training program.

Hotline:	+49(0)5246/963-157
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Web:	www.beckhoff.de/support

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Training in Germany takes place in our training center at the Beckhoff headquarters in Verl, at branch offices or, by arrangement, at the customer's premises.

Hotline:	+49(0)5246/963-5000
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E-mail:	training@beckhoff.com
Web:	www.beckhoff.de/training

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The Beckhoff Service Center supports you with after-sales services such as on-site service, repair service or spare parts service.

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The addresses of the international Beckhoff branch offices can be found on the Beckhoff website: http://www.beckhoff.de

2 Introduction to the diagnostic system

2.1 Basic knowledge of the diagnostic system

An elaborate plausibility check is performed throughout the entire process sequence in the AX5000. The resulting diagnostic messages are displayed in coded form on the display of the AX5000 and the message is displayed in plain text in the notification area of the “TwinCATDriveManager”.

Diagnostic Objects

Diagnostic objects are understood to be events that are diagnosed and for which a corresponding message is stored. In the AX5000 two groups of diagnostic objects can be distinguished.

Parameter channel diagnoses (SoE)

The SoE objects can cause messages that concern only the service or parameter channel of the communication profile. These messages must be evaluated and processed with the aid of programs in the PLC, in the TCDM or the HMI. The AX5000 continues to run without error and does not output any message.

Device diagnoses

Device objects can cause messages that concern certain hardware and software components of the drive system. In relation to the global diagnostics, several messages are displayed in direct succession in many cases and only the first remains visible on the display. In the event of a malfunction it is important to judge the entire diagnostic environment, i.e. to observe all diagnostic messages. For this purpose the so-called history file was created, in which all AX5000 diagnostic messages are accumulated.

Diagnostic messages

The diagnostic messages for SoE objects and device objects differ only insignificantly in their structure. Since diagnostic messages for SoE objects do not directly concern the function of the AX5000, there is no type, no reset and no reaction to the message; the other information is, however, also present.

Structure of the diagnostic message

Diagnostic code (Hex.)

The diagnostic code is represented in hexadecimal. This syntax is also used for the representation on the display of the AX5000.

0xF... = error
0xE... = warning
0xD... = information

Diagnostic code (Dec.)

The diagnostic code is represented in decimal.

Class

Diagnostic class	Information
1: Error	An error always causes the axis to be stopped. We recommend the following procedure for the rectification of errors: • Disable the axis (e.g. via the MC_Power block) • Rectify the error • Execute the reset command “S-0-0099” (e.g. FB_SoEReset block) • Execute a reset of the set value generation (e.g. FB_NcReset block) • Enable the axis (e.g. MC_Power block) • Put the plant into operation again
2: Warning	Warnings are displayed, but the AX5000 does not react directly.
3: Information	Information is displayed, but the AX5000 does not react directly.

Type

Diagnostic type	Information
Runtime error	A general error has occurred.
Parameter error	The parameters entered cannot be verified.
Software error	A general error has occurred.
Hardware error	A general error has occurred.
Command error	An error occurred during the execution of a command.
Bootload error	An error occurred while initialising the AX5000.
Warning	A warning has no effect on the AX5000.
Information	Information has no effect on the AX5000.

Reaction

The AX5000 can react in different ways to a diagnostic. See also “AX5000_DiagMessages_General_IDN”.

Reaction to the diagnostic	Information
none	No special reaction takes place; the AX5000 remains in the normal operating condition.
The axis is not ready for operation	The EtherCAT “OP” status is not reached because there are parameterisation or initialisation problems.
NC control	There is no special reaction by the AX5000; the reaction takes place under the control of the NC. (The reaction time can be parameterised (see “AX5000_DiagMessages_General_IDN”))
A “closed loop” ramp is driven	By means of a “closed loop” ramp the axis is brought to a standstill in a controlled manner. The ramp can be parameterised. By means of an “open loop” ramp the axis is brought to a standstill in an open loop, control is no longer possible. The ramp can be parameterised.
An “open loop” ramp is driven	By means of an “open loop” ramp the axis is brought to a standstill in an open loop, control is no longer possible. The ramp can be parameterised.
The armature short circuit brake is activated	The motors are braked, wherein the motor coil has to absorb the brake energy.
Torque-off	The AX5000 switches the axis Torque-off

The diagnostic reactions are hierarchically structured. Not all reactions are currently implemented: The reaction tree clarifies the corresponding diagnostic reactions including the hierarchy.

- *NC control* (starting from firmware version 2.x)
- “Closed loop” ramp
- *“Open loop” ramp* (not implemented)
- Armature short circuit brake (not implemented)
- *Torque-off*

Depending upon the diagnostic, an attempt is made to perform a certain reaction. If this reaction cannot be performed due to further events or because it is not implemented, operation continues with the next reaction according to the reaction tree.

Examples

Expected reaction according to diagnostic	Reaction performed by AX5000
NC control	“Closed loop” ramp, ("NC control" starting from firmware version 2.x)
“Closed loop” ramp	“Closed loop” ramp
“Open loop” ramp	Torque-off
Armature short circuit brake	Torque-off
Torque-off	Torque-off

IDN P-0-0350 - Error reaction check word

With the “error reaction check word” you can disable the standard reaction to the diagnostic and allow only the reaction parameterised in the “error response check word” in the event of an error.

Reset

Reset	Information
A RESET is not possible. A fatal hardware or software error has occurred in the AX5000.	Exchange the servo drive if necessary.
A fatal error has occurred; the AX5000 must be restarted.	Interrupt the 24 V supply voltage for at least 10 sec. or switch to the EtherCAT status “Bootstrap”
The Reset command (S-0-0099) must be executed	
Warning: Reset not necessary	For most warnings there is no reaction by the AX5000.
Information: Reset not necessary	There is no direct reaction by the AX5000 to information.

Possible causes

All causes that could have caused the diagnostic message are listed here. Please always read all of the causes.

Solutions

Analogous to the causes, all solutions are listed here. The ordinal numbers before the “possible causes” and the “solutions” correspond to one another.

2.2 Diagnostic messages on the display (TC Drive Manager)

In relation to the global diagnostics, several messages are displayed in direct succession in many cases and only the first remains visible on the display. In the event of a malfunction it is important to judge the entire diagnostic environment, i.e. to see all diagnostic messages. For this purpose the so-called history file was created, in which all AX5000 diagnostic messages are accumulated.

Diagnostic messages on the display of the AX5000

AX5000 display	Comment
ECatSt=Op UdcLnk+00306V 1 A Id: 0xF415(F) B Id: 0xF415(F) 2 A IO Sync lost(F) B IO Sync lost(F) 3 A Id: 0xF415(F) B Id: 0xF415(F) 4 A IO Sync lost(F) B IO Sync lost(F) 5	The display of the AX5000 consists of 2 lines, which represent the information as standard (1). If a diagnostic case arises that concerns both channels, then the diagnostic code (Hex.) and a short version of the message (2+3) are shown in alternation on the display. If the diagnostic case concerns only one channel, then this procedure is displayed only in the upper line; the standard text remains in the lower line. In both cases the display additionally flashes (2-5).

Diagnostic messages in the TwinCAT Drive Manager (TCDM)

The diagnostic messages are displayed in two different ways in the TCDM (1). The status bar contains the Error ID (2) with the tool tip (3). The Error ID contains the last diagnostic message for each channel; the tool tip contains the last current diagnostic messages; this is very helpful if the diagnostic encompasses several messages. Furthermore there is a diagnostic (4) for each channel. The current diagnostic message with error code (5) and error message (6) is listed here. The error code is located in the IDN P-0-0300; the associated error message is read from an XML file. The reset command “S-0-0099” is initiated by the “Reset” button (7).

Furthermore there is an error history (8) for each channel. The last error messages (no warnings and no information) are listed here with time stamp (9), error code (10) and error text (11). The time stamp is deposited in the IDN P-0-0301 and the error code in the IDN P-0-0300; the associated error text is read from an XML file. If you click on the “?”, a new window (13) opens that contains a detailed error description similar to this manual.

2.3 Diagnostic messages and IDNs

In the case of the special diagnostic message “Error” you can disable the standard reaction of the AX5000 by means of parameterisation and specify a new reaction. Two IDNs are available for this.

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

Parameterisation of the error reaction

Value	Error response	Comment
0	Torque off	**WARNING!** The axis is stopped in an uncontrolled manner.
1	First “ramp down” and then torque off	Default value: The standard reaction to the error is performed.
2 (currently not implemented)	First “ramp down”, then armature short circuit braking with thermal monitoring	The ramp for the “ramp down” can be parameterised via the IDN S-0-0429.
3 (currently not implemented)	First “ramp down”, then armature short circuit braking without thermal monitoring	The ramp for the “ramp down” can be parameterised via the IDN S-0-0429
4 (starting from firmware version 2.x))	NC handling (the reaction is left to the NC for a certain time before the AX5000 “ramping down”)	The time is parameterised in the IDN P-0-0351 (see below). The ramp for the “ramp down” can be parameterised via the IDN S-0-0429.

Behaviour of the two axes in the case of a 2-channel AX5000

Value	Error response	Comment
0	Immediate switching over of the EtherCAT status after SafeOp	The AX5000 has only one EtherCAT controller and both axes are disabled upon changing to SafeOp; i.e. the error-free axis is also brought to a standstill.
1	No EtherCAT status change as long as the 2nd axis is still enabled.	The first axis is already disabled due to the error; the AX5000 drives the 2nd axis until it is disabled.

See also “AX5000_UserManual-->Appendix-->Error management”

IDN P-0-0351 - Error reaction waiting time (starting from firmware version 2.x)

Here you can enter the waiting time until “ramp down” for the above-described error reaction “NC handling”. If the NC has not disabled the axes by then, a “ramp down” is performed.

3 Parameter channel diagnostics

1001, No valid IDN

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
1001	4097

Class	Type
Error	SoE

1009, Invalid access to element 1

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
1009	4105

Class	Type
Error	SoE

2001, No name

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
2001	8193

Class	Type
Error	SoE

2002, Name transmission too short

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
2002	8194

Class	Type
Error	SoE

2003, Name transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
2003	8195

Class	Type
Error	SoE

2004, Name cannot be changed, (read only)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
2004	8196

Class	Type
Error	SoE

2005, Name is write protected at this time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
2005	8197

Class	Type
Error	SoE

3002, Attribute transmission too short

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
3002	12290

Class	Type
Error	SoE

3003, Attribute transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
3003	12291

Class	Type
Error	SoE

3004, Attribute cannot be changed, read only

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
3004	12292

Class	Type
Error	SoE

3005, Attribute is write protected at this time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
3005	12293

Class	Type
Error	SoE

4001, No Unit

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
4001	16385

Class	Type
Error	SoE

4002, Unit transmission too short

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
4002	16386

Class	Type
Error	SoE

4003, Unit transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
4003	16387

Class	Type
Error	SoE

4004, Unit cannot be changed, read only

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
4004	16388

Class	Type
Error	SoE

4005, Unit is write protected at this time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
4005	16389

Class	Type
Error	SoE

5001, No minimum input value

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
5001	20481

Class	Type
Error	SoE

5002, Minimum input value transmission too short

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
5002	20482

Class	Type
Error	SoE

5003, Minimum input value transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
5003	20483

Class	Type
Error	SoE

5004, Minimum input value cannot be changed, read only

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
5004	20484

Class	Type
Error	SoE

5005, Minimum input value is write protected at this time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
5005	20485

Class	Type
Error	SoE

6001, No maximum input value

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
6001	24577

Class	Type
Error	SoE

6002, Maximum input value transmission too short

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
6002	24578

Class	Type
Error	SoE

6003, Maximum input value transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
6003	24579

Class	Type
Error	SoE

6004, Maximum input value cannot be changed, read only

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
6004	24580

Class	Type
Error	SoE

6005, Maximum input value is write protected at this time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
6005	24581

Class	Type
Error	SoE

7002, Operation data value transmission too short

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7002	28674

Class	Type
Error	SoE

7003, Operation data value transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7003	28675

Class	Type
Error	SoE

7004, Operation data value cannot be changed, read only

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7004	28676

Class	Type
Error	SoE

7005, Operation data value is write protected at this time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7005	28677

Class	Type
Error	SoE

7006, Operation data value is smaller than the minimum input value

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7006	28678

Class	Type
Error	SoE

7007, Operation data value is greater than the maximum input value

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7007	28679

Class	Type
Error	SoE

7008, Invalid operation data

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7008	28680

Class	Type
Error	SoE

7009, Operation data is write protected by a password

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7009	28681

Class	Type
Error	SoE

700A, Operation data value is write protected

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
700A	28682

Class	Type
Error	SoE

700B, Invalid indirect addressing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
700B	28683

Class	Type
Error	SoE

700C, Operation data is write protected due to other settings

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
700C	28684

Class	Type
Error	SoE

700D, Reserved

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
700D	28685

Class	Type
Error	SoE

7010, Procedure command already active

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7010	28688

Class	Type
Error	SoE

7011, Procedure command not interruptible

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7011	28689

Class	Type
Error	SoE

7012, Procedure command is at this time not executable

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7012	28690

Class	Type
Error	SoE

7013, Procedure command not executable

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7013	28691

Class	Type
Error	SoE

7014, No data state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
7014	28692

Class	Type
Error	SoE

8001, No default value

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
8001	32769

Class	Type
Error	SoE

8002, Default value transmission too long

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
8002	32770

Class	Type
Error	SoE

8004, Default value cannot be changed, read only

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
8004	32772

Class	Type
Error	SoE

800A, Invalid drive number

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
800A	32778

Class	Type
Error	SoE

800B, General error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
800B	32779

Class	Type
Error	SoE

800C, No element addressed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
800C	32780

Class	Type
Error	SoE

4 Device Diagnostics

4.1 CCD0, Leaving positive limit switch

Warning "ECD0" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CCD0	52432

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The axis has exited on the positive limit switch.	

4.2 CCD1, Leaving negative limit switch

Warning "ECD1" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CCD1	52433

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The axis has exited on the negative limit switch.	

4.3 CD40, Clear warning: Overload internal brake resistor

Warning "ED40" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CD40	52544

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The internal brake resistor overload is no longer present.	

4.4 CD41, Clear warning: Overload external brake resistor

Warning "ED41" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CD41	52545

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The external brake resistor overload is no longer present.	

4.5 CD42, Clear warning: Over-temperature amplifier

Warning "ED42" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CD42	52546

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
Overheating of the servo driver is no longer present.	

4.6 CD43, Clear warning: Under-voltage DC link

Warning "ED43" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CD43	52547

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The under-voltage of the DC link is no longer present.	

4.7 CD46, Clear warning: U_mains too high

Warning "ED46" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CD46	52550

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The under-voltage of the DC link is no longer present.	

4.8 CD47, Clear warning: U_mains too low

Warning "ED47" has been reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
CD47	52551

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The under-voltage of the DC link is no longer present.	

4.9 D000, ESC state: Init

ESC state: Init

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D000	53248

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.10 D001, ESC state: PreOp

ESC state: PreOp

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D001	53249

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.11 D002, ESC state: Boot

ESC state: Boot

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D002	53250

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.12 D003, ESC state: SafeOp

ESC state: SafeOp

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D003	53251

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.13 D005, ESC state: Op

ESC state: Op

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D005	53253

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.14 D006, ESC state: invalid

ESC state: invalid

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D006	53254

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.15 D010, Axis state machine: Control section not ready

Axis state machine: Control section not ready

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D010	53264

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.16 D011, Axis state machine: Control section ready

Axis state machine: Control section ready

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D011	53265

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.17 D012, Axis state machine: Control and power section ready

Axis state machine: Control and power section ready

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D012	53266

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.18 D013, Axis state machine: Axis in operation

Information message from the status machine: The axis has been started.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D013	53267

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

Possible Causes	Solutions

4.19 D014, Axis state machine: Axis halt

Axis state machine: Axis halt

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D014	53268

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.20 D015, Axis state machine: Axis error

Axis state machine: Axis error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D015	53269

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.21 D019, Axis state machine: Invalid state

Axis state machine: Invalid state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D019	53273

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.22 D101, Hardware enable not active.

Hardware enable not active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D101	53505

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.23 D102, Safety card active, AX5000 in the safe condition

The AX5000 is in the safe condition because the safety card is active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D102	53506

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

Possible Causes	Solutions
The AX5000 is in the safe state (emergency stop circuit still active, cabling fault etc.) and should be enabled.	Place the system in readiness for operation again.

Please consider this note!

The safety card has been triggered by a certain event. Examine all safety-relevant functions of the system that could trigger such an event.

4.24 D180, SCI communication Control<->Front unit: Frame error

SCI communication Control<->Front unit: Frame error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D180	53632

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.25 D181, SCI communication Control<->Front unit: Parity error

SCI communication Control<->Front unit: Parity error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D181	53633

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.26 D182, SCI communication Control<->Front unit: RX-Data missing

SCI communication Control<->Front unit: RX-Data missing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D182	53634

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.27 D183, SCI communication Control<->Front unit: SCI error

SCI communication Control<->Front unit: SCI error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D183	53635

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.28 D184, SCI communication Control<->Front unit: Timeout error

SCI communication Control<->Front unit: Timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D184	53636

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.29 D185, SCI communication Control<->Front unit: Checksum error

SCI communication Control<->Front unit: Checksum error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D185	53637

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.30 D186, SCI communication Control<->Front unit: Byte count error

SCI communication Control<->Front unit: Byte count error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D186	53638

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.31 D187, SCI communication Control<->Front unit: Command denied

SCI communication Control<->Front unit: Command denied

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D187	53639

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.32 D188, SCI communication Control<->Front unit: Wrong command

SCI communication Control<->Front unit: Wrong command

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D188	53640

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.33 D189, SCI communication Control<->Front unit: Command error

SCI communication Control<->Front unit: Command error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D189	53641

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.34 D18A, SCI communication Control<->Front unit: Timeout error

SCI communication Control<->Front unit: Timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D18A	53642

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.35 D18B, SCI communication Control<->Front unit: RX data error

SCI communication Control<->Front unit: RX data error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D18B	53643

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.36 D18C, SCI communication Control<->Front unit: Wrong channel

SCI communication Control<->Front unit: Wrong channel

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D18C	53644

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.37 D18D, SCI communication Control<->Front unit: Buffer overflow

SCI communication Control<->Front unit: Buffer overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D18D	53645

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.38 D18E, SCI communication Front<->Control unit: Frame error

SCI communication Front<->Control unit: Frame error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D18E	53646

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.39 D18F, SCI communication Front<->Control unit: Parity error

SCI communication Front<->Control unit: Parity error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D18F	53647

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.40 D190, SCI communication Front<->Control unit: Wrong checksum

SCI communication Front<->Control unit: Wrong checksum

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D190	53648

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.41 D191, SCI communication Front<->Control unit: Timeout error

SCI communication Front<->Control unit: Timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D191	53649

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.42 D192, SCI communication Front<->Control unit: Response timeout error

SCI communication Front<->Control unit: Response timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D192	53650

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.43 D193, SCI communication Front<->Control unit: Buffer overflow

SCI communication Front<->Control unit: Buffer overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D193	53651

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.44 D194, SCI communication Control<->Front unit: SCI reset called

SCI communication Control<->Front unit: SCI reset called

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D194	53652

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.45 D195, SCI communication Control<->Front unit: Byte count error

SCI communication Control<->Front unit: Byte count error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D195	53653

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.46 D196, SCI communication Control<->Front unit: Buffer overflow

SCI communication Control<->Front unit: Buffer overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D196	53654

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.47 D1B0, SCI communication Control - Option card: Frame error

SCI communication Control<->Front unit: Frame error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B0	53680

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.48 D1B1, SCI communication Control - Option card: Parity error

SCI communication Control<->Front unit: Parity error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B1	53681

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.49 D1B2, SCI communication Control - Option card: RX-Data missing

SCI communication Control<->Front unit: RX-Data missing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B2	53682

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.50 D1B3, SCI communication Control - Option card: SCI error

SCI communication Control<->Front unit: SCI error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B3	53683

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.51 D1B4, SCI communication Control - Option card: Timeout error

SCI communication Control<->Front unit: Timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B4	53684

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.52 D1B5, SCI communication Control - Option card: Checksum error

SCI communication Control<->Front unit: Checksum error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B5	53685

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.53 D1B6, SCI communication Control - Option card: Byte count error

SCI communication Control<->Front unit: Byte count error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B6	53686

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.54 D1B7, SCI communication Control - Option card: Command denied

SCI communication Control<->Front unit: Command denied

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B7	53687

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.55 D1B8, SCI communication Control - Option card: Wrong command

SCI communication Control<->Front unit: Wrong command

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B8	53688

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.56 D1B9, SCI communication Control - Option card: Command error

SCI communication Control<->Front unit: Command error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1B9	53689

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.57 D1BA, SCI communication Control - Option card: Timeout error

SCI communication Control<->Front unit: Timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1BA	53690

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.58 D1BB, SCI communication Control - Option card: RX data error

SCI communication Control<->Front unit: RX data error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1BB	53691

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.59 D1BC, SCI communication Control - Option card: Wrong channel

SCI communication Control<->Front unit: Wrong channel

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1BC	53692

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.60 D1BD, SCI communication Control - Option card: Buffer overflow

SCI communication Control<->Front unit: Buffer overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1BD	53693

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.61 D1BE, SCI communication Front<->Control unit: Frame error

SCI communication Front<->Control unit: Frame error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1BE	53694

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.62 D1BF, SCI communication Front<->Control unit: Parity error

SCI communication Front<->Control unit: Parity error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1BF	53695

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.63 D1C0, SCI communication Front<->Control unit: Wrong checksum

SCI communication Front<->Control unit: Wrong checksum

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C0	53696

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.64 D1C1, SCI communication Front<->Control unit: Timeout error

SCI communication Front<->Control unit: Timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C1	53697

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.65 D1C2, SCI communication Front<->Control unit: Response timeout error

SCI communication Front<->Control unit: Response timeout error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C2	53698

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.66 D1C3, SCI communication Front<->Control unit: Buffer overflow

SCI communication Front<->Control unit: Buffer overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C3	53699

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.67 D1C4, SCI communication Control - Option card: SCI reset called

SCI communication Control<->Front unit: SCI reset called

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C4	53700

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.68 D1C5, SCI communication Control - Option card: Byte count error

SCI communication Control<->Front unit: Byte count error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C5	53701

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.69 D1C6, SCI communication Control - Option card: Buffer overflow

SCI communication Control<->Front unit: Buffer overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D1C6	53702

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.70 D200, Firmware update successful!

Firmware update successful! Summary code: 0x0001: Bootloader update, 0x0002: ESC eeprom update, 0x0004 Identity object update, 0x00008: Main DSP update, 0x0010: Feedback DSP update

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D200	53760

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.71 D300, Format error counters in e2prom successful!

Format error counters in e2prom successful!

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D300	54016

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.72 D400, ESC: PLL timeout

ESC: PLL timeout

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D400	54272

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.73 D401, ESC: Io-Sync timeout

ESC: Io-Sync timeout

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D401	54273

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.74 D402, Info procedure command: state change

Info procedure command: state change

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D402	54274

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.75 D403, ESC state machine: State change active

ESC state machine: State change active

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D403	54275

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.76 D404, ESC state machine: Error flag not cleared

ESC state machine: Error flag not cleared

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D404	54276

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.77 D500, External ADC: Reference voltage invalid

External ADC: Reference voltage invalid

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D500	54528

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.78 D780, Feedback Parameter Channel EnDat: CRC error

Feedback Parameter Channel EnDat: CRC error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D780	55168

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.79 D781, Feedback Parameter Channel EnDat: Mode CRC error

Feedback Parameter Channel EnDat: Mode CRC error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D781	55169

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.80 D782, Feedback Parameter Channel EnDat: Timeout encoder response

Feedback Parameter Channel EnDat: Timeout encoder response

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D782	55170

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.81 D783, Feedback Parameter Channel EnDat: Timeout encoder response

Feedback Parameter Channel EnDat: Timeout encoder response

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D783	55171

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.82 D784, Feedback Parameter Channel EnDat: Wrong response

Feedback Parameter Channel EnDat: Wrong response

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D784	55172

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.83 D786, Feedback Parameter Channel EnDat: Encoder not ready

Feedback Parameter Channel EnDat: Encoder not ready

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D786	55174

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.84 D787, Feedback Parameter Channel EnDat: Formatting OEM memory

Feedback Parameter Channel EnDat: Formatting OEM memory

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D787	55175

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.85 D808, Feedback Parameter Channel Hiperface: Wrong analog channel

Feedback Parameter Channel Hiperface: Wrong analog channel

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D808	55304

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.86 D820, Feedback (EnDat2.2): Invalid diagnostic data

Feedback (EnDat2.2) CRC error. Invalid feedback temperature 1 or 2 (P-0-0169).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D820	55328

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.87 D821, Feedback (EnDat2.2): Invalid diagnostic data

Feedback (EnDat2.2) diagnostic data error. Invalid feedback error word, warning word, temperature 1 / 2 (P-0-0169).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
D821	55329

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.88 DC30, I2C communication: Save error ID 1

I2C communication: Save error ID 1

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC30	56368

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.89 DC31, I2C communication: Save error ID 2

I2C communication: Save error ID 2

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC31	56369

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.90 DC32, I2C communication: Save parameter

I2C communication: Save parameter

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC32	56370

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.91 DC33, I2C communication: Save operation time 1

I2C communication: Save operation time 1

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC33	56371

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.92 DC34, I2C communication: Save operation time 2

I2C communication: Save operation time 2

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC34	56372

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.93 DC35, I2C communication: Read, Wrong byte count

I2C communication: Read, Wrong byte count

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC35	56373

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.94 DC36, I2C communication: Read, No response

I2C communication: Read, No response

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC36	56374

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.95 DC37, I2C communication: Read, No acknowledge

I2C communication: Read, No acknowledge

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC37	56375

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.96 DC38, I2C communication: Write, Wrong byte count

I2C communication: Write, Wrong byte count

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC38	56376

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.97 DC39, I2C communication: Write, No response

I2C communication: Write, No response

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC39	56377

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.98 DC3A, I2C communication: Different operation time

I2C communication: Different operation time

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC3A	56378

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.99 DC3B, I2C communication: Job buffer full

I2C communication: Job buffer full

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC3B	56379

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.100 DC3C, I2C communication: No safety hardware

I2C communication: No safety hardware

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC3C	56380

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.101 DC3D, I2C communication: No option hardware

I2C communication: No option hardware

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC3D	56381

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.102 DC3E, I2C communication: Device operation time overflow

I2C communication: Device operation time overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC3E	56382

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.103 DC3F, I2C communication: Channel operation time overflow

I2C communication: Channel operation time overflow

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DC3F	56383

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.104 DCB0, LCD: Wrong ESC state

LCD: Wrong ESC state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB0	56496

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.105 DCB1, LCD: Wrong axis state

LCD: Wrong axis state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB1	56497

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.106 DCB2, LCD: Unknown cyclic job

LCD: Unknown cyclic job

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB2	56498

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.107 DCB3, LCD: Unknown job

LCD: Unknown job

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB3	56499

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.108 DCB4, LCD: Unknown state

LCD: Unknown state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB4	56500

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.109 DCB5, LCD: Unknown state

LCD: Unknown state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB5	56501

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.110 DCB6, LCD: Unknown state

LCD: Unknown state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB6	56502

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.111 DCB7, LCD: Unknown state

LCD: Unknown state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB7	56503

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.112 DCB8, LCD: Unknown menu state

LCD: Unknown menu state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB8	56504

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.113 DCB9, LCD: Interface error

LCD: Interface error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCB9	56505

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.114 DCBA, LCD: Invalid state

LCD: Invalid state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCBA	56506

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.115 DCBB, LCD: Communication error

LCD: Communication error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DCBB	56507

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.116 DD42, Power management: DC link current in limit

Power management: DC link current in limit

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD42	56642

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.117 DD44, Power management: Chopper IGBT for DC link interface X02 not ready for operation

The chopper IGBT for DC link interface X02 is not ready for operation because the internal power supply is in the safe state. Check state of the AX5801 or AX5805.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD44	56644

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.118 DD80, Control unit: Main loop time exceeded

Control unit: Main loop time exceeded

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD80	56704

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.119 DD81, Control unit: End of stack reached

Control unit: End of stack reached

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD81	56705

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.120 DD82, Front unit: Main loop time exceeded

Front unit: Main loop time exceeded

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD82	56706

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.121 DD83, Front unit: End of stack reached

Front unit: End of stack reached

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD83	56707

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.122 DD90, Front unit, build drive system: Timeout reached

Front unit, build drive system: Timeout reached by disabling cyclic mainloop commands

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DD90	56720

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.123 DFFF, Debug firmware, replace "As soon as possible"!

Debug firmware: Replace ASAP!

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
DFFF	57343

Class	Type
Info	Information / Warning

Standard Reaction	Reset
No	Information: No reset required.

4.124 E15F, Process data mapping: Could not add the function pointer to the lookup table.

Process data mapping: Could not add the function pointer to the lookup table.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
E15F	57695

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
A problem has occurred with the AT / MDT list.	Check whether data IDNs can be omitted during process data linking (AT / MDT).

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016" and "S-0-0024"

4.125 E160, Process data mapping: Mapping code of IDN %s could not be copied.

Process data mapping: code could not be copied. E.g. not enough RAM available.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
E160	57696

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
A problem has occurred with the AT / MDT list.	Check whether data IDNs can be omitted during process data linking (AT / MDT).

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016" and "S-0-0024"

4.126 E290, High-priority processes cannot be processed

The high-priority processes cannot be processed within the cycle time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
E290	58000

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
	Check whether data IDNs can be omitted during process data linking (AT / MDT).

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016" and "S-0-0024"

4.127 E300, The IO-Watchdog has been disabled!!!! (User mode debugging!)

The IO watchdog has been disabled for a user mode debugging session.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
E300	58112

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

4.128 E581, External Periphery - Control card: Reading the ESC-eeprom failed

The PDI has no access to the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
E581	58753

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
Closed loop ramp	Warning: No reset required.

Possible Causes	Solutions
The EtherCAT master has not enabled the access.	

4.129 ECD0, Positive limit switch warning.

Positive limit switch warning.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ECD0	60624

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The axis has been moved to the positive limit switch.	Please move the axis away from the positive limit switch.

4.130 ECD1, Negative limit switch warning.

Negative limit switch warning.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ECD1	60625

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The axis has been moved to the negative limit switch.	Please move the axis away from the negative limit switch.

4.131 ECD2, Amplifier overload utilisation warning.

Amplifier overload utilisation warning level has reached.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ECD2	60626

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
Amplifier overload utilisation is greater than warning level in P316.	

4.132 ED00, Motor over-temperature

The motor temperature has reached a critical value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED00	60672

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The motor is about to overheat.	

Please consider this note!

If you ignore this warning and the motor temperature exceeds the parametrized value of IDN "S-0-0204", the servo driver will turn off with error "FD07".

Further Information
AX5000_IDN-Description: "S-0-0204"

4.133 ED01, Overload - motor

The motor load has reached a critical value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED01	60673

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The motor is just below the overload limit.	

Please consider this note!

If you ignore this warning and the motor load exceeds a critical value, the servo driver will turn off with error "FD17".

4.134 ED40, Overload - Internal brake resistor

The load of the internal brake resistor has reached a critical value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED40	60736

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The internal brake resistor is just below the overload limit. If the limit value is exceeded, the brake resistor will be turned off and the internal ballast power will be lost.	

Please consider this note!

If you ignore this warning and the utilization of the internal brake resistor continues to increase, it will be automatically limited by reducing the braking current and the voltage in the DC link can continue to increase, to the point where the servo driver turns off with error "FD4F".

4.135 ED41, Overload - External brake resistor

The load of the external brake resistor has reached a critical value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED41	60737

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The external brake resistor is just below the overload limit. If the limit value is exceeded, the brake resistor will be turned off and the internal ballast power will be lost.	

Please consider this note!

If you ignore this warning and the load of the external brake resistor continues to increase, it will be turned off and the voltage in the DC link can continue to increase, to the point where the servo driver turns off with error "FD4F".

4.136 ED42, Over-temperature - Amplifier

The servo driver temperature has reached a critical value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED42	60738

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The servo driver is about to overheat.	

Please consider this note!

If you ignore this warning and the servo driver temperature continues to increase, the servo driver will turn off with error "FD4D".

4.137 ED43, Under-voltage - DC link

The DC link voltage has not yet reached the default value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED43	60739

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
The power stage is already switched off	Warning: No reset required.

Possible Causes	Solutions
The DC link has not been loaded yet.	

Please consider this note!

If the DC link voltage does not reach the default value, the servo driver is not ready for use or turns off during operation with the error "FD4B".

4.138 ED46, U_mains too high

U_mains too high

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED46	60742

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
The DC link has not been loaded yet.	

Please consider this note!

If the DC link voltage does not reach the default value, the servo driver is not ready for use or turns off during operation with the error "FD4B".

4.139 ED47, U_mains too low

U_mains too low

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED47	60743

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
The power stage is already switched off	Warning: No reset required.

Possible Causes	Solutions
The DC link has not been loaded yet.	

Please consider this note!

If the DC link voltage does not reach the default value, the servo driver is not ready for use or turns off during operation with the error "FD4B".

4.140 ED60, Feedback - Warning bit set

The feedback system has diagnosed a warning and set the warning bit.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED60	60768

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
Internal warning of the feedback system.	

4.141 ED61, Feedback battery warning

The feedback system has diagnosed a battery warning.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
ED61	60769

Class	Type
Warning	Warning / Information

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
Battery voltage is under warinig threshold. Position is valid.	Next time change battery when drive is in Op! Then the feedback position is continue valid. To clear the warning set flag "Reset feedback battery warning" in P-0357 for one PreOp to SafeOp transition. After that clear flag "Reset feedback battery warning" in P-0-0357.

4.142 F010, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F010	61456

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.143 F011, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F011	61457

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.144 F012, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F012	61458

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.145 F013, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F013	61459

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.146 F014, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F014	61460

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.147 F015, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F015	61461

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.148 F016, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F016	61462

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.149 F017, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F017	61463

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.150 F018, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F018	61464

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.151 F019, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F019	61465

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.152 F01A, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F01A	61466

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.153 F01B, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F01B	61467

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.154 F01C, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F01C	61468

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.155 F01D, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F01D	61469

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.156 F01E, Firmware-Download: Flash error

A fatal error occurred while downloading the firmware into the flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F01E	61470

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal flash error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.157 F030, Firmware-Download: Invalid file name

The file name don't start with "AX5".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F030	61488

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have renamed the firmware file.	Use the original name of the firmware file.
You have selected a wrong firmware file.	Use a valid firmware file.

4.158 F032, Firmware download: Firmware file does not match the device

The device ID of the firmware file does not correlate to the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F032	61490

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a wrong firmware file.	Use a valid firmware file.

4.159 F033, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F033	61491

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.160 F040, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F040	61504

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.161 F041, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F041	61505

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.162 F042, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F042	61506

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.163 F043, Firmware-Download: Read of the hardware IDs failed.

The bootloader tried to read the hardware IDs. The read operation failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F043	61507

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.164 F044, Firmware-Download: Firmware file is wrong or defective

The firmware file is wrong or defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F044	61508

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
You have selected a wrong firmware file.	Use a valid firmware file.

4.165 F045, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F045	61509

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.166 F046, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F046	61510

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.167 F047, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F047	61511

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.168 F048, Firmware-Download: Hardware is defective

The firmware file can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F048	61512

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.169 F049, Firmware-Download: Hardware is defective

The firmware file can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F049	61513

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.170 F04A, Firmware-Download: Hardware is defective

The firmware file can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F04A	61514

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.171 F04B, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F04B	61515

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.172 F04C, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F04C	61516

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.173 F04D, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F04D	61517

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.174 F04E, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F04E	61518

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.175 F04F, Firmware-Download: Wrong TwinCAT version

The new firmware is not compatible to the TwinCAT-Version.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F04F	61519

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You are working with an incompatible TwinCAT version.	Ask our support.

4.176 F050, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F050	61520

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.177 F051, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F051	61521

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.178 F052, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F052	61522

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.179 F053, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F053	61523

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.180 F054, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F054	61524

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.181 F055, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F055	61525

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.182 F056, Firmware-Download: Firmware file is wrong or defective

The firmware file is wrong or defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F056	61526

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
You have selected a wrong firmware file.	Use a valid firmware file.

4.183 F057, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F057	61527

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.184 F058, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F058	61528

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.185 F059, Firmware-Download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F059	61529

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.186 F060, Firmware download: Firmware file is defective

The firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F060	61536

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.187 F061, Firmware download: Hardware is defective

The firmware file can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F061	61537

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.188 F062, Firmware download: Hardware is defective

The firmware file can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F062	61538

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.189 F063, Firmware download: Firmware file or device is defective

The device is defective or the firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F063	61539

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.190 F064, Firmware download: Firmware file or device is defective

The device is defective or the firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F064	61540

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.191 F065, Firmware download: Firmware file is wrong

The firmware file is wrong and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F065	61541

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a wrong firmware file.	Use a valid firmware file.

4.192 F066, Firmware download: Firmware file or device is defective

The device is defective or the firmware file is defective and can't be loaded into the device.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F066	61542

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
A internal fatal hardware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.193 F067, Firmware download: Internal configuration error

The internal units of the AX5000 do not match.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F067	61543

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An internal configuration error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.194 F068, Firmware download: Bootloader update required.

The firmware file needs features which are not supported by the currently installed bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F068	61544

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The version of the installed bootloader don't fulfills the requirements.	Install an actual bootloader version.

4.195 F06A, Firmware download: Control unit eeprom not accessible.

Firmware download: Control unit eeprom not accessible.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F06A	61546

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.196 F06B, Firmware download: Front unit eeprom not accessible.

Firmware download: Front unit eeprom not accessible.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F06B	61547

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.197 F06C, Firmware download: Driver unit eeprom not accessible.

Firmware download: Driver unit eeprom not accessible.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F06C	61548

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.198 F06D, Firmware download: Power unit eeprom not accessible.

Firmware download: Power unit eeprom not accessible.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F06D	61549

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.199 F06E, Firmware download: Safety unit eeprom not accessible.

Firmware download: Safety unit eeprom not accessible.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F06E	61550

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.200 F06F, Firmware download: Safety unit eeprom not accessible.

Firmware download: Safety unit eeprom not accessible.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F06F	61551

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.201 F070, Firmware download: Firmware index for the control unit don't match

The firmware index of the control unit isn't supported by the firmware file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F070	61552

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is invalid.	Choose an appropriate firmware file. Take the highest "Build" of the used version.

4.202 F071, Firmware download: Firmware index for the front unit don't match

The firmware index of the front unit isn't supported by the firmware file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F071	61553

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is invalid.	Choose an appropriate firmware file. Take the highest "Build" of the used version.

4.203 F072, Firmware download: Firmware index for the driver unit don't match

The firmware index of the driver unit isn't supported by the firmware file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F072	61554

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is invalid.	Choose an appropriate firmware file. Take the highest "Build" of the used version.

4.204 F073, Firmware download: Firmware index for the power unit don't match

The firmware index of the power unit isn't supported by the firmware file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F073	61555

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is invalid.	Choose an appropriate firmware file. Take the highest "Build" of the used version.

4.205 F074, Firmware download: Firmware index for the safety unit don't match

The firmware index of the safety unit isn't supported by the firmware file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F074	61556

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is invalid.	Choose an appropriate firmware file. Take the highest "Build" of the used version.
The safety unit is invalid.	Replace the safety unit as necessary.

4.206 F075, Firmware download: Firmware index for the option unit don't match

The firmware index of the option unit isn't supported by the firmware file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F075	61557

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is invalid.	Choose an appropriate firmware file. Take the highest "Build" of the used version.
The option unit is invalid.	Replace the option unit as necessary.

4.207 F076, Firmware download: Firmware index for the control unit can't be read

The firmware index of the control unit can't be read by the bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F076	61558

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.208 F077, Firmware download: Firmware index for the front unit can't be read

The firmware index of the front unit can't be read by the bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F077	61559

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.209 F078, Firmware download: Firmware index for the driver unit can't be read

The firmware index of the driver unit can't be read by the bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F078	61560

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.210 F079, Firmware download: Firmware index for the power unit can't be read

The firmware index of the power unit can't be read by the bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F079	61561

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.211 F07A, Firmware download: Firmware index for the safety unit can't be read

The firmware index of the safety unit can't be read by the bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F07A	61562

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The safety unit is defective.	Replace the safety unit as necessary.

4.212 F07B, Firmware download: Firmware index for the option unit can't be read

The firmware index of the option unit can't be read by the bootloader.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F07B	61563

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The option unit is defective.	Replace the option unit as necessary.

4.213 F090, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F090	61584

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.214 F091, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F091	61585

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.215 F092, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F092	61586

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.216 F093, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F093	61587

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.217 F094, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F094	61588

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.218 F095, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F095	61589

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.219 F096, Firmware download: FPGA error option unit

On the option unit the bootloader has detected an internal FPGA error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F096	61590

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option unit is defective.	Replace the option unit as necessary.

4.220 F0A0, FPGA error: configuration could not be loaded

The internal FPGA configuration could not be loaded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0A0	61600

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware file is defective.	Exchange the defective firmware file to a valid one.
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.221 F0A1, FPGA error: Configuration file is missing

The internal FPGA configuration file was not found.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0A1	61601

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.222 F0A2, FPGA error: Loading of the configuration failed.

An error occurred during the configuration load sequence of the FPGA.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0A2	61602

Class	Type
Error	Bootloader error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.

4.223 F0B0, Serial Flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B0	61616

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.224 F0B1, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B1	61617

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.225 F0B2, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B2	61618

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.226 F0B3, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B3	61619

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.227 F0B4, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B4	61620

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.228 F0B5, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B5	61621

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.229 F0B6, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B6	61622

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.230 F0B7, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B7	61623

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.231 F0B8, Serial flash error

No write access to the serial flash memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B8	61624

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
No write access to the serial flash memory during firmware download.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The system data could not be written to the serial flash memory during operation.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.232 F0B9, Serial flash error: Bootloader defective

The "Mini-Bootloader" or the normal Bootloader is defective

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0B9	61625

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A Fatal software error.	Ask our support.

Please consider this note!

The current boot loader version can be found in the TCDriveManager under Device Info.

4.233 F0BA, Serial flash error: Internal firmware file is defective

The internal firmware file is defective.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0BA	61626

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
A Fatal software error.	Re-load the same firmware file to the AX5000, disconnect the servo drive from mains (incl. 24 V supply voltage) and try again. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Please consider this note!

The current firmware version can be found in the TCDriveManager under Device Info.

4.234 F0BB, Serial flash error: Internal system data file not found

The internal system data file not found.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0BB	61627

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A Fatal software error.	Ask our support.

Please consider this note!

If the system data file is no longer available, the following data are no longer available: Error history, EtherCAT address, Device identifier and Modulo data.

Further Information
AX5000_IDN-Description: "S-0-0076", "P-0-0020", "P-0-0021", "P-0-0850", "P-0-0851"

4.235 F0BC, Serial flash error: Internal system data file is defective

The internal system data file is defective.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0BC	61628

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A Fatal software error.	Ask our support.

Please consider this note!

If the system data file is defective, the following data are no longer available: Error history, EtherCAT address, Device identifier and Modulo data.

Further Information
AX5000_IDN-Description: "S-0-0076", "P-0-0020", "P-0-0021", "P-0-0850", "P-0-0851"

4.236 F0BD, Serial flash error: Initialization failed

The general initialization of the serial flash memory has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0BD	61629

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.237 F0BE, Serial flash error: Processing failed

General processing of the serial flash memory data has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0BE	61630

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.238 F0BF, Serial flash error: Write error

No write access to the serial flash memory due to an address range error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0BF	61631

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
Fatal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.239 F0C0, Serial flash error: Diagnostics file not found

The diagnostics messages file could not be found.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0C0	61632

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The serial flash don't contains the required file.	Install an actual firmware file.

4.240 F0C1, Serial flash error: Internal error

Processing of the diagnostics messages: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F0C1	61633

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.241 F100, Axis state machine: Communication error

An EtherCAT communication error occurred during active axis control.

In the case of a two-axis device, often as a result of a feedback error in the other channel.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F100	61696

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The axis state machine has reverted to the "Control and power section ready" state due to an EtherCAT communication error.	The PC is defective; there is an EMC problem; problems with the EtherCAT cabling; synchronization problems (distributed clocks)

4.242 F101, Axis state machine: Initialize error

An attempt was made to activate an uninitialized operating mode.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F101	61697

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An attempt was made to select an uninitialized operating mode with the control word S-0-0134.	Initialize the desired operating mode.

Further Information
AX5000_IDN-Description: "S-0-0033" - "S-0-0035" and "S-0-0284" - "S-0-0287"

4.243 F102, Axis state machine: Loss of the hardware enable

The configured hardware enable input (plug X06) has been deactivated by an external event, even though the AX5000 was under control.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F102	61698

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Problems with the digital inputs (Connector "X06").	Check the digital inputs (Connector "X06").

Further Information
AX5000_IDN-Description: "P-0-0400"

4.244 F103, Axis state machine: Got no timer

A timer is not available.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F103	61699

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0400"

4.245 F104, Axis state machine: NC error handling - Timeout

With NC error handling activated (P-0-0350), the AX5000 was not stopped by the NC within the parametrized time period (P-0-0351).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F104	61700

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The selected time period is too short.	Increase the time period if your application allows this.
The movement is too complex for the parametrized time period.	Program a movement that is suitable for the time period.

Further Information
AX5000_IDN-Description: "P-0-0350" and "P-0-0351"

4.246 F105, Axis state machine: Maximum drive off delay time elapsed

The controlled stopping of the AX5000 in the event of an error or via the axis state machine is monitored with the time from the IDN "S-0-0273". The AX5000 could not be stopped within the parametrized time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F105	61701

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The parametrized time period is too short.	Increase the time period, if the application allows this.
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.
An unrecognized commutation error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

Further Information
AX5000_IDN-Description: "S-0-0273"

4.247 F106, Axis state machine: No motor configured

An attempt was made to enable the axis, even though no motor is configured.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F106	61702

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
No motor is configured.	Configure a motor.

Further Information
AX5000_IDN-Description: "P-0-0053"

4.248 F107, Axis state machine: Current control not ready to enable

The current controller is not ready to enable when selecting the operating mode "Position , velocity or torque control".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F107	61703

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
It is no valid commutation angle present.	Assign a commutation angle.

4.249 F108, Axis state machine: Velocity control not ready

The velocity controller is not ready to enable when selecting the operating mode "Position or velocity control".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F108	61704

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback position is invalid.	Check the feedback system.

4.250 F109, Axis state machine: Position control not ready

The position controller is not ready to enable when selecting the operating mode "Position or velocity control".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F109	61705

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback position is invalid.	Check the feedback system.

4.251 F10A, Axis state machine: Wake and Shake not idle

The Wake and Shake command could not be executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F10A	61706

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.252 F10B, Axis State Machine: Wake and Shake command failed

The execution of the Wake and Shake command has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F10B	61707

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.253 F10C, Axis State Machine: Not possible to enable

The axis is in calibration mode and cannot be started.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F10C	61708

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have started the internal calibration mode.	Disable the internal calibration mode.

4.254 F10D, Axis State Machine: Not possible to enable

The control loops of the axis are used by internal technology functions.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F10D	61709

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
One or more control loops are in use by a technology or by an internal function.	Don't try to enable the axis while one of this functions is active.

4.255 F10E, Axis State Machine: The motor connection check failed.

The check of the motor connection failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F10E	61710

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.256 F10F, Axis State Machine: The configured error propagation input isn't active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F10F	61711

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.257 F110, Axis State Machine: The motor management isn't ready to enable. E.g. P-0-0093 is zero.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F110	61712

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.258 F11F, The advanced parametrization introduced with firmware version 2.10 is required.

The advanced parametrization introduced with firmware version 2.10 is required.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F11F	61727

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
It is NOT recommended to use a parametrization ('startup list') created for a firmware version less than v2.10!	Use an appropriate TcDriveManager to create a new parametrization ('startup list'). Please contact the support if this isn't possible.

4.259 F120, Command "Motor and feedback check": Timeout

The timeout of the command "motor and feedback check" elapsed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F120	61728

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.260 F121, Command "Motor and feedback check": No hardware enable

The execution of the "Check motor and feedback" command has failed because the configured hardware enable is missing.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F121	61729

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The hardware enable of the corresponding terminal point on plug "X06" is missing.	Apply the hardware enable (IDN P-0-0400).

4.261 F122, Command "Motor and feedback check": Current controller is not ready to enable.

The command "Motor and feedback check" can't be executed because the current controller is not ready to enable.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F122	61730

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
No valid commutation offset.	See operating instructions

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Commutation methods" and AX5000_IDN-Description-->P-0-0160.

4.262 F123, Command "Motor and feedback check" failed

The command "Motor and feedback check" can't be executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F123	61731

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.263 F124, Reset-Command: Got no timer

The Reset command can't allocate a timer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F124	61732

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.264 F125, Reset-Command: Got no timer

The Reset command can't allocate a timer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F125	61733

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.265 F126, Reset-Command: Initialization failed

The Reset command failed, because the initialization failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F126	61734

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.266 F127, Reset-Command: Feedback DSP - timeout

A timeout occurred while the reset command on the front DSP is executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F127	61735

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.267 F128, Reset-Command: One or more of the pending errors is not resettable

The reset command has failed because at least one of the present errors cannot be reset.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F128	61736

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
This diagnostic message is just a hint that one of the present errors cannot be reset.	Rectify the present error.

4.268 F129, Reset-Command: Reset is not executable

Reset command not executable, the axis hasn't been stopped yet.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F129	61737

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The axis is still in motion.	Wait for the axis to come to a standstill and then repeat the command.

4.269 F12A, Error reaction "Torque off" forced

The error reaction "torque off" has been triggered and executed with the command P-0-0310.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F12A	61738

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Standard reactions to errors can be tested with the command P-0-0310. The resulting diagnostic message is exclusively a reminder that there is actually no error.	This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

4.270 F12B, Error reaction "Shorted coils brake" forced

The error reaction "Shorted coils brake" has been triggered and executed with the command P-0-0310.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F12B	61739

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Standard reactions to errors can be tested with the command P-0-0310. The resulting diagnostic message is exclusively a reminder that there is actually no error.	This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

4.271 F12C, Error reaction "Open loop ramp" forced

The error reaction "Open loop ramp" has been triggered and executed with the command P-0-0310.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F12C	61740

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Standard reactions to errors can be tested with the command P-0-0310. The resulting diagnostic message is exclusively a reminder that there is actually no error.	This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

4.272 F12D, Error reaction "Closed loop ramp" forced

The error reaction "Closed loop ramp" has been triggered and executed with the command P-0-0310.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F12D	61741

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Standard reactions to errors can be tested with the command P-0-0310. The resulting diagnostic message is exclusively a reminder that there is actually no error.	This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

4.273 F12E, Error reaction "NC-Handling" forced

The error reaction "NC-Handling" has been triggered and executed with the command P-0-0310.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F12E	61742

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Standard reactions to errors can be tested with the command P-0-0310. The resulting diagnostic message is exclusively a reminder that there is actually no error.	This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

4.274 F12F, Command "Motor and feedback connection check": No enable permission from the safety option

The "Check motor and feedback connection" command has failed because there is no enable permission from the safety option.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F12F	61743

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The command is executed, but the safety card has been activated by a malfunction in the safety zone of the machine/plant.	Rectify the malfunction in the safety zone of the machine/plant and perform a reset.
The command is executed, but the safety card has been activated by a cable breakage in the 24 V supply to the card.	Rectify the cable breakage and perform a reset.

4.275 F130, Command "Wake and Shake": Timeout

The timeout of the command "Wake and Shake" elapsed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F130	61744

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.276 F131, Command "Reset": Feedback initialization failed

The feedback system could not be initialized during the execution of the "Reset" command.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F131	61745

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.277 F132, Command "Reset": Not possible - Internal hardware error

The execution of the "Reset" command has failed because an internal hardware error has occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F132	61746

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
There is an internal hardware error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call our support.

4.278 F133, Command "Reset": Not possible - Drive is still enabled

The execution of the "Reset" command has failed because the controller enable is still active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F133	61747

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The controller is still demanding a controller enable, even though theC1D-bit is present.	Check the SoE axis state machine on the master side.

4.279 F134, Command "Reset": Restart of the modulo calculation failed.

The execution of the "Reset" command has failed because the modulo calculation could not be recovered.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F134	61748

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.280 F135, Parameter Set Switching: Activation of the parameter set 0 failed.

The default parameter set 0 could not be activated, because the dataset is not valid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F135	61749

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.281 F136, Parameter Set Switching: Switching to parameter set x failed.

The parameter set x could not be activated, because the dataset is not valid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F136	61750

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.282 F137, Parameter Set Switching: Feature not available

The functionality of the parameter set switching is not available due to the chosen interface revision.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F137	61751

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.283 F138, Parameter Set Switching: Axis is in operation, switching not possible.

The parameter set switching is not possible. The axis is in operation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F138	61752

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.284 F139, Parameter Set Switching: Internal error.

The parameter set switching is not possible. Internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F139	61753

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.285 F13A, Parameter Set Switching: Switching to parameter set x not possible.

The parameter set switching to dataset x isn't possible, because this data set isn't prearranged.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F13A	61754

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.286 F13B, Reset of the option card failed.

Reset of the option card failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F13B	61755

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	A fatal error occurred. A device reboot is required.

4.287 F13C, Reset command - Timeout

The timeout of the reset command elapsed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F13C	61756

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.288 F13E, Feedback error forced

A feedback error has been triggered with the command P-0-0310.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F13E	61758

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.289 F13F, Creation of the position interpolator failed

Creation of the position interpolator failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F13F	61759

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The memory space is insufficient.	If possible try to reduce the I/O cycle time.

4.290 F140, Build drive system: Failed

The system initialization has failed due to a general error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F140	61760

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.291 F141, Build drive system: Timeout

The system initialization has failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F141	61761

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.292 F142, Initialization of the current controller failed

The initialization of the current controller failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F142	61762

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.293 F143, Initialization of the velocity controller failed

The initialization of the velocity controller failed].

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F143	61763

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.294 F144, Initialization of the position controller failed

The initialization of the position controller failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F144	61764

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.295 F145, Initialization of the feedback failed

The initialization of the feedback failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F145	61765

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system has been incorrectly parametrized.	Check the parametrization of the feedback system (P-0-0150 or P-0-0180).
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0150" or "P-0-0180"

4.296 F146, Build drive system: Failed

The system initialization has failed due to a general error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F146	61766

Class	Type
Error	Software exception

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.297 F147, Build drive system: Memory error Front card

The system initialization has failed due to a memory error on the front card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F147	61767

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.298 F148, Build drive system: Unknown feedback system

The system initialization of the front card has failed due to an unknown feedback system. Please check P-0-0150 or P-0-0180.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F148	61768

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a feedback system that is not supported.	Check the parametrization of the feedback system. Please check P-0-0150 or P-0-0180.

Further Information
AX5000_IDN-Description: "P-0-0150" or "P-0-0180"

4.299 F149, Build drive system: Front card - Internal error

The system initialization has failed due to an internal software error on the front card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F149	61769

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.300 F14A, Build drive system: Unknown feedback system

The system initialization of the front card has failed due to an unknown feedback system. Please check P-0-0150 or P-0-0180.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14A	61770

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a feedback system that is not supported.	Check the parametrization of the feedback system. Please check P-0-0150 or P-0-0180.

Further Information
AX5000_IDN-Description: "P-0-0150" or "P-0-0180"

4.301 F14B, Build drive system: Memory error Control card

The system initialization has failed due to a memory error on the control card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14B	61771

Class	Type
Error	Software exception

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.302 F14C, Build drive system: Memory error Front card

The system initialization has failed due to a memory error on the front card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14C	61772

Class	Type
Error	Software exception

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.303 F14D, System memory deallocation: Feedback termination failed

The system memory deallocation could not be executed due to a memory error in the feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14D	61773

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.304 F14E, System memory deallocation: Command error

The system memory deallocation has failed due to a command error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14E	61774

Class	Type
Error	Software exception

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.305 F14F, System memory deallocation: Command error

The system memory deallocation has failed due to a command timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14F	61775

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.306 F150, Initialization of the feedback: Internal error

The feedback initialization has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F150	61776

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.307 F151, Initialization of the feedback: Timeout

The feedback initialization has failed due to a time out.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F151	61777

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.308 F152, Initialization of the feedback: Command failed

The feedback initialization has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F152	61778

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem

4.309 F153, Initialization of the feedback: No option card found

An attempt was made during the feedback initialization to use the option card, even though this is not present.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F153	61779

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
AX570x option card is not inserted or is defective.	Insert or exchange the card.
You have selected the AX570x option card by mistake during the parametrization of the feedback system IDN "P-0-0150" or "P-0-0180".	Change the parametrization of the feedback system.

Further Information
AX5000_IDN-Description: "P-0-0150" or "P-0-0180"

4.310 F154, Build drive system: Memory error option card

The system initialization has failed due to a memory error on the option card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F154	61780

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.311 F155, Build drive system: Option card - Unknown feedback system

The system initialization of the option card has failed due to an unknown feedback system. Please check P-0-0150 or P-0-0180.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F155	61781

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a feedback system that is not supported.	Check the parametrization of the feedback system. Please check P-0-0180.

Further Information
AX5000_IDN-Description: "P-0-0180"

4.312 F156, Build drive system: Option card - Internal error

The system initialization has failed due to an internal software error on the option card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F156	61782

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An internal software error has occurred on the AX570x option card.	Carry out a software update for the AX570x option card.
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.313 F157, Build drive system: Option card - Unknown feedback system

The system initialization of the option card has failed due to an unknown feedback system. Please check P-0-0150 or P-0-0180.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F157	61783

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a feedback system that is not supported.	Check the parametrization of the feedback system. Please check P-0-0180.

Further Information
AX5000_IDN-Description: "P-0-0180"

4.314 F158, System memory deallocation: Front card - Internal error

The system memory deallocation has failed due to an internal front card error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F158	61784

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.315 F159, System memory deallocation: Option card - Internal error

The system memory deallocation has failed due to an internal option card error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F159	61785

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.316 F15A, Feedback error: Plug connector combination invalid

The process and parameter data cannot be processed with the selected plug connector combination.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F15A	61786

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The process and parameter data of a feedback systems are not processed with X11 and X21, but in a combination of X11, X21 with X41, X42 (encoder option card).	Always process the data of a feedback systems with X11, X21 or X41, X42, i.e. either with the connectors on the front or with the connectors on the encoder option card.

4.317 F15B, Feedback error: No OCT support.

Feedback error: No OCT support.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F15B	61787

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The AX5000 hardware doesn't support the OCT interface. The serial number of the AX5000 is below 105 000.	Exchange the AX5000 with one with a serial number greater than 105 000.

4.318 F15F, No control loops allocated. Calibration mode active.

No control loops allocated. Calibration mode active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F15F	61791

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

4.319 F160, Process data mapping: Internal error

The processing of the AT / MDT list (S-0-0016 / S-0-0024) has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F160	61792

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A problem has occurred with the AT / MDT list.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0016" / "S-0-0024".
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.320 F161, Process data mapping: AT - S-0-0016

The process data mapping has failed due to incorrect parametrization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F161	61793

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An IDN has been entered in the IDN "S-0-0016" that does not exist in the firmware you are using.	Remove this IDN from "S-0-0016".

Further Information
AX5000_Operating-Instructions -Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016"

4.321 F162, Process data mapping: AT - S-0-0016

The process data mapping has failed due to incorrect parametrization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F162	61794

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An IDN has been entered in the IDN "S-0-0016" that cannot be transmitted cyclically with the amplifier telegram.	Remove this IDN from "S-0-0016".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016"

4.322 F163, Process data mapping: AT - Memory problem

The process data mapping has failed due to an out of memory exception.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F163	61795

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The memory space provided for the IDN "S-0-0016" is insufficient.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0016".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016"

4.323 F164, Process data mapping: Internal error

The processing of the AT list (S-0-0016) has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F164	61796

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A problem has occurred with the AT list.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0016".
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.324 F165, Process data mapping: AT - Too many IDNs

The process data mapping has failed due to too many IDNs in S-0-0016.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F165	61797

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The maximum number of IDNs listed in the IDN "S-0-0016" supported by the firmware has been exceeded.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0016".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016"

4.325 F166, Process data mapping: MDT - S-0-0024

The process data mapping has failed due to incorrect parametrization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F166	61798

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An IDN has been entered in the IDN "S-0-0024" that does not exist in the firmware you are using.	Remove this IDN from "S-0-0024".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0024"

4.326 F167, Process data mapping: MDT - S-0-0024

The process data mapping has failed due to incorrect parametrization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F167	61799

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An IDN has been entered in the IDN "S-0-0024" that cannot be transmitted cyclically with the master data telegram.	Remove this IDN from "S-0-0024".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0024"

4.327 F168, Process data mapping: MDT - Memory problem

The process data mapping has failed due to an out of memory exception.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F168	61800

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The memory space provided for the IDN "S-0-0024" is insufficient.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0024".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0024"

4.328 F169, Process data mapping: Internal error

The processing of the MDT-list (S-0-0024) generated an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F169	61801

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A problem has occurred with the MDT list.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0024".
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0024"

4.329 F16A, Process data mapping: MDT - Too many IDNs

The process data mapping has failed due to too many IDNs in S-0-0024.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F16A	61802

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The maximum number of IDNs listed in the IDN "S-0-0016" supported by the firmware has been exceeded.	Analyze the application and remove one or more unnecessary IDNs from "S-0-0024".

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0024"

4.330 F16B, Process data mapping: AT-list, double listed entry found

Process data mapping: AT-list, double listed entry found

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F16B	61803

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.331 F16C, Process data mapping: MDT-list, double listed entry found

Process data mapping: MDT-list, double listed entry found

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F16C	61804

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.332 F16D, Process data mapping: Internal error

The processing of the AT / MDT list (S-0-0016 / S-0-0024) has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F16D	61805

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.333 F16E, Process data mapping: Calculation of the AT-List shift times failed

The processing of the AT list (S-0-0016 / S-0-0024) has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F16E	61806

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.334 F16F, Process data mapping: Calculation of the MDT-List shift times failed

The processing of the MDT list (S-0-0016 / S-0-0024) has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F16F	61807

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.335 F17F, Command "Reset": The feedback serial number check failed.

The execution of the "Reset" command has failed because the feedback serial number seems to be different from that one before the reset is called.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F17F	61823

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.336 F180, Internal communication: SCI - Control card to front card

Initialization of the SCIs was unsuccessful.]

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F180	61824

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.337 F183, Feedback (general): Commutation feedback is not feedback 1

The commutation feedback was not parametrized as Feedback 1.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F183	61827

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The commutation feedback has not been selected under 'Feedback use' in IDN "P-0-0150" for Feedback 1.	Feedback 1 should be parametrized as commutation feedback.

Further Information
AX5000_IDN-Description: "P-0-0150"

4.338 F184, Feedback "general": Commutation feedback is not feedback 2

The external feedback was not parametrized as Feedback 2.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F184	61828

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The external feedback has not been selected under 'Feedback use' in IDN "P-0-0180" for Feedback 2.	Feedback 2 should be parametrized as external feedback.

Further Information
AX5000_IDN-Description: "P-0-0180"

4.339 F185, Internal communication: SCI - Control card to front card

A data transfer error occurred at the interface between the control card and the front card (Rx buffer is not empty).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F185	61829

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.340 F186, Internal communication: SCI - Control card to front card

The reset of the interface between the control card and the front card has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F186	61830

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.341 F187, Internal communication: SCI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F187	61831

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.342 F188, Internal communication: SCI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F188	61832

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.343 F189, Internal communication: SCI - Control card to front card

The communication of the interface between the control card and the front card has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F189	61833

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.344 F18A, Internal communication: SCI - Control card to front card

A faulty diagnostics number was transferred from the front card to the control card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F18A	61834

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.345 F18B, Internal communication: SCI - Control card to front card

The communication of the interface between the front card and the control card has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F18B	61835

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.346 F18C, Internal communication: SCI - Front card to control card

An unknown command was transferred from the front card to the control card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F18C	61836

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.347 F18D, Internal communication: SCI - Front card to control card

A timeout occurred at the interface between the front card and the control card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F18D	61837

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.348 F18E, Internal communication: SCI - Front card to control card

A data transfer problem occurred at the interface between the front card and the control card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F18E	61838

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.349 F18F, Internal communication: SCI - Front card to control card

The interface between the front card and the control card has received an unknown channel number.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F18F	61839

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.350 F190, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (number of received RX data incorrect).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F190	61840

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.351 F191, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (number of received RX data incorrect).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F191	61841

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.352 F192, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (number of received RX data incorrect).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F192	61842

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.353 F193, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (number of received RX data incorrect).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F193	61843

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.354 F194, Internal communication: SPI - Front card to Control card

A data transfer problem occurred at the interface between the control card and the front card (invalid RX data checksum).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F194	61844

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.355 F195, Internal communication: SPI - Front card to Control card

A data transfer problem occurred at the interface between the front card and the control card (number of received RX data incorrect).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F195	61845

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.356 F196, Internal communication: SPI - Front card to Control card

The general communication of the interface between the front card and the control card has failed due to an internal data fault.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F196	61846

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.357 F197, Internal communication: SPI - Front card to Control card

The general communication of the interface between the front card and the control card has failed due to an internal data fault.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F197	61847

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.358 F198, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (timeout during RX2 data processing).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F198	61848

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.359 F199, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (timeout during RX3 data processing).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F199	61849

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.360 F19A, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (timeout during RX4 data processing).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F19A	61850

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.361 F19B, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (invalid RX2 data checksum).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F19B	61851

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.362 F19C, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (invalid RX3 data checksum).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F19C	61852

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.363 F19D, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (invalid RX4 data checksum).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F19D	61853

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.364 F19E, Internal communication: SPI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (invalid safety data).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F19E	61854

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.365 F1A0, Internal communication: SCI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1A0	61856

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.366 F1A1, Internal communication: SCI - Control card to front card

A data transfer problem occurred at the interface between the control card and the front card

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1A1	61857

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.367 F1B0, Communication Control - Option unit: Initialization failed.

Communication Control - Option unit: Initialization failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B0	61872

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.368 F1B1, Option slot card: Commutation feedback not supported.

Option slot card: Commutation feedback not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B1	61873

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.369 F1B2, Option slot card: Additional feedback not feedback 2.

Option slot card: Additional feedback not feedback 2.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B2	61874

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.370 F1B5, Internal communication: SCI - Control card to option card

A data transfer error occurred at the interface between the control card and the option card (Rx buffer is not empty).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B5	61877

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.371 F1B6, Internal communication: SCI - Control card to option card

The reset of the interface between the control card and the option card has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B6	61878

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.372 F1B7, Internal communication: SCI - Control card to option card

A data transfer problem occurred at the interface between the control card and the option card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B7	61879

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.373 F1B8, Internal communication: SCI - Control card to option card

A data transfer problem occurred at the interface between the control card and the option card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B8	61880

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.374 F1B9, Internal communication: SCI - Control card to option card

The communication of the interface between the control card and the option card has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1B9	61881

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.375 F1BA, Internal communication: SCI - Control card to option card

A faulty diagnostics number was transferred from the control card to the option card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1BA	61882

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.376 F1BB, Internal communication: SCI - Control card to option card

A faulty diagnostics number was transferred from the front card to the control card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1BB	61883

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.377 F1BC, Internal communication: SPI - Control card to option card

A data transfer problem occurred at the interface between the control card and the option card (timeout during RX2 data processing).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1BC	61884

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.378 F1BD, Internal communication: SPI - Control card to option card

A data transfer problem occurred at the interface between the option card and the front card (timeout during RX3 data processing).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1BD	61885

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.379 F1D0, Internal communication: SCI - Control card to option card

A data transfer problem occurred at the interface between the control card and the option card (more data were received than expected).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1D0	61904

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.380 F1D1, Internal communication: The feedback unit don't supports the requested action.

Internal communication: The feedback unit don't supports the requested action. Try to update the firmware on the module.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F1D1	61905

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.381 F290, Cycle time exceeded: High priority process

The high-priority processes cannot be processed within the cycle time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F290	62096

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Check whether data IDNs can be omitted during process data linking (AT / MDT).

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016" and "S-0-0024"

4.382 F291, Cycle time exceeded: Low priority process

The low-priority processes cannot be processed within the cycle time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F291	62097

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal software error.	Check whether data IDNs can be omitted during process data linking (AT / MDT).

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Process data handling" and AX5000_IDN-Description: "S-0-0016" and "S-0-0024"

4.383 F292, Internal task scheduler error

The monitoring function that checks that all internal processes were called has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F292	62098

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.384 F2A0, Commutation error

The drive detected a commutation error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A0	62112

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->Commutation methods-->Commutation error"F2A0" and AX5000_IDN-Description: "P-0-0057"; "P-0-0150"

4.385 F2A1, Over-current error motor, measuring limit reached (X13 / X23).

The drive software detected an over-current on the motor phases. The limit of the current measuring range was reached.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A1	62113

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error depends on the total system configured:	The solution depends on the total system configured:
Asynchronous motor without feedback.	Check the load conditions and if necessary activate the acceleration controller (IDNs P-0-0112, P-0-0113, P-0-0114 and P-0-0451) and/or the breakdown protection controller (IDNs P-0-0115, P-0-0116, P-0-0117 and P-0-0451).
Synchronous motor, current-controlled with incremental feedback.	Check the following IDNs: P-0-0165; S-0-0106; S-0-0107; S-0-0119; S-0-0120.
Asynchronous motor with feedback.	Check the parametrization of the current controller and the IDNs P-0-0107 and S-0-0106.
Synchronous motor, current-controlled with absolute position information per pole pair.	Check the parametrization of the current controller.
Synchronous motor, current-controlled without feedback	Check the parametrization of the current controller.

Further Information
AX5000_IDN-Description: "S-0-0106; S-0-0107; S-0-0119; S-0-0120; P-0-0112; P-0-0113; P-0-0114; P-0-0115; P-0-0116; P-0-0117; P-0-0165; P-0-0451"

4.386 F2A2, Processing unit periphery: Initialization failed

Processing unit periphery: Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A2	62114

Class	Type
Error	Software exception

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.387 F2A3, Current controller: Internal use failed

The current calibration failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A3	62115

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The current controller is in use and can't be used twice.	Disable the axis and start the command again.

4.388 F2A4, Internal error

The current calibration failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A4	62116

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.389 F2A5, Internal error

ADC not ready.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A5	62117

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.390 F2A7, Torque off triggered from "shorted coils brake" or "DC brake"

Torque off triggered from "shorted coils brake" or "DC brake"

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A7	62119

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.391 F2A8, Commutation error (sensorless control)

The drive detected a commutation error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A8	62120

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.392 F2A9, Timeout error (sensorless control)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A9	62121

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.393 F2AA, Only rotatory SM sensorless (FOC) supported

Only rotatory SM sensorless (FOC) supported (see P-0-0464 and P-x-0451).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2AA	62122

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.394 F2AB, Collision detected.

By the torque deviation monitoring has been a collision detected (see P-0-0359).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2AB	62123

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.395 F2E1, Velocity Control: Control deviation monitoring failed

The velocity deviation exceeded the limit value (see P-x-0518).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2E1	62177

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The control deviation has exceeded the value of IDN P-x-0518.	Analyze your application and increase the value in the IDN P-x-0518, if appropriate.
The set value dynamic characteristics are set too "hard".	Analyze your application and check whether it is theoretically possible to achieve the specified dynamics.
An error has occurred in the set value generation.	Analyze the cause (NC, internal set value generation, etc.). If no solution can be found, contact support.
The control parameter are unfavorable.	Optimize the control parameter.
The mechanical system is too sluggish.	Analyze your application and try make the mechanical system smoother.
Problems with actual value monitoring.	Analyze the position.
The current limit has been reached.	Analyze the motor parametrization or your calculation and check whether the motor can theoretically follow the set values.

Further Information
AX5000_IDN-Description: ""P-x-0518"

4.396 F320, Overtravel limit exceeded.

Overtravel limit exceeded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F320	62240

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.397 F321, Excessive position deviation

The servo drive has detected a following error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F321	62241

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The following error has exceeded the maximum value of IDN S-0-0159.	Analyze your application and increase the maximum value in the IDN S-0-0159, if appropriate.
The set value dynamic characteristics are set too "hard".	Analyze your application and check whether it is theoretically possible to achieve the specified dynamics.
An error has occurred in the set value generation.	Analyze the cause (NC, internal set value generation, etc.). If no solution can be found, contact support.
The current limit has been reached. For more informations look at the parameter S-0-0136, S-0-0137, S-0-0109, S-0-0111 and the motor characteristic.	Analyze the motor parametrization or your calculation and check whether the motor can theoretically follow the set values.
The mechanical system is too sluggish.	Analyze your application and try make the mechanical system smoother.
The speed limit has been reached. For more informations look at the parameter S-0-0091, S-0-0113 and the motor characteristics.	Analyze the motor parametrization or your calculation and check the maximum motor speed value used in the calculation.

Further Information
AX5000_IDN-Description: "S-0-0091", "S-0-0109", "S-0-0111", "S-0-0113", "S-0-0136", "S-0-0137" and "S-0-0159".

4.398 F323, Parameter error

The cycle times have invalid values.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F323	62243

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have entered invalid cycle times in the IDNs S-0-0001 and/or S-0-0002.	Enter permissible cycle times and try again.

Further Information
AX5000_IDN-Description: "S-0-0001" and "S-0-0002"

4.399 F324, Excessive position command value deviation.

Excessive position command value deviation.

If a position jump occurs within two NC cycles that results in a reference speed > S-0-0091 x P-0-0555

Config: P-0-0555<> 0 (Default = 200 %)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F324	62244

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.400 F325, Following distance calculation limit exceeded.

Following distance calculation limit exceeded.

Prevents the sign of the resulting speed reference from changing.

Config: S-0-0159 = S-0-0104<>0

S-0-0189 > 0x3FFF (1/4 of the position range 2^{32})

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F325	62245

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.401 F326, Additional position deviation monitoring

The position deviation is outside the range of stable operation.

Can be switched off in P-0-0551.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F326	62246

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.402 F330, Position control - Interpolator error

The initialization of the position interpolator failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F330	62256

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An firmware error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff support who is responsible for you.

Please consider this note!

The drive sends in case of this error an emergency which results in an event log entry. Please contact the support team with this entry.

4.403 F331, Position control - Interpolator error

An exception occurred in the position calculation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F331	62257

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An firmware error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff support who is responsible for you.

4.404 F332, Position control - Interpolator error

The calculation of the velocity feedforward value failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F332	62258

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An firmware error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff support who is responsible for you.

4.405 F333, Position control - Interpolator error

The calculation of the acceleration feedforward value failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F333	62259

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An firmware error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff support who is responsible for you.

4.406 F340, Position offset invalid

Position offset invalid: The Feedback-System has been exchanged.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F340	62272

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The saved position offset is invalid because the serial number of the encoder has changed. E.g. a different motor has been connect.	Calibrate the axis and save the new position offset.

4.407 F341, Position offset: No position offset existing

Position offset: No position offset existing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F341	62273

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A position offset should used in the position control loop, but no position offset has been saved.	Calibrate the axis and save the new position offset.

4.408 F342, Position offset: Offset can't be activated. Modulo calculation is active.

Position offset: Offset can't be activated. Modulo calculation is active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F342	62274

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The position offset can't be activated because the modulo calculation is enabled.	Activate the position offset before enabling the modulo calculation.
The position offset can't be activated because the modulo calculation is enabled.	Update the AX5000 firmware to a version 2.06 or higher.

4.409 F343, Position offset: No position offset existing

Position offset: No position offset existing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F343	62275

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A position offset should used in the position control loop, but no valid position offset has been found.	Calibrate the axis and save the new position offset.

4.410 F344, Position offset: The position offset change is greater than the modulo value.

Position offset: The position offset change is greater than the modulo value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F344	62276

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The position offset can't be activated because the modulo calculation is enabled and the modulo value is less than the position offset change.	Use only position offset changes less than the modulo value.

4.411 F348, Drive memory commutation offset: The feedback don't match.

Drive memory commutation offset: The feedback don't match.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F348	62280

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.412 F349, Drive memory commutation offset: No saved offset existing.

Drive memory commutation offset: No saved offset existing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F349	62281

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.413 F34A, Drive memory commutation offset: No valid saved offset existing

Drive memory commutation offset: No valid saved offset existing

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F34A	62282

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.414 F350, Modulo Calculation: No saved data could be loaded.

Modulo Calculation: No saved data could be loaded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F350	62288

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An error occurred while the stored modulo values should be loaded.	Disable and re-enable the modulo calculation.

4.415 F351, Modulo Calculation: Initialization data invalid.

Modulo Calculation: Initialization data invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F351	62289

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An error occurred while the stored modulo values should be loaded. The loaded data values are invalid. E.g. the encoder has changed.	Disable and re-enable the modulo calculation.

4.416 F352, Modulo Calculation: No saved data available.

Modulo Calculation: No saved data available.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F352	62290

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An error occurred while the stored modulo values should be loaded. No data found.	Disable and re-enable the modulo calculation.

4.417 F353, Modulo Calculation: Saving of the initialization data failed.

Modulo Calculation: Saving of the initialization data failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F353	62291

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An error occurred while the modulo values should be stored.	Disable and re-enable the modulo calculation.
An error occurred while the modulo values should be stored.	Contact support.

4.418 F354, Modulo Calculation: Saving of the modulo data failed.

Modulo Calculation: Saving of the modulo data failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F354	62292

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An error occurred while the modulo values should be stored.	Disable and re-enable the modulo calculation.
An error occurred while the modulo values should be stored.	Contact support.

4.419 F355, Modulo Calculation: The absolute range of encoder 1 is too small.

Modulo Calculation: The absolute range of encoder 1 is too small.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F355	62293

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The modulo calculation with data storage can only be used if a multi-turn feedback is connected.	Connect and use a multi-turn feedback as feedback 1.

4.420 F356, Modulo Calculation: The absolute range of encoder 2 is too small.

Modulo Calculation: The absolute range of encoder 2 is too small.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F356	62294

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The modulo calculation with data storage can only be used if a multi-turn feedback is connected.	Connect and use a multi-turn feedback as feedback 2.

4.421 F357, Modulo Calculation: Initialization failed because the feedback position is invalid.

Modulo Calculation: Initialization failed because the feedback position is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F357	62295

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The initialization of the modulo calculation failed because the feedback position isn't valid.	Check if feedback errors are present.

4.422 F360, Initialization of the device: failed

The initialization of the AX5000 has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F360	62304

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The digital output was used more than once.	Check the digital output assignment.

4.423 F361, Initialization of the device: failed

The initialization of the AX5000 has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F361	62305

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
Internal error.	Contact support.

4.424 F362, Initialization of the device: Failed - Firmware checksum

The initialization of the AX5000 has failed (Invalid firmware checksum).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F362	62306

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.425 F363, Initialization of the device: Failed - Firmware checksum

The initialization of the AX5000 has failed (Invalid firmware checksum).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F363	62307

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
You have selected a defective firmware file.	Exchange the defective firmware file to a valid one.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.426 F3A0, Device initialization: Invalid state

A non-existing initialization step was called.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A0	62368

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.427 F3A1, Device initialization: Invalid state

A non-existing status was addressed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A1	62369

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.428 F3A3, Front card state machine: Feedback DSP failed

The feedback processor at the front card cannot be addressed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A3	62371

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an internal hardware error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.429 F3A4, Device initialization: Option card - Feedback DSP failed

The feedback processor at the AX570x option card cannot be addressed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A4	62372

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.430 F3A5, Device initialization: Option card - FPGA test failed

The FPGA at the AX570x option card cannot be addressed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A5	62373

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.431 F3A6, Device initialization: Serial flash, firmware info not readable

The "Device state machine" is unable to read the firmware info from the serial flash.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A6	62374

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.432 F3A7, Device initialization: Serial flash, boot loader info not readable

The "Device state machine" is unable to read the boot loader info from the serial flash.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A7	62375

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.433 F3A8, Device initialization: Serial flash, directory not readable

The "Device state machine" is unable to read the serial flash directory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A8	62376

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.434 F3A9, The initialization of the HpfDSL-Fpga failed.

The initialization of the HpfDSL-Fpga failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A9	62377

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.435 F3AA, Explicit Device Identification: Write of the data failed.

Explicit Device Identification: Write of the data failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3AA	62378

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.436 F3AB, Explicit Device Identification: Write of the data failed.

Explicit Device Identification: Write of the data failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3AB	62379

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.437 F3C0, Error management: Invalid value in P-0-0350

The firmware does not support the value entered in the IDN "P-0-0350".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C0	62400

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The IDN "P-0-0350" has been incorrectly parametrized.	Check the IDN "P-0-0350".

Further Information
AX5000_IDN-Description: "P-0-0350

4.438 F3C1, Error management: Internal error

The fault management has failed due to an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C1	62401

Class	Type
Error	Software exception

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.439 F3C2, Error management: Command error

A error occurred in the started command.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C2	62402

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This command may only be issued by Beckhoff Service personnel and requires a master password.	Ask our support.

Please consider this note!

The entered command deletes the complete error history.

4.440 F3C3, Error management: Command error

A time out occurred in the started command.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C3	62403

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This command may only be issued by Beckhoff Service personnel and requires a master password.	Ask our support.

Please consider this note!

The entered command deletes the complete error history.

4.441 F3C4, Error management: Initialization failed

Error management: Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C4	62404

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.442 F3C5, Error management: Got no timer

Error management: Got no timer

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C5	62405

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.443 F3D0, Propagated error received, react with "Torque off".

Propagated error received, react with "Torque off".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3D0	62416

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.444 F3D1, Propagated error received, react with "Shorted coils brake".

Propagated error received, react with "Shorted coils brake".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3D1	62417

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

4.445 F3D2, Propagated error received, react with "Open loop ramp".

Propagated error received, react with "Open loop ramp".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3D2	62418

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.446 F3D3, Propagated error received, react with "Closed loop ramp".

Propagated error received, react with "Closed loop ramp".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3D3	62419

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.447 F3D4, Propagated error received, react with "Gantry brake".

Propagated error received, react with "Gantry brake".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3D4	62420

Class	Type
Error	Runtime error

Standard Reaction	Reset
Gantry brake	Execute Reset-Command (S-0-0099).

4.448 F401, EtherCAT slave controller: Internal test failed

A fault in the EtherCAT communication occurred due to a failed internal test.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F401	62465

Class	Type
Error	Hardware error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.449 F402, EtherCAT slave controller: Invalid syncmanager start address

The EtherCAT communication cannot be started due to an invalid, odd start address of the sync manager.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F402	62466

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.450 F403, EtherCAT slave controller: Syncmanager address range

The EtherCAT communication cannot be started due to an invalid address range of the sync manager.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F403	62467

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.451 F404, EtherCAT slave controller: Syncmanager size

The EtherCAT communication cannot be started due to an invalid sync manager parameter.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F404	62468

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.452 F405, EtherCAT slave controller: Syncmanager parameter

The EtherCAT communication cannot be started due to invalid sync manager parameterization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F405	62469

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.453 F406, EtherCAT slave controller: Syncmanager internal error

The EtherCAT communication cannot be started due to an internal sync manager error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F406	62470

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.454 F407, EtherCAT slave controller (MDT): Syncmanager parameter

The EtherCAT process data communication cannot be started due to invalid sync manager parameterization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F407	62471

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A data type in the process image was changed.	Check the data types in the process image.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.455 F408, EtherCAT slave controller (AT): Syncmanager parameter

The EtherCAT process data communication cannot be started due to invalid sync manager parameterization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F408	62472

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A data type in the process image was changed.	Check the data types in the process image.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.456 F409, Distributed clocks: Sync0 - Cycle time

The cycle time of Sync0 is parametrized to an invalid value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F409	62473

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The cycle time of Sync0 may only be configured at 62.5 µs, 125 µs or 250 µs.	Check the cycle time of Sync0.

Please consider this note!

The configuration of the "distributed clocks" is optimally set as standard by the TwinCAT system and should be ready to run without any problems. Any changes that may be required should only be carried out by well-trained specialists.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronization"

4.457 F410, Distributed clocks: Sync0 - Not enabled

Sync0 is not activated

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F410	62480

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Sync0 is not activated	Activate Sync0.

Please consider this note!

The configuration of the "distributed clocks" is optimally set as standard by the TwinCAT system and should be ready to run without any problems. Any changes that may be required should only be carried out by well-trained specialists.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronization"

4.458 F411, Distributed clocks: Sync0 - Impulse length

The pulse length of Sync0 is not valid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F411	62481

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The parametrization of the Sync0 pulse length is invalid.	Please check the parametrization of the Sync0 pulse length.

Please consider this note!

The configuration of the "distributed clocks" is optimally set as standard by the TwinCAT system and should be ready to run without any problems. Any changes that may be required should only be carried out by well-trained specialists.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronization"

4.459 F412, Distributed clocks: Sync1 - Cycle time

The cycle time of Sync1 is parametrized to an invalid value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F412	62482

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The cycle time of Sync1 must be a multiple of the Sync0 cycle time.	Check the cycle time of Sync1.

Please consider this note!

The configuration of the "distributed clocks" is optimally set as standard by the TwinCAT system and should be ready to run without any problems. Any changes that may be required should only be carried out by well-trained specialists.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronization"

4.460 F413, Distributed clocks: Sync1 - Not enabled

Sync1 is not activated

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F413	62483

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Sync1 is not activated	Activate Sync1.

Please consider this note!

The configuration of the "distributed clocks" is optimally set as standard by the TwinCAT system and should be ready to run without any problems. Any changes that may be required should only be carried out by well-trained specialists.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronization"

4.461 F414, Distributed clocks: hardware sync

The hardware synchronization is not available any more.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F414	62484

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.462 F415, Distributed clocks: Process data synchronization lost

The process data synchronization is not available any more.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F415	62485

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The PC is sending invalid signals (jitter). Numerous causes are hardware problems and device drivers which mask the interrupts.	Check the PC.
The prioritization of the individual tasks is unfavorable.	Please check the task prioritization.
CRC-Error on the EtherCAT bus	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
I/O update takes place at the end of the task.	In the System Manager parameterize the I/O update at the start of the task.
Synchronization of the distributed clocks failed	Restart the EtherCAT-Master.
Several EtherCAT telegrams have been lost.	Start an "Emergency scan" in the "System Manager"

Please consider this note!

Further information can be found in the "Beckhoff Information System" on the homepage of www.Beckhoff.de.

Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronization"

4.463 F416, Distributed clocks: Local DC-time calculation failed

The local calculated DC-time differs too much from the ESC DC-time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F416	62486

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.464 F417, Distributed clocks: PLL sync lost

The synchronization to the distributed clock has been lost.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F417	62487

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.465 F420, EtherCAT slave controller: Invalid port configuration

EtherCAT slave controller: Invalid port configuration

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F420	62496

Class	Type
Error	Hardware error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The check of the EtherCAT port configuration failed.	Contact support.

4.466 F440, Dynamic SyncManager: IO-Cycle counter error

Dynamic SyncManager: IO-Cycle counter error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F440	62528

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The monitoring of the cycle counter in the dynamic sync manager process data failed.	Check if your application provides a valid cycle counter.

4.467 F441, Dynamic SyncManager: Required SyncManager not enabled.

Dynamic SyncManager: Required SyncManager not enabled.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F441	62529

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The drive operation mode has changed to a mode which uses the dynamic sync manager while the dynamic sync manager are not enabled.	Check if your application activates the dynamic sync manager.

4.468 F4A0, SoE Communication: Reset command failed

An error has occurred in SoE communication while performing a reset command.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A0	62624

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.469 F4A1, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A1	62625

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.470 F4A2, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A2	62626

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.471 F4A3, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A3	62627

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.472 F4A4, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A4	62628

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.473 F4A5, SoE Communication: Parameter error

A parameter error has been detected in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A5	62629

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A parameter error has been detected.	Further information can be found in the IDN S-0-0021.

Further Information
AX5000_IDN-Description: "S-0-0021"

4.474 F4A6, SoE Communication: Drive notification failed

Sending of device notification has failed in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A6	62630

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.475 F4A7, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A7	62631

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.476 F4A8, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A8	62632

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.477 F4A9, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4A9	62633

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.478 F4AA, SoE Communication: Internal error

An internal error has occurred in the SoE communication layer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4AA	62634

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.479 F4AB, Invalid rated current

The rated current coded in the identity object isn't supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4AB	62635

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
There is an fatal internal parameter error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.480 F500, Internal error.

Internal error: Initialization of the ext. ADC failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F500	62720

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.481 F503, Internal communication error

Communication problems between control card and driver card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F503	62723

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The motor plugs (X13 or X23) are not firmly screwed onto the AX5000. Possible leakage currents do not flow via the housing to the rear panel, but through the AX5000 and cause malfunctions there.	Screw the motor plug(s) firmly to the AX5000.
The AX5000 is not screwed firmly enough to the rear panel. Possible leakage currents do not flow via the housing to the rear panel, but through the AX5000 and cause malfunctions there.	Screw the AX5000 firmly to the metallic rear panel.

4.482 F504, A/D converter: Reference voltage invalid

The reference voltage in the analog / digital converter is outside the valid range.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F504	62724

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.483 F505, Firmware: Analysis of the A/D-Converter defective

Code error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F505	62725

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A internal fatal firmware error occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.484 F506, Internal communication error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F506	62726

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The motor plugs (X13 or X23) are not firmly screwed onto the AX5000. Possible leakage currents do not flow via the housing to the rear panel, but through the AX5000 and cause malfunctions there.	Screw the motor plug(s) firmly to the AX5000.
ADC filter not parameterized.	Activate the ADC filter (P-0-0204).
The AX5000 is not screwed firmly enough to the rear panel. Possible leakage currents do not flow via the housing to the rear panel, but through the AX5000 and cause malfunctions there.	Screw the AX5000 firmly to the metallic rear panel.

Further Information
AX5000_IDN-Description: "P-0-0204"

4.485 F508, Firmware: Unknown nominal current.

The read nominal current value is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F508	62728

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a wrong firmware file.	Use a valid firmware file.

4.486 F50A, A/D-Converter: DC-Link - measuring error

The analog/digital converter has picked up an invalid signal during measurement of the DC link voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F50A	62730

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.487 F50B, A/D-Converter: DC-Link - measuring error

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Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F50B	62731

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.488 F50C, A/D-Converter: DC-Link - Measuring error

The analog/digital converter has picked up an invalid signal during measurement of the DC link current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F50C	62732

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.489 F50D, A/D-Converter: DC-Link - Measuring error

The analog/digital converter has picked up an invalid signal during measurement of the external reference current for the DC link.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F50D	62733

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.490 F50E, A/D-Converter: Measuring error - U_mains

The analog/digital converter has picked up an invalid signal during measurement of the mains voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F50E	62734

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.491 F50F, A/D-Converter: Measuring error - Module temperature

The analog/digital converter has picked up an invalid signal during measurement of the module temperature.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F50F	62735

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
?	?

4.492 F510, A/D-Converter: Not ready to enable

A/D-Converter: Not ready to enable

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F510	62736

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.493 F511, Voltage calibration failed

The voltage calibration failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F511	62737

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.494 F580, External Periphery - Control card: Internal error

Internal software error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F580	62848

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.495 F581, External Periphery - Control card: Reading the ESC-eeprom failed

The PDI has no access rights to the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F581	62849

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The EtherCAT master has not enabled the access.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.496 F582, External Periphery - Control card: Writing the ESC-eeprom failed

The PDI has no write rights to the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F582	62850

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The EtherCAT master has not enabled the access.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.497 F583, External Periphery - Control card: Reading the ESC-eeprom failed

An invalid device ID is stored in the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F583	62851

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The ESC eeprom was written incorrectly, or it is faulty.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.498 F584, External Periphery - Control card: Reading the ESC-eeprom failed

An invalid device ID is stored in the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F584	62852

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The ESC eeprom was written incorrectly, or it is faulty.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.499 F585, External Periphery - Control card: Reading the ESC-eeprom failed

An invalid product ID is stored in the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F585	62853

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The ESC eeprom was written incorrectly, or it is faulty.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.500 F586, External Periphery - Control card: Reading the ESC-eeprom failed

An invalid revision is stored in the ESC eeprom.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F586	62854

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The ESC eeprom was written incorrectly, or it is faulty.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.501 F587, External Periphery - Control card: Checking the ESC-eeprom failed

The ESC eeprom data are faulty.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F587	62855

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The ESC eeprom was written incorrectly, or it is faulty.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.502 F588, External Periphery: SPI - Timeout

External Periphery: SPI - Timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F588	62856

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.503 F589, External Periphery - Control card: Reading the ESC-eeprom failed

Reading of the ESC eeprom data has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F589	62857

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.504 F58A, External Periphery - Control card: Writing the ESC-eeprom failed

Writing of the ESC eeprom data has failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F58A	62858

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.505 F58B, External Periphery - Control card: Writing the ESC-eeprom failed

Writing of the ESC eeprom data has failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F58B	62859

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.506 F58C, External Periphery - Control card: Writing the ESC-eeprom failed

Writing of the ESC eeprom data has failed due to write protection.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F58C	62860

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.507 F58D, External Periphery - Control card: Writing the ESC-eeprom failed

Checking of the data written to the ESC eeprom has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F58D	62861

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.508 F590, External Periphery - Control card: ADC - Initialization failed

Initialization of the ADCs was unsuccessful.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F590	62864

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.509 F591, External Periphery - Initialization failed

External Periphery - Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F591	62865

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.510 F600, Calibrate commutation offset error.

Calibrate commutation offset error. Internal error - Timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F600	62976

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.511 F601, Calibrate commutation offset error.

Calibrate commutation offset error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F601	62977

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.512 F602, Calibrate commutation offset error.

Calibrate commutation offset error: Not ready to enable.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F602	62978

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.513 F603, Calibrate commutation offset error.

Calibrate commutation offset error: No hardware enable.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F603	62979

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.514 F604, Current calibration error.

Current calibration error: ADC timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F604	62980

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.515 F605, Current calibration error.

Current calibration error: Command timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F605	62981

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.516 F606, Current calibration error.

Current calibration error: Parameter not cleared.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F606	62982

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.517 F607, Current calibration error.

Current calibration error: Tolerance too low.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F607	62983

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.518 F608, Current calibration error.

Current calibration error: Wrong phase.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F608	62984

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.519 F609, Current calibration error.

Current calibration error: Wrong calibration point.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F609	62985

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.520 F60A, Current calibration error.

Current calibration error: Current v scale.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F60A	62986

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.521 F60B, Current calibration error.

Current calibration error: Current w scale.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F60B	62987

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.522 F60C, Current calibration error.

Current calibration error: Open interface.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F60C	62988

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.523 F60D, Calibrate commutation offset error.

Calibrate commutation offset error: Safety switch off active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F60D	62989

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.524 F60E, Calibrate commutation offset error.

Calibrate commutation offset: Mode not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F60E	62990

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.525 F610, Current calibration error.

Current calibration: Upper resistor limit reached.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F610	62992

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.526 F611, Current calibration error.

Current calibration: Lower resistor limit reached.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F611	62993

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.527 F612, Current calibration error.

Current calibration error: Current u scale.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F612	62994

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.528 F613, Pos. or neg. direction was disabled during command function P-0-0160

Pos. or neg. direction was disabled during command function P-0-0160.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F613	62995

Class	Type
Error	Command error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Positive or nagative limit switch is active	Increase the distance between axis and hardware limit switch

4.529 F614, Torque, force or current limitation during command function P-0-0160

Torque, force or current limitation during command function P-0-0160.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F614	62996

Class	Type
Error	Command error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.530 F615, Inadmissible current deviation during command function P-0-0160

Inadmissible current deviation during command function P-0-0160.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F615	62997

Class	Type
Error	Command error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.531 F616, Limited range of motion during command function P-0-0160

Limited range of motion during command function P-0-0160.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F616	62998

Class	Type
Error	Command error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.532 F700, Feedback "general": Initialization

The initialization of the feedback has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F700	63232

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.533 F701, Feedback "general": Initialization - parameter channel

The initialization of the parameter channel between the control unit and the front unit failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F701	63233

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem

4.534 F702, Feedback "1": Position invalid.

The position of Feedback "1" is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F702	63234

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem

4.535 F703, Feedback "general": Feedback error

Feedback C1D error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F703	63235

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem

4.536 F704, Feedback "general": Overvoltage - supply voltage

The regulated voltage of the sense line is too high and cannot be reduced to 5.0 V.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F704	63236

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an "external voltage" on the sense line of the feedback system "1".	Locate this external voltage and suppress it.
The voltage regulation or the voltage measurement in the AX5000 is defective.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.537 F705, Feedback "general": Undervoltage - Supply voltage

The regulated voltage of the sense line is too low and cannot be increased to 5.0 V.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F705	63237

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is too long.	Please shorten the feedback line.
The voltage regulation or the voltage measurement in the AX5000 is defective.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
Current consumption of the feedback system is too high.	Please check the feedback system and replace if necessary.

Further Information
AX5000_Operating-Instructions - Chapter "Installation-->Electrical installation-->Feedback"

4.538 F706, Feedback "general": Internal error.

The ADC conversion has failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F706	63238

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.539 F707, Feedback "general": Lost feedback

The AX5000 did not measure any feedback voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F707	63239

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback connector is not correctly attached.	Please fasten the feedback connector securely to the AX5000.
The sense signal parameters are invalid.	Please check the parameters.
Either the feedback or the sense line is faulty.	Please check the line.

Please consider this note!

After this fault the feedback system voltage will be switched off. Please use an Ohm meter to check the lines.

4.540 F708, Feedback "general": Found different feedback in the digital name plate.

The parametrized feedback does not correspond to the feedback details entered in the digital type label.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F708	63240

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
During the motor replacement a motor with different feedback was connected.	Please correct the feedback-parameterization.
You have chosen a motor, whose feedback does not correspond to the parametrized feedback.	Please select a motor accordingly.

4.541 F709, Feedback "2": Position invalid.

The position of feedback "2" is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F709	63241

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.542 F70A, Feedback "1": Error.

An error has occurred on Feedback "1".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F70A	63242

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.543 F70B, Feedback "2": error.

An error has occurred on Feedback "2".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F70B	63243

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.544 F70E, Feedback "1": error.

An error has occurred on Feedback 1 (Feedback board).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F70E	63246

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.545 F70F, Feedback "2": error

An error has occurred on Feedback 2 (Feedback board).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F70F	63247

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.546 F712, Feedback "general": Power settings

A double signal (voltage) was applied to the feedback connection.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F712	63250

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system has been incorrectly parametrized.	Check the parametrization of the feedback system (P-0-0150 or P-0-0180).

Further Information
AX5000_IDN-Description: "P-0-0150-->Power settings-->Connector" or "P-0-0180-->Power settings-->Connector"

4.547 F713, Feedback "general": process data channel settings

A double signal (process data channel) was applied to the feedback connection.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F713	63251

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system has been incorrectly parametrized.	Check the parametrization of the feedback system (P-0-0150 or P-0-0180).

Further Information
AX5000_IDN-Description: "P-0-0150-->Process channel-->Connector" or "P-0-0180-->Process channel-->Connector"

4.548 F714, Feedback "general": parameter channel settings

A double signal (parameter channel) was applied to the feedback connection.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F714	63252

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system has been incorrectly parametrized.	Check the parametrization of the feedback system (P-0-0150 or P-0-0180).

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Connector" or "P-0-0180-->Parameter channel-->Connector"

4.549 F715, Internal communication: SPI - Front card to Option card

The general communication of the interface between the front card and the option card has failed due to an internal data fault.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F715	63253

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware or software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.550 F716, Internal communication: SPI - Front card to Option card

The general communication of the interface between the front card and the option card has failed due to an internal data fault (Got no timer).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F716	63254

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.551 F717, Feedback "general": Initialization failed

The initialization command could not be executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F717	63255

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.552 F718, Feedback "1": Data invalid (SPI error).

The data of feedback 1 are invalid due to an SPI error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F718	63256

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.553 F719, Option card, Feedback "1": error

An error has occurred on Feedback 1 (Feedback board).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F719	63257

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.554 F71A, Option card, Feedback "2": error

An error has occurred on Feedback 2 (Feedback board).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F71A	63258

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.555 F720, Feedback "general": Initialization failed

The command for the initialization of the feedback parameter channel failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F720	63264

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.556 F721, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (Time out).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F721	63265

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.557 F722, Feedback "general": Initialization failed

The command for the initialization of the feedback parameter channel failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F722	63266

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.558 F723, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (Commutation offset).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F723	63267

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

Further Information
AX5000_IDN-Description: "

4.559 F724, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (Position offset).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F724	63268

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.560 F725, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (Time out).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F725	63269

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.561 F726, Feedback "general": Save digital name plate failed.

The command to save the digital nameplate failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F726	63270

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.562 F727, Feedback "general" Save position offset failed.

The command to save the position offset failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F727	63271

Class	Type
Error	Command error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.563 F728, Feedback "general": Position initialization failed.

The "position initialization" command failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F728	63272

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.564 F729, Feedback "general": Scan feedback failed.

The "scan feedback" command failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F729	63273

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.565 F72A, Feedback "general": Internal error

An internal error occurred while processing the feedback parameter data (open interface)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F72A	63274

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.566 F72B, Feedback "general": Internal error

An internal error occurred while processing the feedback parameter data (unknown state).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F72B	63275

Class	Type
Error	Software exception

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.567 F72C, Feedback "general": Internal error

An internal error occurred while processing the feedback parameter data (command is not supported)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F72C	63276

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
No feedback system has been parametrized.	Parameterize a feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.568 F72E, Feedback "general": Internal error

An internal error occurred while processing the feedback parameter data (open interface)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F72E	63278

Class	Type
Error	Software exception

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.569 F72F, Feedback "general": Internal error

An internal error occurred while processing the feedback parameter data (open interface)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F72F	63279

Class	Type
Error	Software exception

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.570 F730, Feedback "general": Internal error

An internal error occurred while processing the feedback parameter data (command is not supported)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F730	63280

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.571 F731, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (Time out).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F731	63281

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.572 F732, Feedback "general": Save digital name plate failed.

The command to save the digital nameplate failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F732	63282

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.573 F733, Feedback "general" Save position offset failed.

The command to save the position offset failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F733	63283

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.574 F734, Feedback "general": Position initialization failed.

The command "position initialization" offset failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F734	63284

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.575 F735, Feedback "general": Position initialization failed.

The command "position initialization" offset failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F735	63285

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.576 F736, Feedback "general": Data transfer failed.

The data transmission on the feedback parameter channel failed due to a timeout (data receipt).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F736	63286

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.577 F737, Feedback "general": Data transfer failed.

The data transmission on the feedback parameter channel failed due to a timeout (data send).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F737	63287

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.578 F738, Feedback "general": Data transfer failed.

The data transmission on the feedback parameter channel failed due to a timeout (commutation offset).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F738	63288

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.579 F739, Feedback "general": Wrong feedback

The expected feedback system could not be confirmed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F739	63289

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Linear motor You have entered a feedback system in the IDN P-0-0150 that cannot be confirmed.	Determine the correct feedback system and enter it in the IDN P-0-0150
Rotary motor: You have selected the wrong motor and thus possibly also the wrong feedback system.	Select the correct motor.

Please consider this note!

If the manufacturer entered in the IDN P-0-0150 correlates to the actual manufacturer, please check the exact model designation.

Further Information
AX5000_IDN-Description: "P-0-0150"

4.580 F73A, Feedback "general": Resolution has been incorrectly parametrized

The resolution parametrized in the feedback system does not correspond to the resolution entered in the IDN "P-0-0150" or "P-0-0180" (multi-turn).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F73A	63290

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected an incorrect feedback system.	Compare the selected feedback system with the actually existing one.
The feedback database was incorrectly parametrized.	Call our support dept. and replace the feedback database.
During the motor replacement a motor with different feedback was connected.	Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Bit resolution multi-turn position" or "P-0-0180-->Parameter channel-->Bit resolution multi-turn position"

4.581 F73B, Feedback "general": Resolution has been incorrectly parametrized

The resolution parametrized in the feedback system does not correspond to the resolution entered in the IDN "P-0-0150" or "P-0-0180" (single-turn).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F73B	63291

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected an incorrect feedback system.	Compare the selected feedback system with the actually existing one.
The feedback database was incorrectly parametrized.	Call our support dept. and replace the feedback database.
During the motor replacement a motor with different feedback was connected.	Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Bit resolution single-turn position" or "P-0-0180-->Parameter channel-->Bit resolution single-turn position"

4.582 F73C, Feedback "general": Resolution per rotation has been incorrectly parametrized

The resolution per rotation parametrized in the feedback system does not correspond to the resolution entered in the IDN "P-0-0150" or "P-0-0180" (multi-turn).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F73C	63292

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected an incorrect feedback system.	Compare the selected feedback system with the actually existing one.
The feedback database was incorrectly parametrized.	Call our support dept. and replace the feedback database.
During the motor replacement a motor with different feedback was connected.	Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Process channel-->Data-->Resolution per rotation" or "P-0-0180-->Process channel-->Data-->Resolution per rotation"

4.583 F73D, Feedback "general": Length of the signal period has been incorrectly parametrized

The length of the signal period of the feedback system from a linear motor parametrized in the feedback system does not correspond to the length entered in the IDN "P-0-0150" or "P-0-0180" (multi-turn).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F73D	63293

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected an incorrect feedback system.	Compare the selected feedback system with the actually existing one.
The feedback database was incorrectly parametrized.	Call our support dept. and replace the feedback database.
During the motor replacement a motor with different feedback was connected.	Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Process channel-->Data-->Length per signal period" or "P-0-0180-->Process channel-->Data-->Length per signal period"

4.584 F73E, Feedback "general": Data transfer failed.

Too many errors occurred during the data transmission on the feedback parameter channel.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F73E	63294

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.585 F73F, Feedback "general": Feedback id has been incorrectly parametrized

The internal ID parametrized in the feedback system does not correspond to the ID entered in the IDN "P-0-0150" or "P-0-0180".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F73F	63295

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected an incorrect feedback system.	Compare the selected feedback system with the actually existing one.
The feedback database was incorrectly parametrized.	Call our support dept. and replace the feedback database.
During the motor replacement a motor with different feedback was connected.	Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Identifier" or "P-0-0180-->Parameter channel-->Identifier"

4.586 F740, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (BiSS).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F740	63296

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.587 F741, Feedback "general": Unknown multi-turn position

An unknown multi-turn position was parametrized in the feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F741	63297

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The internal parametrization of the feedback system is incorrect.	Exchange the feedback system.

4.588 F742, Feedback "general": Invalid commutation offset

The commutation offset entered in the digital name plate of the motor is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F742	63298

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The commutation offset has not been entered in the digital name plate or the value is not plausible.	Exchange the motor.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Please consider this note!

It is not sufficient just to exchange the feedback system, because the commutation offset must be determined and entered in the factory.

4.589 F743, Feedback"general": No feedback connector chosen

The scanning of the feedback failed, because no feedback connection has been parametrized.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F743	63299

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
No feedback connection has been parametrized.	Please parameterize a feedback connection.

Further Information
AX5000_IDN-Description: "P-0-0150-->Power settings-->Connector" or "P-0-0180-->Power settings-->Connector"

4.590 F744, Feedback"general": Wrong feedback connector chosen

The scanning of the feedback failed, because no feedback connection has been parametrized.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F744	63300

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
No feedback connection has been parametrized.	Please parameterize a feedback connection.

Further Information
AX5000_IDN-Description: "P-0-0150-->Power settings-->Connector" or "P-0-0180-->Power settings-->Connector"

4.591 F745, Feedback "general": Data transfer failed.

The data transmission on the feedback parameter channel failed due to a timeout (commutation offset).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F745	63301

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.592 F747, Feedback "general": Parameter invalid.

Linear parameter invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F747	63303

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
See IDN P-0-0150 for the primary feedback or P-0-0180 for secondary feedback.	Check the value "Linear resolution about digital interface in nm"

Further Information
AX5000_IDN-Description: "P-0-0150 or P-0-0180"

4.593 F748, Feedback"general": Parameter channel - Position invalid

The position of the feedback system is invalid

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F748	63304

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system is defective.	Check the feedback system.
Linear feedback: the reader head and the measuring tape are maladjusted.	Adjust the reader head to the measuring tape.

4.594 F749, Feedback "general": Parameter invalid.

Invalid feedback parameterization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F749	63305

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system has been incorrectly parametrized.	Check the parametrization of the feedback system (P-0-0150 or P-0-0180).

Further Information
AX5000_IDN-Description: "P-0-0150"

4.595 F74A, Feedback "general": Parameter invalid

A parameter error occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F74A	63306

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
IDN "P-0-0150 Parameter channel-->Number of clock cycles to get single-turn position or absolute position" = 0	Exchange the parameter.
Sum of the Parameter IDN "P-0-0150 Parameter channel-->Number of clock cycles to get single-turn position or absolute position" + IDN "P-0-0150 Parameter channel-->Number of clock cycles to get multi-turn position" is not equal to 25 or 21 or 13	Exchange the parameter.

Further Information
AX5000_IDN-Description: "P-0-0150"

4.596 F74B, Feedback "general": Save data failed

The timeout of the command "Save feedback identification" elapsed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F74B	63307

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0158" oder "P-0-0188"

4.597 F74C, Feedback "general": Save data failed

A memory error occurred while the command "Save feedback identification" was executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F74C	63308

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0162" or "P-0-0192"

4.598 F74D, Feedback "general": Parameter invalid

The connected feedback isn't equal to the parameterized in P-0-0150 / P-0-0180.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F74D	63309

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Further Information
AX5000_IDN-Description: "P-0-0150"

4.599 F74E, Feedback "general": Parameter invalid

The connected feedback has a different linear resolution as parameterized in P-0-0150 / P-0-0180.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F74E	63310

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Further Information
AX5000_IDN-Description: "P-0-0150"

4.600 F74F, Feedback "general": Position initialization failed

The position initialization failed because the axis is in motion and the actual feedback velocity is to high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F74F	63311

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Further Information
AX5000_IDN-Description: "P-0-0150"

4.601 F75F, Feedback "general": Parameter invalid

The parameterized feedback in P-0-0150 / P-0-0180 has a invalid single or multi-turn resolution.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F75F	63327

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Linear: "Bit resolution multi-turn position" over 16 bit or "Number of clock cycles to get multi-turn position" over 0 bit.	Check P-0-0150 / P-0-0180.
Rotatory: "Bit resolution multi-turn position" / "Number of clock cycles to get multi-turn position" over 16 bit.	Check P-0-0150 / P-0-0180.

Further Information
AX5000_IDN-Description: "P-0-0150"

4.602 F760, Feedback"general": Error by cyclic communication over parameter channel

Communication error over para channel to get position and status from feedback.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F760	63328

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system is defective.	Check the feedback system.

4.603 F761, Feedback"general": The drive memory commutation offset couldn't be activated.

Feedback"general": The drive memory commutation offset couldn't be activated.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F761	63329

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.604 F762, Feedback"general": The drive memory commutation offset isn't available for Fb2.

Feedback"general": The drive memory commutation offset isn't available for Fb2.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F762	63330

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.605 F770, Feedback SSI: Invalid parameter.

Feedback SSI: Invalid parameter.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F770	63344

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.606 F771, Feedback SSI: Single-turn resolution to high.

Feedback SSI: Single-turn resolution to high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F771	63345

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.607 F772, Feedback SSI: Multi-turn resolution to high.

Feedback SSI: Multi-turn resolution to high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F772	63346

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.608 F780, Feedback "general": Data transfer failed.

The data transmission on the feedback parameter channel failed due to an internal error (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F780	63360

Class	Type
Error	Software exception

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.609 F781, Feedback "general": Data transfer failed.

The data transmission on the feedback parameter channel failed due to an internal error (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F781	63361

Class	Type
Error	Software exception

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.610 F782, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F782	63362

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.611 F783, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F783	63363

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.612 F784, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F784	63364

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.613 F785, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F785	63365

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.614 F786, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F786	63366

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.615 F787, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F787	63367

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.616 F788, Feedback "general": Encoder error

The encoder has detected an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F788	63368

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An internal encoder error has occurred.	Exchange the feedback system.

4.617 F789, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F789	63369

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.618 F78A, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78A	63370

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.619 F78B, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed. The digital name plate could not be read (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78B	63371

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
On the basis of the parametrization of the IDN P-0-0150 or P-0-0180, check whether you have parametrized the IDN to match the feedback system.	Change the parametrization if necessary.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The feedback system is defective.	Check the feedback system.

Please consider this note!

A digital name plate exists only in Beckhoff motors from the AM3000 series.

Further Information
AX5000_IDN-Description: "P-0-0150" and "P-0-0180"

4.620 F78C, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78C	63372

Class	Type
Error	Runtime error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.621 F78D, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed. The resolution of the position value is >32 bit (EnDat) for "single-turn".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78D	63373

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Check the parametrization of the resolution in the IDN P-0-0150 or P-0-0180.	Change the parametrization if necessary.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
Defective feedback system, parametrized internal resolution is too high.	Exchange the feedback system.

Please consider this note!

The AX5000 supports a max. position value resolution of 32 bits (EnDat) with "single-turn".

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Bit resolution single-turn position" and "P-0-0180-->Parameter channel-->Bit resolution single-turn position"

4.622 F78E, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78E	63374

Class	Type
Error	Software exception

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.623 F78F, Feedback "general": Initialization failed

The initialization of the feedback parameter channel has failed. The resolution of the position value is >12 bit (EnDat) for "multi-turn".

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78F	63375

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Check the parametrization of the resolution in the IDN P-0-0150 or P-0-0180.	Change the parametrization if necessary.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
Defective feedback system, parametrized internal resolution is too high.	Exchange the feedback system.

Please consider this note!

The AX5000 supports a max. position value resolution of 12 bits (EnDat) with "multi-turn".

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Bit resolution multi-turn position" and "P-0-0180-->Parameter channel-->Bit resolution multi-turn position"

4.624 F791, Feedback parameter channel error (EnDat).

Feedback parameter channel error (EnDat): Wrong digital type plate

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F791	63377

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.625 F792, Feedback parameter channel error (EnDat).

Feedback parameter channel error (EnDat): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F792	63378

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.626 F793, Feedback parameter channel error (EnDat).

Feedback parameter channel error (EnDat): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F793	63379

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.627 F794, EnDat: Feedback scan invalid.

EnDat: Feedback scan invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F794	63380

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.628 F795, EnDat: Feedback type with battery operation is not supported.

EnDat: Feedback type with battery operation is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F795	63381

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.629 F7C0, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C0	63424

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.630 F7C1, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): CRC calculation error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C1	63425

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.631 F7C2, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C2	63426

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.632 F7C3, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C3	63427

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.633 F7C4, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): stop bit error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C4	63428

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.634 F7C5, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): multi-turn resolution > 12 bit

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C5	63429

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.635 F7C6, Feedback parameter channel initialization error (BiSS).

The initialization of the feedback parameter channel has failed (BiSS): Parameter error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C6	63430

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
Wrong feedback system.	Enter the correct feedback system.
The feedback system is defective.	Check the feedback system.

Further Information
See also diagnostic message "F739"

4.636 F7C7, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): parameter error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C7	63431

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.637 F7C8, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C8	63432

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.638 F7C9, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7C9	63433

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.639 F7CA, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7CA	63434

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.640 F7CB, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7CB	63435

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.641 F7CC, Feedback parameter channel initialization error (BiSS).

Feedback parameter channel initialization error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7CC	63436

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.642 F7CD, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): bit stream error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7CD	63437

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.643 F7CE, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): bit stream error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7CE	63438

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.644 F7CF, BiSS: Feedback scan invalid.

BiSS: Feedback scan invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7CF	63439

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.645 F7D0, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D0	63440

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.646 F7D1, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): single-turn resolution > 32 bit

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D1	63441

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.647 F7D2, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D2	63442

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.648 F7D3, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D3	63443

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.649 F7D4, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): CRC error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D4	63444

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.650 F7D5, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): wrong digital type plate

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D5	63445

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.651 F7D6, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D6	63446

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.652 F7D7, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): timeout

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D7	63447

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.653 F7D8, Feedback parameter channel error (BiSS).

Feedback parameter channel error (BiSS): CDS bit error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F7D8	63448

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.654 F800, Feedback parameter channel initialization error (Hiperface): by read manufacturer parameter

Feedback parameter channel initialization error (Hiperface): by read manufacturer parameter

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F800	63488

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.655 F801, Feedback parameter channel initialization error (Hiperface): by read feedback status

Feedback parameter channel initialization error (Hiperface): by read feedback status

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F801	63489

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.656 F802, Feedback parameter channel initialization error (Hiperface): by read feedback position

Feedback parameter channel initialization error (Hiperface): by read feedback position

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F802	63490

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.657 F803, Feedback parameter channel initialization error (Hiperface): unknown name plate

Feedback parameter channel initialization error (Hiperface): unknown name plate

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F803	63491

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.658 F804, Feedback parameter channel initialization error (Hiperface): single-turn resolution over 32bit

Feedback parameter channel initialization error (Hiperface): single-turn resolution over 32bit

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F804	63492

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.659 F805, Feedback parameter channel initialization error (Hiperface): multi-turn resolution over 12 bit

Feedback parameter channel initialization error (Hiperface): multi-turn resolution over 12 bit

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F805	63493

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.660 F806, Feedback parameter channel initialization error (Hiperface): not enough memory

Feedback parameter channel initialization error (Hiperface): not enough memory

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F806	63494

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.661 F807, Feedback parameter channel initialization error (Hiperface): "scan feedback" not valid for this command

Feedback parameter channel initialization error (Hiperface): "scan feedback" not valid for this command

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F807	63495

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.662 F808, Feedback parameter channel initialization error (Hiperface): open internal interface

Feedback parameter channel initialization error (Hiperface): open internal interface

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F808	63496

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.663 F809, Feedback parameter channel initialization error (Hiperface): internal unknown state

Feedback parameter channel initialization error (Hiperface): internal unknown state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F809	63497

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.664 F80A, Feedback parameter channel error (Hiperface): feedback denied command

Feedback parameter channel error (Hiperface): feedback denied command

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F80A	63498

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.665 F80B, Feedback parameter channel initialization error (Hiperface): feedback denied reset command

Feedback parameter channel initialization error (Hiperface): feedback denied reset command

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F80B	63499

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.666 F80C, Feedback parameter channel error (Hiperface): unable to clear data fields

Feedback parameter channel error (Hiperface): unable to clear data fields

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F80C	63500

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.667 F80D, Feedback parameter channel error (Hiperface): sci frame error

Feedback parameter channel error (Hiperface): sci frame error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F80D	63501

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.668 F80E, Feedback parameter channel initialization error (Hiperface): sci parity error

Feedback parameter channel initialization error (Hiperface): sci parity error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F80E	63502

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.669 F80F, Feedback parameter channel initialization error (Hiperface): wrong checksum

Feedback parameter channel initialization error (Hiperface): wrong checksum

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F80F	63503

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.670 F810, Feedback parameter channel initialization error (Hiperface): wrong address

Feedback parameter channel initialization error (Hiperface): wrong address

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F810	63504

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.671 F811, Feedback parameter channel initialization error (Hiperface): number of RX-data to less

Feedback parameter channel initialization error (Hiperface): number of RX-data to less

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F811	63505

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.672 F812, Feedback parameter channel initialization error (Hiperface): wrong response

Feedback parameter channel initialization error (Hiperface): wrong response

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F812	63506

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.673 F813, Feedback parameter channel initialization error (Hiperface): sci error

Feedback parameter channel initialization error (Hiperface): sci error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F813	63507

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.674 F840, Feedback analog commutation channel initialization error.

Feedback analog commutation channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F840	63552

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.675 F841, Feedback analog commutation channel initialization error.

Feedback analog commutation channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F841	63553

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.676 F842, Feedback analog commutation channel initialization error.

Feedback analog commutation channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F842	63554

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.677 F843, Feedback analog commutation channel initialization error.

Feedback analog commutation channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F843	63555

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.678 F844, Error, feedback parameter channel, can't create object.

Error, feedback parameter channel, can't create object.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F844	63556

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.679 F845, Feedback analog initialization error.

Unknown para interface

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F845	63557

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.680 F846, Feedback analog commutation part error.

Feedback analog commutation part error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F846	63558

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.681 F850, One cable feedback: Link missing

The connection between the Feedback-System and the AX5000 is interrupted

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F850	63568

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.682 F851, One cable feedback: Initialization failed

The general initialization of the one cable feedback has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F851	63569

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.683 F852, One cable feedback: Position error limit exceeded

Position error active

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F852	63570

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.684 F853, One cable feedback: Get position - Timeout

The system initialization has failed due to a timeout.]

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F853	63571

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.685 F854, One cable feedback: Out of memory

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F854	63572

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.686 F855, One cable feedback: Parameter error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F855	63573

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.687 F856, One cable feedback: Write configuration failed

During the configuration write sequence an error occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F856	63574

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.688 F857, One cable feedback: Read of the cyclic data failed

Read of the cyclic data failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F857	63575

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.689 F858, One cable feedback: Internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F858	63576

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.690 F859, One cable feedback: Write system control failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F859	63577

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.691 F85A, One cable feedback: Parameter data access error - Timeout

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F85A	63578

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.692 F85B, One cable feedback: Parameter data access error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F85B	63579

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.693 F85C, One cable feedback: Internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F85C	63580

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.694 F85D, One cable feedback: Encoder status signals an error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F85D	63581

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.695 F85E, OCT / HpfDSL: Long message bad answer

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F85E	63582

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.696 F85F, OCT / HpfDSL: Shutdown of the encoder failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F85F	63583

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.697 F860, OCT / HpfDSL: File write failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F860	63584

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.698 F861, OCT / HpfDSL: Invalid serial number.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F861	63585

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.699 F862, OCT / HpfDSL: No access to the motor temperature sensor.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F862	63586

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.700 F863, OCT / HpfDSL: Invalid edge register value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F863	63587

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.701 F864, OCT / HpfDSL: Read cyclic data, Request error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F864	63588

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.702 F865, OCT / HpfDSL: Feedback not found.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F865	63589

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.703 F866, OCT / HpfDSL: No electronic data sheet found.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F866	63590

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.704 F867, OCT / HpfDSL: The electronic data sheet is invalid.

Either no data or a wrong checksum in the encoder memory.

Can only occur at startup. Can not be acknowledged with S-0-0099.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F867	63591

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.705 F868, OCT / HpfDSL: User data file invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F868	63592

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.706 F869, OCT / HpfDSL: Position offset file invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F869	63593

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.707 F86A, OCT / HpfDSL: Commutation offset file invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86A	63594

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.708 F86B, OCT / HpfDSL: Invalid file header.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86B	63595

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.709 F86C, OCT / HpfDSL: Invalid file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86C	63596

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.710 F86D, OCT / HpfDSL: Position deviation monitoring: Value too many cycles not zero.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86D	63597

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.711 F86E, OCT / HpfDSL: Detailed error info

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86E	63598

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.712 F86F, OCT / HpfDSL: Initial encoder status error

After power up of the encoder the encoder status signals relevant error bits.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86F	63599

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.713 F870, Feedback "AX572x": Encoder not ready

Initialization of the feedback system failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F870	63600

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system is defective.	Check the feedback system.
The feedback line is defective.	Check the line.

4.714 F872, Feedback "AX572x": Position is invalid

The AX5000 has detected a position error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F872	63602

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
The feedback system is defective.	Check the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.715 F873, Feedback "AX572x": Position is invalid

The position calculation was not finished in time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F873	63603

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
The feedback system requires too much time for the position calculation.	Check or exchange the feedback system.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.716 F874, Feedback "AX572x": Feedback register invalid

The EnDat 2.2 register is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F874	63604

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system is defective.	Check the feedback system.
Communication problems with the feedback system.	Check the feedback system.

4.717 F875, Feedback "AX572x": Unexpected encoder

No EnDat 2.2 feedback system is installed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F875	63605

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An incorrect feedback system was installed.	Check the feedback system.

4.718 F876, Feedback "EnDat 2.2": UART-error

EnDat 2.2 - UART-error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F876	63606

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback system is defective.	Check the feedback system.
The plug connection of the feedback line is defective.	Check the plug connection.
The feedback line is defective.	Check the feedback line.

4.719 F877, Feedback "AX572x": Out of memory

Out of memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F877	63607

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.720 F879, Feedback "AX572x": Supply voltage

Error in the setting of the controlled supply voltage (Sense)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F879	63609

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Feedback cable is defective.	Check the feedback cable
Plug connection of the feedback cable defective.	Check the plug connection of the feedback cable.
No Sense cores exist.	Check the feedback cable or parameterize the feedback supply voltage to "unregulated" voltage.

Further Information
AX5000_IDN-Description: "P-0-0150"

4.721 F87A, Feedback "AX572x": Power-up of the feedback system failed.

Startup phase of the feedback system could not be successfully completed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F87A	63610

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
No feedback signal from the feedback system.	Check the feedback system.
Feedback cable defective.	Check the feedback cable.
Feedback system defective.	Check the feedback system.
Plug connection of the feedback cable defective.	Check the plug connection of the feedback cable.

4.722 F87C, Feedback "AX572x": Feedback protocol not supported

The AX572x doesn't support the connected feedback-protocol

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F87C	63612

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Unsupported feedback system connected.	Check the feedback system

4.723 F87D, Feedback "AX572x": Parameter error

The parameterizing of the feedback system was faulty.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F87D	63613

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
IDN P-0-0152 or P-0-0182 "gear numerator" and P-0-0153 or P-0-0183 "gear denominator"	This parameter must be greater than 0
IDN P-0-0153 / P-0-0152 or P-0-0183 / P-0-0182	The result of this division must be greater than 1024
IDN P-0-0152 / P-0-0153 or P-0-0182 / P-0-0183	The result of this division must be greater than 1024
IDN P-0-0150 or P-0-0180	Die Parameter "Resolution per rotation; Length pro signal period; Linear resolution" must be greater than 0.

Further Information
AX5000_IDN-Description: "P-0-0150; P-0-0152; P-0-0153; P-0-0180; P-0-0182; P-0-0183"

4.724 F87E, Feedback "AX572x": Feedback battery error

The feedback has an battery error. Position is not valid and must new referenced.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F87E	63614

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Battery voltage to low.	Change battery. Set Flag "Ignor and reset feedback battery error" in P-0357 for one PreOp to SafeOp transition. In Op reference the position and then clear the flag in P-0-0357.
Battery is not connected to feedback power supply.	Connect battery to feedback. Set Flag "Ignor and reset feedback battery error" in P-0357 for one PreOp to Safe=p transition. In Op reference the position and then clear the flag in P-0-0357.

Further Information
AX5000_IDN-Description: P-0-0357: "Ignore and reset feedback battery error"

4.725 F87F, Feedback "AX572x": Parameter error in P-0-0357

In P-0-0357 the parameterizing of the feedback system was faulty.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F87F	63615

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
IDN P-0-0357: Flag "Ignor and reset feedback battery error" is only by battery error allowed.	Clear flag "Ignor and reset for one PreOp->SafeOp transition feedback battery error" in P-0-0357.
IDN P-0-0357: Flag "Reset feedback battery warning" is only by battery warning allowed.	Clear flag "Reset for one PreOp->SafeOp transition feedback battery warning" in P-0-0357.

Further Information
AX5000_IDN-Description: P-0-0357: "Ignore and reset feedback battery error" or "Reset feedback battery warning"

4.726 F880, HTL: Encoder not ready.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F880	63616

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.727 F881, HTL: Error flag active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F881	63617

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.728 F882, HTL: Wrong interface.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F882	63618

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.729 F883, HTL: Timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F883	63619

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

4.730 F8A0, OCT / HpfDSL: Default state entered.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F8A0	63648

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
Internal error.	Contact support.

4.731 F8A1, OCT / HpfDSL: Invalid cogging compensation file.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F8A1	63649

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.732 FA00, Feedback process channel error.

Feedback process channel error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA00	64000

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.733 FA01, Feedback process data channel initialization error

Feedback process data channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA01	64001

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyze the other diagnostic messages to identify the causal problem.

4.734 FA02, Feedback process channel initialization command timeout.

Feedback process channel initialization command timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA02	64002

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.735 FA03, Feedback process channel initialization command not idle.

Feedback process channel initialization command not idle.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA03	64003

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.736 FA04, Feedback process channel initialization error.

Feedback process channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA04	64004

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.737 FA05, Feedback process channel initialization error.

Feedback process channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA05	64005

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.738 FA06, Feedback process channel initialization error.

Feedback process channel initialization error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA06	64006

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.739 FA07, Feedback process channel, unknown feedback type.

Feedback process channel, unknown feedback type.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA07	64007

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.740 FA08, Invalid parameters "P-0-0150 / P-0-0180 -->Process channel-->Data-->Sin / Cos".

Invalid parameters "P-0-0150 / P-0-0180 -->Process channel-->Data-->Sin / Cos":
1. Signal periods per rotation
2. Length per signal period

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA08	64008

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Invalid parameter in IDN " P-0-0150 / P-0-0180 -->Process channel-->Data-->Sin / Cos-->Length per signal period"	Please check in P-0-0150 / P-0-0180-->Process channel-->Data-->Sin / Cos-->Length per signal period" must greater than 0 by linear encoder.
Invalid parameter in IDN " P-0-0150 / P-0-0180 -->Process channel-->Data-->Sin / Cos" Multiturnlength greater than 140,737488355328km.	Please check in P-0-0150 / P-0-0180 -->Process channel-->Data-->Sin / Cos: multiturnlength = "signal periods per rotation" * "length per signal period" must lower than 140,737488355328km

Further Information
AX5000_IDN-Description: "P-0-0150 / P-0-0180-->Process channel-->Data-->Sin / Cos"

4.741 FA09, Invalid parameter "P-0-0150 / P-0-0180 -->Para channel-->Linear resolution about digital interface".

Invalid parameter "P-0-0150 / P-0-0180 -->Para channel-->Linear resolution about digital interface" must greater than 0.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA09	64009

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Invalid parameter in IDN " P-0-0150 / P-0-0180 -->Para channel-->Linear resolution about digital interface" must greater than 0.	Please check in P-0-0150 / P-0-0180-->Para channel-->Linear resolution about digital interface".

Further Information
AX5000_IDN-Description: "P-0-0150 / P-0-0180-->Para channel-->Linear resolution about digital interface"

4.742 FA40, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA40	64064

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.743 FA41, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA41	64065

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.744 FA42, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA42	64066

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.745 FA43, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA43	64067

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.746 FA44, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA44	64068

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.747 FA45, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA45	64069

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.748 FA46, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA46	64070

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.749 FA47, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA47	64071

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.750 FA48, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): quadrature encoder error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA48	64072

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The pulse sequence of the digital traces (cosine and sine) is incorrect.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
The spacing between the edges is too small.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.

4.751 FA49, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): analog signal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA49	64073

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The feedback line is defective.	Check the line.
The calculated value lies outside the range of tolerance (0.53 Vpp-1.34 Vpp).	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.

4.752 FA4A, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): Commutation, analog part

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA4A	64074

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.753 FA4B, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): Quadrant initialization error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA4B	64075

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.754 FA4C, Feedback process channel error. Failed to set the reference voltage.

Feedback process channel error. Failed to set the reference voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA4C	64076

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.755 FA4D, Feedback process channel error. Firmware index not valid.

Feedback process channel error. Firmware index not valid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA4D	64077

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.756 FA60, Feedback error TTL: System error

Feedback error TTL: System error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA60	64096

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.757 FA61, Feedback error TTL: Unknown state

Feedback error TTL: Unknown state

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA61	64097

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.758 FA62, Feedback error TTL: Quadrature encoder error

Feedback error TTL: Quadrature encoder error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA62	64098

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
With some TTL feedback systems this problem occurs during the initialization phase.	Enter 500 ms as the value for the IDN P-0-0150 "Wait time after power up".
The feedback system is faulty.	Please replace the motor.
There is a large amount of interference to the feedback signal.	Please analyze and remove this interference.

4.759 FA63, Feedback error TTL: Quadrant initialization error

Feedback error TTL: Quadrant initialization error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA63	64099

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

4.760 FA64, Feedback error TTL: Reference voltage error

Feedback error TTL: Reference voltage error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA64	64100

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.761 FA65, Feedback error TTL: Firmware index not supported

Feedback error TTL: Firmware index not supported

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA65	64101

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

4.762 FA80, Feedback "Resolver": Got no timer

A timer is not available.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA80	64128

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.763 FA81, Feedback "Resolver": Unknown state

An internal error occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA81	64129

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.764 FA82, Feedback "Resolver": Initialization of the sampling instance failed

Initialization of the sampling time points has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA82	64130

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver cabling is faulty.	Please check the cabling.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
You have selected and parametrized an unsuitable resolver.	Please check the resolver parameter in the IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Data-->Resolver"

4.765 FA83, Feedback "Resolver": Calibration incorrect

The calibration data are missing or are incorrect.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA83	64131

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.766 FA84, Feedback "Resolver": Number of poles not supported.

The parametrized number of poles is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA84	64132

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have parametrized an unsupported number of poles.	Please check the parametrization of IDN "P-0-0150".

Please consider this note!

Only resolvers with 2, 4, 6 and 8 poles are supported.

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Resolver-->Number of poles"

4.767 FA85, Feedback "Resolver": Excitation frequency not supported

Excitation frequency not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA85	64133

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have parametrized an unsupported excitation frequency in IDN "P-0-0150".	Only an 8 kHz excitation frequency is supported.

Please consider this note!

Only an 8 kHz excitation frequency is supported.

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Resolver-->Excitation frequency"

4.768 FA86, Feedback "Resolver": Transformation ratio not supported.

The parametrized transformation ratio is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA86	64134

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have parametrized an unsupported transformation ratio in IDN "P-0-0150".	Please check the parametrization of the transformation ratio in IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150 -->Transformation ratio"

4.769 FA87, Feedback "Resolver": Connector not supported.

The parametrized connection is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA87	64135

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have parametrized an unsupported connection in IDN "P-0-0150".	The resolver must be connected to sockets "X12" or "X22".

4.770 FA88, Feedback "Resolver": Invalid ADC configuration

The ADC configuration is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA88	64136

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.771 FA89, Feedback "Resolver": ADC time out

A time out occurred in the ADC.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA89	64137

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.772 FA8A, Feedback "Resolver": Hardware does not support a resolver

The present AX5000 does not support any resolver.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA8A	64138

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The hardware version does not support any resolver.	Please replace the device.

4.773 FA8B, Feedback "Resolver": Amplitude of the resolver output voltage too large

The amplitude monitoring has determined the maximum value of the resolver output voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA8B	64139

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver cabling is faulty.	Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
The resolver is faulty.	Please replace the motor.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The amplitude monitoring is not optimally parametrized.	Please check the parametrization of the amplitude monitoring in IDN "P-0-0150".
You have parametrized an unsupported transformation ratio in IDN "P-0-0150".	Please check the parametrization of the transformation ratio in IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Data-->Resolver-->Amplitude monitoring-->Max limit" and "P-0-0150-->Transformation ratio"

4.774 FA8C, Feedback "Resolver": Amplitude of the resolver output voltage too low

The amplitude monitoring has determined the minimum value of the resolver output voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA8C	64140

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver cabling is faulty.	Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
The resolver is faulty.	Please replace the motor.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
The amplitude monitoring is not optimally parametrized.	Please check the parametrization of the amplitude monitoring in IDN "P-0-0150".
You have parametrized an unsupported transformation ratio in IDN "P-0-0150".	Please check the parametrization of the transformation ratio in IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Data-->Resolver-->Amplitude monitoring-->Min limit and "P-0-0150-->Transformation ratio""

4.775 FA8D, Feedback "Resolver": Hardware does not support a resolver

The present AX5000 does not support any resolver.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA8D	64141

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The hardware version does not support any resolver.	Please replace the device.

4.776 FA8E, Feedback "Resolver": Internal error

The evaluation of the signals is unstable

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA8E	64142

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.777 FA8F, Feedback "Resolver": Feedback gear not supported.

The resolver does not support a feedback gearbox.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA8F	64143

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
In the IDN "P-0-0152" and/or "P-0-0153" a value has been parametrized as not equal to "1".	Both values should be parametrized to "1".

Further Information
AX5000_IDN-Description: "P-0-0152"; "P-0-0153"

4.778 FA90, Feedback "Resolver": Amplitude correction limit exceeded.

The upper or lower limit of the amplitude correction has been exceeded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA90	64144

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The amplitude correction limit values (0.9-1.1) have been exceeded in IDN "P-0-0150".	Please check the parametrization of IDN "P-0-0150".
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Please consider this note!

When the amplitude correction value less than 1, the cosine amplitude is adjusted, when the value is greater than 1, the sine amplitude is adjusted.

Further Information
AX5000_IDN-Description: "P-0-0150-->Process channel-->Data-->Resolver-->Sin/Cos Amplitude correction"

4.779 FA91, Feedback "Resolver": Use of reserved parameter.

Reserved parameters of IDN "P-0-0150" were parametrized.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA91	64145

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Reserved parameters of IDN "P-0-0150" were parametrized.	Please check the parametrization of IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150-->rsvd"

4.780 FA92, Feedback "Resolver": Offset out of range.

The offset compensation has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA92	64146

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver is not connected correctly.	Check the resolver connection.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.781 FA93, Feedback "Resolver": Offset balance failed

The offset balance failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA93	64147

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver is not connected correctly.	Check the resolver connection.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.782 FA94, Feedback "Resolver": Invalid cycle time configuration.

The current controller cycle time and the excitation frequency must be tuned with each other.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA94	64148

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The IDN "P-0-0002" (cycle time) and "P-0-0150" (excitation frequency) parameters are not tuned with each other.	Check both IDNs.

Further Information
AX5000_IDN-Description: "P-0-0002" and "P-0-0150-->Process channel-->data-->Resolver-->Excitation frequency"

4.783 FA95, Feedback "Resolver": Internal error

Internal software error in the resolver evaluation algorithm.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA95	64149

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.784 FA96, Feedback "Resolver": Phase Calibration - Amplitude too low

During phase calibration the resolver output voltage fell below the minimum amplitude value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA96	64150

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver cabling is faulty.	Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
You have parametrized an unsupported transformation ratio in IDN "P-0-0150".	Please check the parametrization of the transformation ratio in IDN "P-0-0150".
The resolver is faulty.	Please replace the motor.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0150 -->Transformation ratio"

4.785 FA97, Feedback "Resolver": Phase Calibration - Amplitude too high

During phase calibration the resolver output voltage fell below the maximum amplitude value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA97	64151

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The resolver cabling is faulty.	Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
You have parametrized an unsupported transformation ratio in IDN "P-0-0150".	Please check the parametrization of the transformation ratio in IDN "P-0-0150".
The resolver is faulty.	Please replace the motor.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0150 -->Transformation ratio"

4.786 FAB0, Feedback "MES": Unknown state

An internal error has occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB0	64176

Class	Type
Error	Software exception

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.787 FAB1, Feedback "MES": Connector not supported.

The parametrized connection is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB1	64177

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have parametrized an unsupported connection in IDN "P-0-0150".	The MES must be connected to sockets "X12" or "X22".

4.788 FAB2, Feedback "MES": Invalid ADC configuration

The ADC configuration is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB2	64178

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.789 FAB3, Feedback "MES": ADC time out

A time out occurred in the ADC.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB3	64179

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.790 FAB4, Feedback "MES": Hardware does not support a MES

The present AX5000 does not support any MES.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB4	64180

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The hardware version does not support any MES.	Please replace the device.

4.791 FAB5, Feedback "MES": Output voltage too high

The amplitude monitoring has determined the maximum value of the MES output voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB5	64181

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The MES cabling is faulty.	Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
The MES is faulty.	Please replace the motor.
The amplitude monitoring is not optimally parametrized.	Please check the parametrization of the amplitude monitoring in IDN "P-0-0150".
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Data-->MES-->Amplitude monitoring-->Max limit"

4.792 FAB6, Feedback "MES": Output voltage too low

The amplitude monitoring has determined the minimum value of the MES output voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB6	64182

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The MES cabling is faulty.	Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
The MES is faulty.	Please replace the motor.
The amplitude monitoring is not optimally parametrized.	Please check the parametrization of the amplitude monitoring in IDN "P-0-0150".
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Data-->MES-->Amplitude monitoring-->Min limit"

4.793 FAB7, Feedback "MES": Hardware does not support a MES

The present AX5000 does not support any MES.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB7	64183

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The hardware version does not support any MES.	Please replace the device.

4.794 FAB8, Feedback "MES": Internal error

The evaluation of the signals is unstable

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB8	64184

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.795 FAB9, Feedback "MES": Feedback gear not supported.

The MES does not support a feedback gearbox.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB9	64185

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
In the IDN "P-0-0152" and/or "P-0-0153" a value has been parametrized as not equal to "1".	Both values should be parametrized to "1".

Further Information
AX5000_IDN-Description: "P-0-0152"; "P-0-0153"

4.796 FABA, Feedback "MES": Amplitude correction limit exceeded.

The upper or lower limit of the amplitude correction has been exceeded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FABA	64186

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The amplitude correction limit values (0.9-1.1) have been exceeded in IDN "P-0-0150".	Please check the parametrization of IDN "P-0-0150".
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

Please consider this note!

When the amplitude correction value less than 1, the cosine amplitude is adjusted, when the value greater than 1, the sine amplitude is adjusted.

Further Information
AX5000_IDN-Description: "P-0-0150-->Process channel-->Data-->Resolver-->Sin/Cos Amplitude correction"

4.797 FABB, Feedback "MES": Use of reserved parameter.

Reserved parameters of IDN "P-0-0150" were parametrized.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FABB	64187

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Reserved parameters of IDN "P-0-0150" were parametrized.	Please check the parametrization of IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150-->rsvd"

4.798 FABC, Feedback "MES": Invalid cycle time configuration.

The current controller cycle time and the excitation frequency must be tuned with each other.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FABC	64188

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The IDN "P-0-0002" (cycle time) and "P-0-0150" (excitation frequency) parameters are not tuned with each other.	Check both IDNs.

4.799 FAD0, Feedback "EtherCAT Encoder": Position init value is invalid

The AX5000 has detected a position error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAD0	64208

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
The difference between the given position init value in P-0-0622 and the received value in P-0-0620 is to big.	Adjust the initialization value in P-0-0622.

4.800 FAD1, Feedback "EtherCAT Encoder": Received status signals an error.

The AX5000 has detected a position error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAD1	64209

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	Execute Reset-Command (S-0-0099). If the drive is still in OP it will switch to SafeOp while executing the reset.

Possible Causes	Solutions
The received encoder status in P-0-0621 signals an invalid encoder value.	Check the transmitted values to the AX5000.

4.801 FC00, FPGA error

FPGA error: load failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC00	64512

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.802 FC01, FPGA error

FPGA error: test failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC01	64513

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.803 FC02, FPGA error

FPGA error: load failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC02	64514

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.804 FC03, Control voltage error: undervoltage

Control voltage error: undervoltage

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC03	64515

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.805 FC04, Driver unit error: undervoltage

Driver unit error: undervoltage

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC04	64516

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
The safety dummy card in the "X3x" slot of the AX5000 is missing or is not correctly inserted.	Switch the voltage off, insert the safety dummy card correctly into the "X3x" slot of the AX5000 and switch the voltage on again.
The safety card has been activated.	see message "FC0C"

4.806 FC05, DSP watchdog error.

DSP watchdog error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC05	64517

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A fatal error occurred. A device reboot is required.

4.807 FC06, DSP clock error.

DSP clock error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC06	64518

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.808 FC07, ESC clock error.

ESC clock error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC07	64519

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.809 FC08, Over-current error

Over-current error external DC link connection (X02, X07 or X51(AX5021))

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC08	64520

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
External short circuit	Check the cables, AX-Bridge and remove the short circuit
No uniform mains power supply in physical DC-link connection	Provide uniform mains power supply

4.810 FC09, Dead time error.

Dead time error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC09	64521

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A fatal error occurred. A device reboot is required.

4.811 FC0A, Lock error.

Lock error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0A	64522

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A fatal error occurred. A device reboot is required.

4.812 FC0B, Over-current error motor, short circuit detection (X13 / X23).

The drive hardware detected an over-current on the motor phases. The short circuit detection was triggered.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0B	64523

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.813 FC0C, Safety card activated

The safety card has been activated and has placed the servo drive in the safe state.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0C	64524

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
The axis is enabled and the safety card has been activated by a malfunction in the safety zone of the machine/plant.	Rectify the malfunction in the safety zone of the machine/plant and perform a reset.
The axis is enabled and the safety card has been activated by a cable breakage in the 24 V supply to the card.	Rectify the cable breakage and perform a reset.

4.814 FC0D, Shorted coils brake triggered by the FPGA logic.

Shorted coils brake triggered by the FPGA logic.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0D	64525

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	A fatal error occurred. A device reboot is required.

4.815 FC0E, Torque off triggered by the FPGA logic.

Torque off triggered by the FPGA logic.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0E	64526

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.816 FC0F, FPGA logic: Brake chopper error

FPGA logic: Brake chopper error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0F	64527

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	A fatal error occurred. A device reboot is required.

4.817 FC10, FPGA logic: Motor current sum error.

FPGA logic: Motor current sum error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC10	64528

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.818 FC11, FPGA logic: Power supply error.

FPGA logic: Power supply error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC11	64529

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.819 FC12, FPGA logic: U_mains phase error.

FPGA logic: U_mains phase error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC12	64530

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

4.820 FC13, FPGA logic:DC link overvoltage

FPGA logic:DC link overvoltage

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC13	64531

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

4.821 FC30, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC30	64560

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.822 FC31, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC31	64561

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.823 FC32, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC32	64562

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.824 FC33, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC33	64563

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.825 FC34, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC34	64564

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.826 FC35, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC35	64565

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.827 FC36, Internal error (I2C)

Internal error (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC36	64566

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.828 FC37, Internal communication error

Communication error via I2C between the modules of the servo drive

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC37	64567

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.829 FC38, Error reading error stack.

Error reading error stack (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC38	64568

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.830 FC39, Error reading operation time.

Error reading operation time (I2C)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC39	64569

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.831 FC3A, Error reading eeprom.

Error reading eeprom (I2C), Id check failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC3A	64570

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.832 FC3B, Error reading error stack.

Error reading error stack (wrong format)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC3B	64571

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.833 FC3C, Error reading error stack.

Error reading error stack (wrong format)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC3C	64572

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.834 FC3D, Error reading operation time.

Error reading operation time (wrong format)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC3D	64573

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.835 FC3E, Error reading factory settings.

Error reading factory settings (wrong format)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC3E	64574

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.836 FC3F, Error reading factory settings.

Error reading factory settings.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC3F	64575

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.837 FC40, Error saving the hardware IDs.

Error saving the hardware IDs.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC40	64576

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.838 FC41, Error saving the hardware IDs.

Error saving the hardware IDs.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC41	64577

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.839 FC42, Error saving factory settings.

Error saving factory settings.(timeout)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC42	64578

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.840 FC43, Error saving factory settings.

Error saving factory settings.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC43	64579

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.841 FC44, Error clearing operation time.

Error clearing operation time. (timeout)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC44	64580

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.842 FC45, Error clearing error list.

Error clearing error list. (Timeout)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC45	64581

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.843 FC46, Error reading operation time.

Error reading operation time.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC46	64582

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.844 FC47, Error clearing error stack.

Error clearing error stack.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC47	64583

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.845 FC48, Internal error (invalid FPGA config)

Internal error (invalid FPGA config)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC48	64584

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.846 FC49, Internal error (operation time validation)

Internal error (operation time validation)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC49	64585

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.847 FC70, Initialization of the keypad failed.

Initialization of the keypad failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC70	64624

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.848 FC80, Probe unit error.

Probe unit error: (value change exceeds limit)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC80	64640

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.849 FC81, Probe unit error.

Probe unit error: (time change exceeds limit)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC81	64641

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.850 FC82, Probe unit error.

Probe unit error: (internal error)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC82	64642

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.851 FC83, Invalid probe unit configuration

The signal configuration of the probe unit is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC83	64643

Class	Type
Error	Command error

Standard Reaction	Reset
Abort the procedure command execution.	Execute Reset-Command (S-0-0099).

4.852 FC84, Probe unit configuration: Activate signal configuration error.

Probe unit configuration: Activate signal configuration error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC84	64644

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.853 FCB0, LCD Display initialization failed.

LCD Display initialization failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCB0	64688

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.854 FCB1, LDC Display error.

LCD Display error. (internal error)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCB1	64689

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.855 FCB2, LDC Display error.

LCD Display error. (internal error)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCB2	64690

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.856 FCB3, LCD-Display: Initialization error

An error has occurred during internal initialization of the LCD display.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCB3	64691

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A Fatal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.857 FCB4, LCD-Display: Time out

An time out has occurred during internal initialization of the LCD display.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCB4	64692

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
A Fatal software error.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.858 FCD0, Positive limit switch error.

Positive limit switch error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD0	64720

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.859 FCD1, Negative limit switch error.

Negative limit switch reached

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD1	64721

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The axis has been moved to the negative limit switch.	Please move the axis away from the negative limit switch.

4.860 FCD2, Over speed error.

The speed of the axis is higher than the parametrized maximum value in S-0-0113

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD2	64722

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The parametrized maximum value was exceeded.	Check whether the value of parameter S-0-0113 corresponds to the value from the technical data of the motor.
If the application requires a maximum value of 3000, you must set the value in S-0-0113 approx. 10% higher, so that the servo drive can adjust the 3000.	Analyze the value in S-0-0113.
An external force is acting on the drive system.	Analyze whether that is permissible and parameterize the drive system if necessary.
The parametrized maximum value was exceeded.	Analyze why the motor is turning so fast and rectify this.
Commutation error; the motor accelerates in an uncontrolled fashion.	Analyze why the commutation of the motor is not correct.

Further Information
AX5000_IDN-Description: "S-0-0113"

4.861 FCD3, Over speed error.

The speed of the axis is higher than the parametrized maximum value in S-0-0113

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD3	64723

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The parametrized maximum value was exceeded.	Check whether the value of parameter S-0-0113 corresponds to the value from the technical data of the motor.
If the application requires a maximum value of 3000, you must set the value in S-0-0113 approx. 10% higher, so that the servo drive can adjust the 3000.	Analyze the value in S-0-0113.
An external force is acting on the drive system.	Analyze whether that is permissible and parameterize the drive system if necessary.
The parametrized maximum value was exceeded.	Analyze why the motor is turning so fast and rectify this.
Commutation error; the motor accelerates in an uncontrolled fashion.	Analyze why the commutation of the motor is not correct.

Further Information
AX5000_IDN-Description: "S-0-0113"

4.862 FCD4, Amplifier overload utilization error.

The parametrized utilization limit of the AX5000 has been reached.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD4	64724

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The parametrized utilization limit is too low.	Increase the limit value.
This error message can be suppressed; the current is lowered to P-0-0093 on reaching the utilization limit.	Parameterize the IDN P-0-0316 accordingly.
The application overloads the AX5000.	Use a larger AX5000 if necessary.

Further Information
AX5000_IDN-Description: "P-0-0093 and P-0-0316"

4.863 FCD5, Current limitation: U/F error

The current limitation of the AX5000 was triggered.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD5	64725

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The mechanical system is too sluggish.	Analyze your application and try make the mechanical system smoother.
The use of asynchronous motors:	Check the load conditions and if necessary activate the acceleration controller (IDNs P-0-0112, P-0-0113, P-0-0114 and P-0-0451) and/or the breakdown protection controller (IDNs P-0-0115, P-0-0116, P-0-0117 and P-0-0451).
The application overloads the AX5000.	Use a larger AX5000 if necessary.

Further Information
AX5000_IDN-Description: "P-0-0112, P-0-0113, P-0-0114, P-0-0115, P-0-0116, P-0-0117, P-0-0451"

4.864 FCD6, Monitoring functions: Shorted coil / DC brake error

The drive detected a over-current error during the brake application.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD6	64726

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
This error depends on the total system configured and occurs only during the armature short circuit braking / DC braking:	The solution depends on the total system configured.
Asynchronous motor	Check the parametrization of the current controller and the IDNs P-0-0106 and S-0-0107. Analyze the load conditions during the braking procedure.

Further Information
AX5000_IDN-Description: "S-0-0106 and S-0-0107"

4.865 FCD7, Maximum output frequency limit exceeded.

The maximum output frequency limit (see device specification) has been exceeded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD7	64727

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

4.866 FCD8, Motor phase connection error.

Motor phase connection error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD8	64728

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

4.867 FCD9, Positive limit switch activated while moving negative

The positive limit switch was activated while the axis was moving negative.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCD9	64729

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The limit switch connection seems to be inverted.	Check the limit switch connection.

4.868 FCDA, Negative limit switch activated while moving positive

The negative limit switch was activated while the axis was moving positive.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCDA	64730

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The limit switch connection seems to be inverted.	Check the limit switch connection.

4.869 FD00, Motor management: Initialization failed

Motor management: Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD00	64768

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.870 FD01, Motor management: Initialization failed

Motor management: Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD01	64769

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.871 FD03, Brake management error.

Brake management error: (no timer available)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD03	64771

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

4.872 FD04, Periphery voltage missing.

Periphery voltage missing.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD04	64772

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.873 FD05, Motor management error.

Motor management error.(internal error: unknown channel)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD05	64773

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.874 FD06, Motor management error.

Motor management error.(internal error: no freq)

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD06	64774

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.875 FD07, Motor over-temperature shut down.

Motor over-temperature shut down.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD07	64775

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.876 FD08, Motor management: Drive type don't match.

Motor management: The motor dataset used is optimized for a different drive, and this drive is unable to operate it optimally.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD08	64776

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The motor data were copied from one servo drive to the other.	In the TCDriveManager select the motor used from the motor database. The system will then provide the motor data optimized for this drive type.

4.877 FD09, Motor management: Motor type don't match.

The type of motor according to the electronic motor type label does not match the motor type in TcDriveManager.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD09	64777

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Typo while entering the motor type in the TcDriveManager.	Please enter the motor type in TcDriveManager exactly as it is shown in the electronic type label.

Please consider this note!

The entry in TcDriveManager: "AM3042-0G30" and the entry in the electronic motor type label "AM3042-0G30-0000" are not identical.

4.878 FD0A, Configured channel peak current is greater than the motor peak current.

The Configured channel peak current is greater than the motor peak current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0A	64778

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.879 FD0B, Configured channel peak current is greater than the amplifier channel peak current.

The Configured channel peak current is greater than the amplifier channel peak current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0B	64779

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.880 FD0C, Configured channel current is greater than the motor continuous stall current.

The configured channel current is greater than the motor continuous stall current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0C	64780

Class	Type
Error	Parameter error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.881 FD0D, Configured channel current is greater than the amplifier rated current.

The configured channel current is greater than the amplifier rated current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0D	64781

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.882 FD0E, Invalid total output current.

The permissible total rated output current for 2-channel devices has been exceeded.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0E	64782

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have chosen 2 motors, in which the total standstill currents is greater than the total rated output current of the 2-channel devices.	Please choose another combination of motors.

Further Information
AX5000_Operating-Instructions - Chapter "Product description-->Technical data"; AM3000/3500_Operating-Instructions - Chapter "Technical data"

4.883 FD0F, Motor brake: Current monitoring error.

Motor brake: Current monitoring error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0F	64783

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.884 FD10, Periphery voltage too high.

Periphery voltage too high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD10	64784

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.885 FD11, Periphery voltage too low.

Periphery voltage too low.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD11	64785

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.886 FD12, Unknown constraint IDN

Unknown constraint IDN

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD12	64786

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.887 FD13, Too low dielectric strength of the motor winding.

Too low dielectric strength of the motor winding.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD13	64787

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.888 FD14, Constraint check failed.

The constraint check of the motor data set failed. This may be happen if the motor dataset constraints, e.g. the current controller cycle time or the mains voltage level do not match the actual values of the drive.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD14	64788

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.889 FD15, The maximum feedback frequency is too high.

The maximum feedback frequency is too high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD15	64789

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.890 FD16, Unknown feedback system.

Unknown feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD16	64790

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.891 FD17, Motor overload shutdown.

Motor overload shutdown.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD17	64791

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.892 FD18, Motor brake current: Measuring error

An impermissible signal was detected during the measurement of the motor brake current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD18	64792

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.893 FD19, A/D-Converter: Peripheral voltage - measuring error

The analog/digital converter has picked up an invalid signal during measurement of the peripheral voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD19	64793

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
EMC-Problems.	Check the cable screening and screen connection of all cables to the devices. Check whether all components are earthed on the same potential. Check whether the AX5000 was securely attached to the metallic rear panel and whether the panel is earthed.
There is an internal hardware error.	Send the AX5000 to the Beckhoff branch office that is responsible for you.

4.894 FD1A, A/D-Converter: Motor temperature - measuring error

A/D-Converter: Motor temperature - measuring error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1A	64794

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.895 FD1B, Parameter invalid: Motor continuous stall torque > motor peak torque

P-0-0070 "motor continuous stall torque" is greater than P-0-0073 "motor peak torque"

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1B	64795

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.896 FD1C, ASM don't supports usage of P-0-0077

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1C	64796

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.897 FD1D, Invalid torque characteristic data.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1D	64797

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.898 FD1E, Invalid inductance characteristic data.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1E	64798

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.899 FD1F, Got no memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1F	64799

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.900 FD20, Motor management: Invalid motor data.

Motor data are missing for the calculation of the motor characteristic curve.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD20	64800

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
If at least one of the following functions - speed limitation (P-0-0451), current limitation (P-0-0451) or field weakening operation (P-0-0455) - is activated, the following parameters must be valid.	Check the following IDNs: P-0-0055; P-0-0066; P-0-0070; P-0-0073; P-0-0077 and S-0-0196 (If no rated motor current is entered, the motor standstill current is used).

Further Information
AX5000_IDN-Description: "P-0-0055; P-0-0066; P-0-0070; P-0-0073; P-0-0077; P-x-0451; P-0-0455 and S-0-0196"

4.901 FD21, Motor management: Voltage error

The mains voltage range entered is not permissible for the field weakening operation with synchronous motors.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD21	64801

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The permissible range of the voltage value for the field weakening operation "U_mains-min and U_mains-max" of the IDN P-0-455 is calculated during initialization and compared with the parametrized value in the IDN P-0-0201.	"U_mains-min" less than (P-0-0201 minus P-0-0203) and "U_mains-max" greater than (P-0-0201 plus P-0-0202). Check the IDNs for plausible values.

Further Information
AX5000_IDN-Description: "P-0-0201; P-0-0202; P-0-0203 and P-0-0455"

4.902 FD22, Motor management: Current error

The parametrized current value does not correspond to the calculated value (field weakening operation).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD22	64802

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The desired operating point is set in the TCDriveManager on the field weakening curve (slider). The current value resulting from this is automatically entered into the IDN P-0-0455; if this IDN is changed manually it can become invalid.	Check the IDN P-0-0455 and restart the servo drive if necessary.

Further Information
AX5000_IDN-Description: "P-0-0455"

4.903 FD23, Invalid parameter: Switching frequency of the IGBT module is not supported

The parametrized switching frequency of the IGBT module P-0-0001 is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD23	64803

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.904 FD24, Invalid parameter: Motor continuous stall force > motor peak force

P-0-0126 "motor continuous stall force" is greater than P-0-0128 "motor peak force"

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD24	64804

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.905 FD25, The possible maximum feedback speed is too high

The possible maximum feedback speed is too high. Check S-0-0113, P-0-0150/P-0-0180, P-0-0152/P-0-0182, P-0-0153/P-0-0183.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD25	64805

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.906 FD26, The current feedback speed is too high

The current feedback speed is too high. Check S-0-0113, P-0-0150/P-0-0180, P-0-0152/P-0-0182, P-0-0153/P-0-0183.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD26	64806

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.907 FD27, The emergency brake function was triggered

The emergency brake function was triggered by a torque off error while the actual velocity was outside the standstill window. The motor brake usage is configured to 'Emergency brake'. See P-0-0060.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD27	64807

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.908 FD29, Invalid gain scheduling characteristic data

Invalid gain scheduling characteristic data

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD29	64809

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Current Values are not in increasing order	The current values must be parameterised in a strictly monotonously increasing manner, i.e. every current value must be higher than the previous one
Current or proportial gain values are not within the permissible range	Check limitations

4.909 FD40, Power management: Initialization failed

Power management: Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD40	64832

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.910 FD41, Mains supply: U mains too high.

The measured mains voltage is higher than the parameterized supply voltage in P-0-0201 and P-0-0202.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD41	64833

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
False parameterized mains voltage	Check the parameterization and increase the mains voltage tolerance as necessary
The mains voltage is wrong	Check the mains voltage

Please consider this note!

Power surge error limit can be read out in P-0-0206

Further Information
AX5000_IDN-Description: "S-0-0201", "S-0-0202" and "S-0-0206"

4.911 FD42, Mains supply: U mains too low.

Mains supply: U mains too low.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD42	64834

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.912 FD43, Mains supply: Power down.

A power supply failure has occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD43	64835

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The mains supply is faulty.	Analyze the mains supply and rectify the fault.

4.913 FD44, Mains supply: Phase error.

A phase of the 3-phase mains supply has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD44	64836

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The mains supply is faulty.	Analyze the mains supply and rectify the fault.
The 3-phase mains supply is continually afflicted by faults.	By means of IDN P-0-0204, activate a filter that causes the phase monitoring to wait longer before triggering the error.
You are operating the AX5000 on a single-phase mains supply.	Deactivate the phase monitoring by means of IDN P-0-0204 bit 3. If you had assumed a 3-phase mains supply during the project engineering, check in the IDN P-0-0092 and P-0-0093 whether you need to enter a derating.

Please consider this note!

On no account should you deactivate the phase monitoring if a phase of the 3-phase mains supply has failed, as otherwise the AX5000 will be destroyed.

Further Information
AX5000_IDN-Description: "P-0-0092", "P-0-0093" and "P-0-0204"

4.914 FD45, Continuous power internal brake resistor too low.

Continuous power internal brake resistor too low.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD45	64837

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.915 FD46, Power management error.

Power management internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD46	64838

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.916 FD47, Power management error.

Power management error: Initialization failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD47	64839

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.917 FD48, Power management error.

Power management error: internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD48	64840

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.918 FD49, IGBT temperature measuring error.

IGBT temperature measuring error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD49	64841

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.919 FD4A, IGBT temperature measuring error.

The temperature of the IGBT cannot be determined due to a communication error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4A	64842

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The safety dummy card in the "X3x" slot of the AX5000 is missing or is not correctly inserted.	Switch the voltage off, insert the safety dummy card correctly into the "X3x" slot of the AX5000 and switch the voltage on again.
The safety card has been activated.	see message "FC0C"

4.920 FD4B, DC link undervoltage.

DC link undervoltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4B	64843

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The mains voltage was interrupted	Provide adequate mains voltage
The DC-link undervoltage threshold is too high	By P-x-0203 the DC-link undervoltage threshold can be lowered. These can be read out in P-0-0206.
The mains voltage is too low or fluctuates	Provide adequate mains voltage

Further Information
AX5000_IDN-Description: "S-0-0203" and "S-0-0206"

4.921 FD4C, DC link overvoltage

DC link overvoltage because the brake power is too low

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4C	64844

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Parameterization of the brake chopper is wrong	Check the parametrization of the brake chopper
Wrong selection of the brake resistor	Check the resistance of the brake resistor
Wrong selection of the brake resistor	Check the power of the brake resistor
The brake resistor is defective	Measure the resistance of the brake resistor

4.922 FD4D, Cooling error shut down.

Cooling error shut down.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4D	64845

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The ambient temperature is too high	Cool down the ambient temperature
The fan is defective	Check the fan
Internal brake power and power loss of axis are too high	Lower the brake power and power loss of axis
The cooling slots or the measuring sensors are polluted	Clean the cooling slots and the measuring sensors

4.923 FD4E, Control voltage error

Control voltage error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4E	64846

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.924 FD4F, DC link overvoltage

DC link overvoltage error with error reaction torque off.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4F	64847

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.925 FD50, DC link undervoltage

DC link undervoltage error with error reaction torque off.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD50	64848

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.926 FD51, Power supply phase error.

Power supply phase error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD51	64849

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.927 FD52, Unknown internal brake resistor.

Unknown internal brake resistor.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD52	64850

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.928 FD53, U_mains power up after mains power failure.

U_mains power up after mains power failure.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD53	64851

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.929 FD54, Unknown nominal device current.

Unknown nominal device current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD54	64852

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.930 FD55, AX5021: Brake resistor over-temperature shut down

The temperature sensor of the external brake resistor from the brake module AX5021 indicates over-temperature

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD55	64853

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The ambient temperature is too high	Cool down the ambient temperature
Wrong selection of the brake resistor	Check the power of the brake resistor
Parameterization in P-0-0208 is wrong	Check the parametrization

Further Information
AX5000_IDN-Description: "S-0-0208"

4.931 FD56, Error Power Management: Transfer error, unknown channel.

Error Power Management: Transfer error, unknown channel.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD56	64854

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.932 FD57, Error Power Management: Load resistor active and axis enabled

Error Power Management: Load resistor active and axis enabled

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD57	64855

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

4.933 FD58, Error Power Management: Check external DC link connection

Error Power Management: Check external DC link connection

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD58	64856

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.934 FD59, Error Power Management: Wrong external brake resistor found

The determined values of the external brake resistor connected do not correspond to the parametrized values in the TCDriveManager.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD59	64857

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
General measurement error; measure the brake resistor and compare the ohmic value determined to the data on the type label.	If the value corresponds, deactivate the internal test of the external brake resistor: To do this, set the IDN P-0-0204 "Disable DC link interface check" to "enable". Observe the application with regard to the proper operation of the external brake resistor.
General measurement error; measure the brake resistor and compare the ohmic value determined to the data on the type label.	If the value does not correspond, exchange the brake resistor or enter the determined ohmic value in the TCDriveManager; afterwards, switch the 24 V supply off and on again. .

Please consider this note!

If you have ruled out the above measurement errors, you can switch off the brake resistor check via the IDN P-0-0204 "Bit 1".

4.935 FD5A, Power Management: Over-current - DC link connection

An over-current occurred when checking the external DC link connection X02.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD5A	64858

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Brake resistor too small.	Analyze the application and calculate the required braking power.
Short-circuit on X02	Check the connection on X02

4.936 FD5C, Power Management: Powersupply type is wrong

The paramitrized powersupply type in P-0-0204 (bit 9 and bit 10) is other than found.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD5C	64860

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Powersupply type is wrong.	Change powersupply type in P204 (bit 9 and 10).

4.937 FD5D, Error Power Management: Load resistor active and axis enabled. Error reaction closed loop ramp

Error Power Management: Load resistor active and axis enabled. Error reaction closed loop ramp

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD5D	64861

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.938 FD5E, Device rated current too high for single phase supply.

Device rated current too high for single phase supply. Change power supply type (AC1) or P-0-0093

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD5E	64862

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Power supply type is wrong in P-0-0204.	Set power supply type to 3 phases (AC 3) in the IDN P-0-0204 bit 9 and bit 10.
Power supply type is single phase (AC 1)	Check in the IDN P-0-0093 whether you need to enter a derating.

4.939 FD5F, Charging error.

An charging error is occurred.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD5F	64863

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
X07, terminal points for using internal brake resistor not connected.	Check terminal points at X07: "+RBint" and "+RB" must be bypassed.
X07, terminal points for using external brake resistor not connected.	Check terminal points at X07: external brake resistor must connected between"+RB" and "-RB".

4.940 FD80, System time underflow error.

System time underflow error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD80	64896

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.941 FD81, Wrong timer pointer.

Wrong timer pointer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD81	64897

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.942 FD82, Out of timer.

Out of timer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD82	64898

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.943 FD83, Invalid identity object type.

Invalid identity object type.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD83	64899

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.944 FD84, Invalid firmware index.

Invalid firmware index.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD84	64900

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.945 FD85, Feedback firmware checksum error.

Feedback firmware checksum error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD85	64901

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.946 FD86, System timer underflow.

System timer underflow.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD86	64902

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.947 FD87, Error: Out of system timer.

Error: Out of system timer.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD87	64903

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.948 FD88, Found not supported hardware type.

Found not supported hardware type.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD88	64904

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.949 FD89, Safety card type not supported.

Safety card type not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD89	64905

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.950 FD8A, Option card: Type not supported

The type of the option card is not supported

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD8A	64906

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option card used is not compatible.	Replace the option card with a compatible version.

4.951 FD8B, Option card: Interface Id is not supported.

The Interface Id of the option card is not supported

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD8B	64907

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The firmware of the option card and that of the AX5000 do not correspond to each another.	The firmware of the option card and that of the AX5000 need to be updated.

4.952 FD8C, Option card: Channel count is not supported.

The channel count of the option card is different to the channel count of the AX5000.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD8C	64908

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
Option card with false channel count mounted.	Mount option card with correct channel count.

4.953 FD8D, Invalid identity object

Identity object in the factory settings is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD8D	64909

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The installation of a compatibility patch failed.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.
An unknown hard- or software error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.954 FD8E, Option card: Interface of the FPGA 2 not supported

The Interface of the FPGA 2 from the Feedback-Option card is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD8E	64910

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
The option card used is not compatible.	Replace the option card with a compatible version.
An unknown firmware error has occurred.	Disconnect the servo drive from the mains (including the 24 V power supply) and start a new attempt. If this error occurs repeatedly, please call the Beckhoff branch office that is responsible for you.

4.955 FDB0, Customer specific function: Initialization failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDB0	64944

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

4.956 FDC0, Internal command state machine error.

Internal command state machine error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDC0	64960

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.957 FDC1, Internal command state machine error.

Internal command state machine error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDC1	64961

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.958 FDC2, Internal command state machine error.

Internal command state machine error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDC2	64962

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.959 FDC3, Internal command state machine error.

Internal command state machine error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDC3	64963

Class	Type
Error	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

4.960 FDD0, Safety card: Unknown hardware type.

Safety card: Unknown hardware type.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD0	64976

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The type of the installed safety card isn't supported.	Check the list of supported/compatible safety card types and change the card to a compatible one.

4.961 FDD1, Safety: internal error, out of memory

Safety: internal error, out of memory

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD1	64977

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Internal software exception.	Please contact the Beckhoff drive support.

4.962 FDD2, Safety: internal error, got no timer

Safety: internal error, got no timer

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD2	64978

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Internal software exception.	Please contact the Beckhoff drive support.

4.963 FDD3, Safety switch off while the axis was enabled.

Safety switch off while the axis was enabled.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD3	64979

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The safety logic has switched off the power stage of the drive while the axis was enabled. In this case the drive is losing the control over the motor and the motor must be mechanically stopped.	The axis should be stopped and disabled before the safety logic triggers the power stage switch off.

4.964 FDD4, Configured safety option don't match

Configured safety option don't match

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD4	64980

Class	Type
Error	Parameter error

Standard Reaction	Reset
The power stage is already switched off	Execute Reset-Command (S-0-0099).

4.965 FDD5, The basic unit of the drive don't supports a safety option.

The basic unit of the drive don't supports a safety option.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD5	64981

Class	Type
Error	Hardware error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The basic unit of the drive isn't prepared for the integration of a safety card.	Remove the safety card or exchange the drive to one with safety support.

4.966 FDD6, Safety Option: Not supported firmware index.

Safety Option: Not supported firmware index.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD6	64982

Class	Type
Error	Hardware error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The firmware or hardware version of the safety option isn't compatible with the firmware or hardware of the drive.	Exchange the safety option to a compatible one. (For detailed information contact the Beckhoff drive support.)

4.967 FDD7, Safety slot: No safety or dummy card inserted

The safety slot (X3x) of the AX5000 contains neither a safety card nor a dummy card

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD7	64983

Class	Type
Error	Hardware error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The card was removed inadvertently.	Insert the card again in the slot.

4.968 FDD8, Safety slot: Incompatible safety or dummy card inserted

The safety slot (X3x) of the AX5000 contains a safety or dummy card that is incompatible to the drive.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD8	64984

Class	Type
Error	Hardware error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The hardware type of the safety option isn't compatible with the hardware of the drive. E.g. a safety card for the drive harware version 1 is inserted in a drive with hardware version 2.	Exchange the safety option to a compatible one. (For detailed information contact the Beckhoff drive support.)

4.969 FDD9, Safety card: safety card activated - internal reaction

The safety logic has been activated and the delay time before the power stage is switched off is running. In this delay time the drive can slow down the motor with a closed loop ramp.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD9	64985

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The AX5000 is in the safe state (emergency stop circuit still active, cabling fault etc.).	Place the system in readiness for operation again.

Please consider this note!

The safety card has been triggered by a certain event. Examine all safety-relevant functions of the system that could trigger such an event.

4.970 FDDA, Safety slot: Wrong safety card AX5805 or AX5806 inserted

The safety slot (X3x) of the AX5000 contains a safety card (AX5805 or AX5806) that is incompatible with the device type. Please use for the AX5y01 to the AX5140 a 'AX5805' and for the AX5160 to the AX5193 a 'AX5806'.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDDA	64986

Class	Type
Error	Hardware error

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

4.971 FDDB, Safety card: Internal error.

An internal error occurred while evaluating the compatibility of the safety card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDDB	64987

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A reset is not possible. A fatal hard- or software error occured and the transition PreOp->SafeOp is blocked.

Possible Causes	Solutions
Internal software exception.	Please contact the Beckhoff drive support.

4.972 FFFE, Missing implementation!

Missing implementation!

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FFFE	65534

Class	Type
Error	Software exception

Standard Reaction	Reset
Torque off	Execute Reset-Command (S-0-0099).

5 Standard-Objects

5.1 1000 Device type

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1000 (Device)
Subindex	0x00
Datatype	UINT32
Min. Value	
Default	5001 (0x00001389)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.2 1008 Device name

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1008 (Device)
Subindex	0x00
Datatype	VISIBLE_STRING
Min. Value	
Default	AX5000
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.3 1009 Hardware version

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1009 (Device)
Subindex	0x00
Datatype	VISIBLE_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.4 100A Software version

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x100A (Device)
Subindex	0x00
Datatype	VISIBLE_STRING
Min. Value	
Default	00
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.5 1018:x Identity

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1018 (Device)
Subindex	0x00
Datatype	UINT8
Min. Value	
Default	4 (0x04)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.5.1 1018:01 Vendor ID

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1018 (Device)
Subindex	0x01
Datatype	UINT32
Min. Value	
Default	2 (0x00000002)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.5.2 1018:02 Product code

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1018 (Device)
Subindex	0x02
Datatype	UINT32
Min. Value	
Default	327704594 (0x13886012)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.5.3 1018:03 Revision

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1018 (Device)
Subindex	0x03
Datatype	UINT32
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.5.4 1018:04 Serial number

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1018 (Device)
Subindex	0x04
Datatype	UINT32
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6 10F3:x Diagnosis History

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x00
Datatype	UINT8
Min. Value	
Default	21 (0x15)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.1 10F3:01 Maximum Messages

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x01
Datatype	UINT8
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.2 10F3:02 Newest Message

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x02
Datatype	UINT8
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.3 10F3:03 Newest Acknowledged Message

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x03
Datatype	UINT8
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Rw
PDO Mapping	
Revision	All

5.6.4 10F3:04 New Messages Available

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x04
Datatype	BOOL
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.5 10F3:05 Flags

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x05
Datatype	UINT16
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Rw
PDO Mapping	
Revision	All

5.6.6 10F3:06 Diagnosis Message 001

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x06
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.7 10F3:07 Diagnosis Message 002

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x07
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.8 10F3:08 Diagnosis Message 003

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x08
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.9 10F3:09 Diagnosis Message 004

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x09
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.10 10F3:0A Diagnosis Message 005

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x0A
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.11 10F3:0B Diagnosis Message 006

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x0B
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.12 10F3:0C Diagnosis Message 007

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x0C
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.13 10F3:0D Diagnosis Message 008

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x0D
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.14 10F3:0E Diagnosis Message 009

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x0E
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.15 10F3:0F Diagnosis Message 010

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x0F
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.16 10F3:10 Diagnosis Message 011

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x10
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.17 10F3:11 Diagnosis Message 012

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x11
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.18 10F3:12 Diagnosis Message 013

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x12
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.19 10F3:13 Diagnosis Message 014

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x13
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.20 10F3:14 Diagnosis Message 015

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x14
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.6.21 10F3:15 Diagnosis Message 016

see ETG.1020 Protocol Enhancements

Description	Value
Index	0x10F3 (Device)
Subindex	0x15
Datatype	OCTET_STRING
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.7 10F8 Timestamp Object

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x10F8 (Device)
Subindex	0x00
Datatype	UINT64
Min. Value	
Default	
Max. Value	
Unit	unknown Unit
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.8 1C00:x Sync manager type

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1C00 (Device)
Subindex	0x00
Datatype	UINT8
Min. Value	
Default	2 (0x02)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.8.1 1C00:01 SubIndex 001

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1C00 (Device)
Subindex	0x01
Datatype	UINT8
Min. Value	
Default	1 (0x01)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.8.2 1C00:02 SubIndex 002

see ETG.1000.6 EtherCAT specification - CoE

Description	Value
Index	0x1C00 (Device)
Subindex	0x02
Datatype	UINT8
Min. Value	
Default	2 (0x02)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.9 F000:x Modular Device Profile

see ETG.5001.1 MDP GeneralSpec

Description	Value
Index	0xF000 (Device)
Subindex	0x00
Datatype	UINT8
Min. Value	
Default	2 (0x02)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.9.1 F000:01 Index distance

see ETG.5001.1 MDP GeneralSpec

Description	Value
Index	0xF000 (Device)
Subindex	0x01
Datatype	UINT16
Min. Value	
Default	16 (0x0010)
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.9.2 F000:02 Maximum number of modules

see ETG.5001.1 MDP GeneralSpec

Description	Value
Index	0xF000 (Device)
Subindex	0x02
Datatype	UINT16
Min. Value	
Default	0
Max. Value	
Unit	
Access / EtherCAT-State	Ro
PDO Mapping	
Revision	All

5.10 F008 Code word

see ETG.5001.1 MDP GeneralSpec

Description	Value
Index	0xF008 (Device)
Subindex	0x00
Datatype	UINT32
Min. Value	
Default	
Max. Value	
Unit	
Access / EtherCAT-State	Rw
PDO Mapping	
Revision	All

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