



Documentation

AX5000 - Diagnostic messages

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BECKHOFF

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1 Foreword

1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards.

It is essential that the documentation and the following notes and explanations are followed when installing and commissioning the components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

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

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.

We reserve the right to revise and change the documentation at any time and without prior announcement. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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EP1590927, EP1789857, DE102004044764, DE102007017835

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1.2 Documentation issue status

Version	Comment
3.4	Message Update: (Only for "Reset: State change to SafeOP") F13E; F702; F709; F70A; F70B; F70E; F70F; F718; F719; F71A; F850; F852; F853; F858; F85C; F85D; F86D; F86F; F872; F873; F881; F883; F8A0
3.3	Message Update: F107; 109; F122; F134; F135; F136; F137; F138; F139; F13A; F13B; F13E; F14A; F151; F153; F155; F156; F157; F15F; F16B; F16C; F2A0; F330; F50B; F586; F587; F802; F811; F851; F866; FC03; FC09; FC0A; FC0B; FD0E; FD0F; FD10; FD11; FD15; FD1E
3.2	Message Update: F100; F109; F15B; F350; F351; F850
3.1	Message Update: D000; D001; D002; D003; D005, D006; D010; D011; D012; D013; D014; D015; D019; D101; D102; D180; D181; D182; D183; D184; D185; D185; D186; D187; D188; D189; D18A, D18B; D18C; D18D; D18F; D190; D191; D192; D193; D194; D195; D196; D1B0; D1B1; D1B2; D1B3; D1B4; D1B5; D1B6; D1B7; D1B8; D1B9; D1C1; D1C2; D1C3; D1C4; D1C5; D1C6; D200; D400; D401; D402; D403; D404; D500; D780; D781; D782; D783; D784; D785; D786; D787; D808; DC31; DC32; DC33; DC34; DC35; DC36; DC37; DC38; DC39; DC3A; DC3B; DC3C; DC3D; DC3E; DC3F; DCB0; DCB1; DCB2; DCB3; DCB4; DCB5; DCB6; DCB7; DCB8; DCB9; DCBA; DCBB; DD42; DD80; DD81; DD82; DD83; DFFF; CCD0; CCD1; CD40; CD41; CD42; CD43; CD46; CD47; E160; E290; E300; E581; ECD0; ECD1; ED00; ED01; ED40; ED41; ED42; ED43; ED46; ED47; ED60; F152; F2A7; F320
3.0	General Update, based on Diag.xml 2.010-20151111

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: <ul style="list-style-type: none"> • 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

 Note	<p>IDN P-0-0350 - Error reaction check word</p> <p>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.</p>
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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)

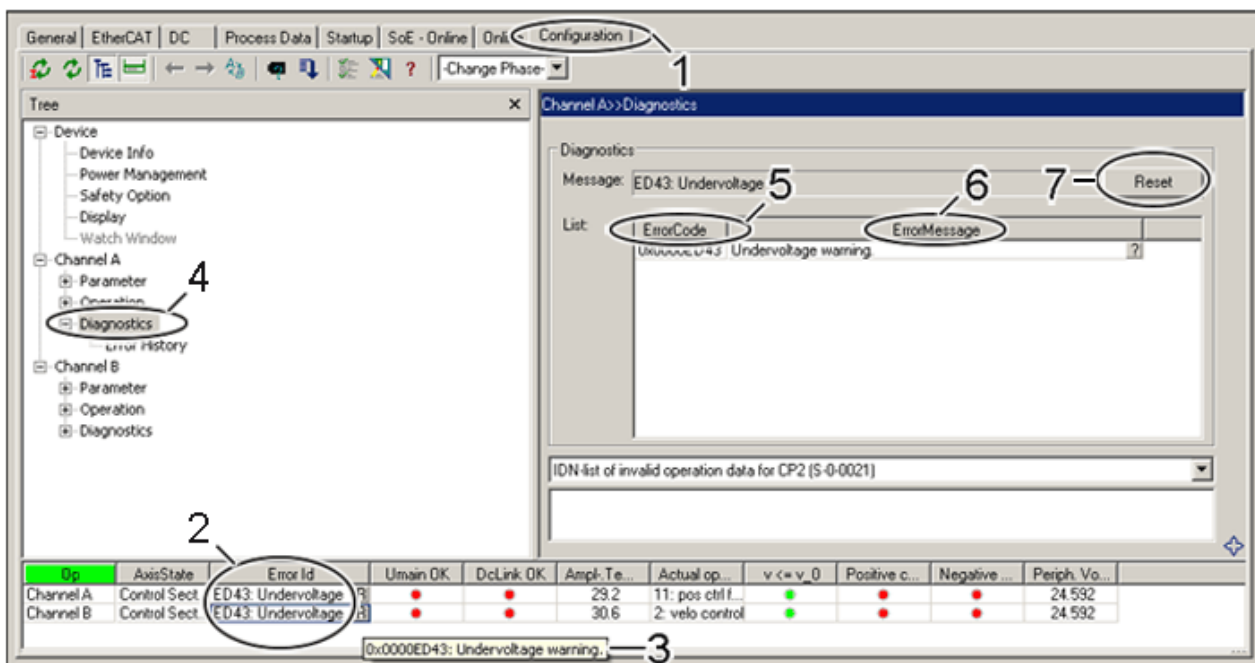
In relation to the global diagnostics, several messages are displayed in direct succession in many cases and only the first remains visible on the display. In the event of a malfunction it is important to judge the entire diagnostic environment, i.e. to see all diagnostic messages. For this purpose the 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
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> ECatSt=Op UdcLnk+00306V </div> 1	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).
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Id: 0xF415(F) Id: 0xF415(F) </div> 2	
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> IO Sync lost(F) IO Sync lost(F) </div> 3	
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Id: 0xF415(F) Id: 0xF415(F) </div> 4	
<div style="border: 1px solid black; padding: 2px;"> IO Sync lost(F) IO Sync lost(F) </div> 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.

ErrorTime	ErrorCode	ErrorMessage
837h 35m 52s	0x0000F415	ESC-DC error: IO-sync lost
837h 35m 2s	0x0000FD04	Control voltage error: undervoltage
837h 35m 2s	0x0000FD11	Periphery voltage missing
836h 5m 49s	0x0000F415	ESC-DC error: IO-sync lost
835h 46m 28s	0x0000F415	ESC-DC error: IO-sync lost
835h 33m 54s	0x0000F415	ESC-DC error: IO-sync lost
835h 28m 54s	0x0000F415	ESC-DC error: IO-sync lost
835h 21m 10s	0x0000FC03	Control voltage error: undervoltage
835h 21m 9s	0x0000FD11	Periphery voltage too low
833h 29m 21s	0x0000FC03	Control voltage error: undervoltage
833h 29m 21s	0x0000FD11	Periphery voltage too low
826h 51m 34s	0x0000F415	ESC-DC error: IO-sync lost
826h 44m 17s	0x0000FC03	Control voltage error: undervoltage
826h 44m 17s	0x0000FD11	Periphery voltage too low
826h 13m 27s	0x0000F415	ESC-DC error: IO-sync lost
825h 13m 27s	0x0000F415	ESC-DC error: IO-sync lost
825h 44m 59s	0x0000F415	ESC-DC error: IO-sync lost
825h 41m 7s	0x0000F415	ESC-DC error: IO-sync lost

Diagnostics Info

Source: Device Code: 0x00415

Message: ESC-DC error: IO-sync lost

Class: Class 1: Error

Reaction: Closed trip ramp

Type: Runtime error

Reset: Execute Reset Command (P-0-0300)

Description: ESC-DC error: IO-sync lost

Cause:

Remedy:

OK

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

D000, Esc state: Init

Esc state: Init

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

Class	Type
Info	Info

D001, Esc state: PreOp

Esc state: PreOp

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

Class	Type
Info	Info

D002, Esc state: Boot

Esc state: Boot

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

Class	Type
Info	Info

D003, Esc state: SafeOp

Esc state: SafeOp

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

Class	Type
Info	Info

D005, Esc state: Op

Esc state: Op

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

Class	Type
Info	Info

D006, Esc state: invalid

Esc state: invalid

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

Class	Type
Info	Info

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	Info

D011, Axis state machine: Control section ready

Axis state machine: Control section ready

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

Class	Type
Info	Info

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	Info

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	Info

D014, Axis state machine: Axis halt

Axis state machine: Axis halt

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

Class	Type
Info	Info

D015, Axis state machine: Axis error

Axis state machine: Axis error

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

Class	Type
Info	Info

D019, Axis state machine: Invalid state

Axis state machine: Invalid state

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

Class	Type
Info	Info

D101, Hardware enable not active.

Hardware enable not active.

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

Class	Type
Info	Info

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	Info

Standard Reaction	Reset
No	Information: No reset required.

Possible Causes	Solutions
1. The AX5000 is in the safe state (emergency stop circuit still active, cabling fault etc.) and should be enabled.	1. Place the system in readiness for operation again.



Note

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.

D180, SCI communication Control - Front pcb: Frame error

SCI communication Control - Front pcb: Frame error

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

Class	Type
Info	Info

D181, SCI communication Control - Front pcb: Parity error

SCI communication Control - Front pcb: Parity error

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

Class	Type
Info	Info

D182, SCI communication Control - Front pcb: RX-Data missing

SCI communication Control - Front pcb: RX-Data missing

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

Class	Type
Info	Info

D183, SCI communication Control - Front pcb: SCI error

SCI communication Control - Front pcb: SCI error

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

Class	Type
Info	Info

D184, SCI communication Control - Front pcb: Timeout error

SCI communication Control - Front pcb: Timeout error

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

Class	Type
Info	Info

D185, SCI communication Control - Front pcb: Checksum error

SCI communication Control - Front pcb: Checksum error

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

Class	Type
Info	Info

D186, SCI communication Control - Front pcb: Byte count error

SCI communication Control - Front pcb: Byte count error

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

Class	Type
Info	Info

D187, SCI communication Control - Front pcb: Command denied

SCI communication Control - Front pcb: Command denied

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

Class	Type
Info	Info

D188, SCI communication Control - Front pcb: Wrong command

SCI communication Control - Front pcb: Wrong command

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

Class	Type
Info	Info

D189, SCI communication Control - Front pcb: Command error

SCI communication Control - Front pcb: Command error

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

Class	Type
Info	Info

D18A, SCI communication Control - Front pcb: Timeout error

SCI communication Control - Front pcb: Timeout error

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

Class	Type
Info	Info

D18B, SCI communication Control - Front pcb: RX data error

SCI communication Control - Front pcb: RX data error

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

Class	Type
Info	Info

D18C, SCI communication Control - Front pcb: Wrong channel

SCI communication Control - Front pcb: Wrong channel

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

Class	Type
Info	Info

D18D, SCI communication Control - Front pcb: Fifo overflow

SCI communication Control - Front pcb: Fifo overflow

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

Class	Type
Info	Info

D18E, SCI communication Front - Control pcb: Frame error

SCI communication Front - Control pcb: Frame error

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

Class	Type
Info	Info

D18F, SCI communication Front - Control pcb: Parity error

SCI communication Front - Control pcb: Parity error

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

Class	Type
Info	Info

D190, SCI communication Front - Control pcb: Wrong checksum

SCI communication Front - Control pcb: Wrong checksum

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

Class	Type
Info	Info

D191, SCI communication Front - Control pcb: Timeout error

SCI communication Front - Control pcb: Timeout error

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

Class	Type
Info	Info

D192, SCI communication Front - Control pcb: Response timeout error

SCI communication Front - Control pcb: Response timeout error

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

Class	Type
Info	Info

D193, SCI communication Front - Control pcb: Fifo overflow

SCI communication Front - Control pcb: Fifo overflow

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

Class	Type
Info	Info

D194, SCI communication Control - Front pcb: SCI reset called

SCI communication Control - Front pcb: SCI reset called

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

Class	Type
Info	Info

D195, SCI communication Control - Front pcb: Byte count error

SCI communication Control - Front pcb: Byte count error

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

Class	Type
Info	Info

D196, SCI communication Control - Front pcb: Buffer overflow

SCI communication Control - Front pcb: Buffer overflow

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

Class	Type
Info	Info

D1B0, SCI communication Control - Option card: Frame error

SCI communication Control - Front pcb: Frame error

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

Class	Type
Info	Info

D1B1, SCI communication Control - Option card: Parity error

SCI communication Control - Front pcb: Parity error

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

Class	Type
Info	Info

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

SCI communication Control - Front pcb: RX-Data missing

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

Class	Type
Info	Info

D1B3, SCI communication Control - Option card: SCI error

SCI communication Control - Front pcb: SCI error

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

Class	Type
Info	Info

D1B4, SCI communication Control - Option card: Timeout error

SCI communication Control - Front pcb: Timeout error

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

Class	Type
Info	Info

D1B5, SCI communication Control - Option card: Checksum error

SCI communication Control - Front pcb: Checksum error

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

Class	Type
Info	Info

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

SCI communication Control - Front pcb: Byte count error

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

Class	Type
Info	Info

D1B7, SCI communication Control - Option card: Command denied

SCI communication Control - Front pcb: Command denied

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

Class	Type
Info	Info

D1B8, SCI communication Control - Option card: Wrong command

SCI communication Control - Front pcb: Wrong command

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

Class	Type
Info	Info

D1B9, SCI communication Control - Option card: Command error

SCI communication Control - Front pcb: Command error

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

Class	Type
Info	Info

D1BA, SCI communication Control - Option card: Timeout error

SCI communication Control - Front pcb: Timeout error

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

Class	Type
Info	Info

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

SCI communication Control - Front pcb: RX data error

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

Class	Type
Info	Info

D1BC, SCI communication Control - Option card: Wrong channel

SCI communication Control - Front pcb: Wrong channel

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

Class	Type
Info	Info

D1BD, SCI communication Control - Option card: Fifo overflow

SCI communication Control - Front pcb: Fifo overflow

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

Class	Type
Info	Info

D1BE, SCI communication Front - Control pcb: Frame error

SCI communication Front - Control pcb: Frame error

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

Class	Type
Info	Info

D1BF, SCI communication Front - Control pcb: Parity error

SCI communication Front - Control pcb: Parity error

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

Class	Type
Info	Info

D1C0, SCI communication Front - Control pcb: Wrong checksum

SCI communication Front - Control pcb: Wrong checksum

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

Class	Type
Info	Info

D1C1, SCI communication Front - Control pcb: Timeout error

SCI communication Front - Control pcb: Timeout error

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

Class	Type
Info	Info

D1C2, SCI communication Front - Control pcb: Response timeout error

SCI communication Front - Control pcb: Response timeout error

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

Class	Type
Info	Info

D1C3, SCI communication Front - Control pcb: Fifo overflow

SCI communication Front - Control pcb: Fifo overflow

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

Class	Type
Info	Info

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

SCI communication Control - Front pcb: SCI reset called

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

Class	Type
Info	Info

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

SCI communication Control - Front pcb: Byte count error

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

Class	Type
Info	Info

D1C6, SCI communication Control - Option card: Buffer overflow

SCI communication Control - Front pcb: Buffer overflow

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

Class	Type
Info	Info

D200, Firmware update successful!

Firmware update successful! Summary code: 0x0001: Bootloader update, 0x0002: ESC Eeprom update, 0x0004 Identity object update, 0x0008: Main DSP update, 0x0010: Feedback DSP update

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

Class	Type
Info	Info

D400, ESC: PLL timeout

ESC: PLL timeout

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

Class	Type
Info	Info

D401, ESC: Io-Sync timeout

ESC: Io-Sync timeout

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

Class	Type
Info	Info

D402, Info procedure command: state change

Info procedure command: state change

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

Class	Type
Info	Info

D403, Esc state machine: State change active

Esc state machine: State change active

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

Class	Type
Info	Info

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	Info

D500, External ADC: Uref invalid

External ADC: Uref invalid

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

Class	Type
Info	Info

D780, Feedback Parameter Channel Endat: Crc Error

Feedback Parameter Channel Endat: Crc Error

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

Class	Type
Info	Info

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	Info

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	Info

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	Info

D784, Feedback Parameter Channel Endat: Wrong response

Feedback Parameter Channel Endat: Wrong response

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

Class	Type
Info	Info

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	Info

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	Info

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	Info

DC30, I2C communication: Save error ID 1

I2C communication: Save error ID 1

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

Class	Type
Info	Info

DC31, I2C communication: Save error ID 2

I2C communication: Save error ID 2

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

Class	Type
Info	Info

DC32, I2C communication: Save parameter

I2C communication: Save parameter

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

Class	Type
Info	Info

DC33, I2C communication: Save operation time 1

I2C communication: Save operation time 1

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

Class	Type
Info	Info

DC34, I2C communication: Save operation time 2

I2C communication: Save operation time 2

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

Class	Type
Info	Info

DC35, I2C communication: Read, Wrong byte count

I2C communication: Read, Wrong byte count

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

Class	Type
Info	Info

DC36, I2C communication: Read, No response

I2C communication: Read, No response

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

Class	Type
Info	Info

DC37, I2C communication: Read, No acknowledge

I2C communication: Read, No acknowledge

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

Class	Type
Info	Info

DC38, I2C communication: Write, Wrong byte count

I2C communication: Write, Wrong byte count

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

Class	Type
Info	Info

DC39, I2C communication: Write, No response

I2C communication: Write, No response

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

Class	Type
Info	Info

DC3A, I2C communication: Different operation time

I2C communication: Different operation time

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

Class	Type
Info	Info

DC3B, I2C communication: Job buffer full

I2C communication: Job buffer full

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

Class	Type
Info	Info

DC3C, I2C communication: No safety hardware

I2C communication: No safety hardware

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

Class	Type
Info	Info

DC3D, I2C communication: No option hardware

I2C communication: No option hardware

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

Class	Type
Info	Info

DC3E, I2C communication: Device operation time overflow

I2C communication: Device operation time overflow

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

Class	Type
Info	Info

DC3F, I2C communication: Channel operation time overflow

I2C communication: Channel operation time overflow

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

Class	Type
Info	Info

DCB0, Lcd: Wrong Esc state

Lcd: Wrong Esc state

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

Class	Type
Info	Info

DCB1, Lcd: Wrong axis state

Lcd: Wrong axis state

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

Class	Type
Info	Info

DCB2, Lcd: Unknown cyclic job

Lcd: Unknown cyclic job

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

Class	Type
Info	Info

DCB3, Lcd: Unknown job

Lcd: Unknown job

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

Class	Type
Info	Info

DCB4, Lcd: Unknown state

Lcd: Unknown state

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

Class	Type
Info	Info

DCB5, Lcd: Unknown state

Lcd: Unknown state

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

Class	Type
Info	Info

DCB6, Lcd: Unknown state

Lcd: Unknown state

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

Class	Type
Info	Info

DCB7, Lcd: Unknown state

Lcd: Unknown state

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

Class	Type
Info	Info

DCB8, Lcd: Unknown menue state

Lcd: Unknown menue state

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

Class	Type
Info	Info

DCB9, Lcd: Interface error

Lcd: Interface error

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

Class	Type
Info	Info

DCBA, Lcd: Invalid state

Lcd: Invalid state

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

Class	Type
Info	Info

DCBB, Lcd: Communication error

Lcd: Communication error

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

Class	Type
Info	Info

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	Info

DD80, Control pcb: Main loop time exceeded

Control pcb: Main loop time exceeded

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

Class	Type
Info	Info

DD81, Control pcb: End of stack reached

Control pcb: End of stack reached

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

Class	Type
Info	Info

DD82, Front pcb: Main loop time exceeded

Front pcb: Main loop time exceeded

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

Class	Type
Info	Info

DD83, Front pcb: End of stack reached

Front pcb: End of stack reached

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

Class	Type
Info	Info

DFFF, Debug firmware, replace 'As soon as possible'!

Debug firmware: Replace ASAP!

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

Class	Type
Info	Info

CCD0, Leaving positive limit switch

Warning "ECD0" has been reset.

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

Class	Type
Warning	Warning

CCD1, Leaving negative limit switch

Warning "ECD1" has been reset.

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

Class	Type
Warning	Warning

CD40, Clear warning: Overload internal brake resistor

Warning "ED40" has been reset.

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

Class	Type
Warning	Warning

CD41, Clear warning: Overload external brake resistor

Warning "ED41" has been reset.

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

Class	Type
Warning	Warning

CD42, Clear warning: Overtemperature amplifier

Warning "ED42" has been reset.

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

Class	Type
Warning	Warning

CD43, Clear warning: Undervoltage DC link

Warning "ED43" has been reset.

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

Class	Type
Warning	Warning

CD46, Clear warning: U_mains too high

Warning "ED46" has been reset.

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

Class	Type
Warning	Warning

CD47, Clear warning: U_mains too low

Warning "ED47" has been reset.

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

Class	Type
Warning	Warning

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

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
1. A problem has occurred with the AT / MDT list.	1. 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"

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

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
1.	1. 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"

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

E581, 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.)
E581	58753

Class	Type
Error	Warning

ECD0, Positive limit switch warning.

Positive limit switch warning.

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

Class	Type
Warning	Warning

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
1. The axis has been moved to the positive limit switch.	1. Please move the axis away from the positive limit switch.

ECD1, Negative limit switch warning.

Negative limit switch warning.

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

Class	Type
Warning	Warning

Standard Reaction	Reset
No	Warning: No reset required.

Possible Causes	Solutions
1. The axis has been moved to the negative limit switch.	1. Please move the axis away from the negative limit switch.

ED00, Motor overtemperature

The motor temperature has reached a critical value.

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

Class	Type
Warning	Warning



Note

Please consider this note!

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

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

ED01, Overload - motor

The motor load has reached a critical value.

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

Class	Type
Warning	Warning



Note

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".

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



Note

Please consider this note!

If you ignore this warning and the load of the internal 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".

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



Note

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".

ED42, Overtemperature - Amplifier

The servo driver temperature has reached a critical value.

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

Class	Type
Warning	Warning



Note

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".

ED43, Undervoltage - 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


 Note	<p>Please consider this note!</p> <p>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".</p>
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ED46, U_mains too high

U_mains too high

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

Class	Type
Warning	Warning


 Note	<p>Please consider this note!</p> <p>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".</p>
--	---

ED47, U_mains too low

U_mains too low

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

Class	Type
Warning	Warning

 Note	<p>Please consider this note!</p> <p>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".</p>
--	---

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

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal flash error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have renamed the firmware file.	1. Use the original name of the firmware file.
2. You have selected a wrong firmware file.	2. Use a valid firmware file.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a wrong firmware file.	1. Use a valid firmware file.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

F043, Firmware-Download: Read of the hardware ID's failed.

The bootloader tried to read the hardware ID's. The read operation failed.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. You have selected a wrong firmware file.	2. Use a valid firmware file.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal hardware error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal hardware error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal hardware error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You are working with an incompatible TwinCAT version.	1. Ask our support.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. You have selected a wrong firmware file.	2. Use a valid firmware file.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal hardware error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A internal fatal hardware error occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. A internal fatal hardware error occurred.	2. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. A internal fatal hardware error occurred.	2. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a wrong firmware file.	1. Use a valid firmware file.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. A internal fatal hardware error occurred.	2. Disconnect 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.

F067, Firmware-Download: Internal config error

The internal PCBs of the AX5000 do not match.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An internal configuration error has occurred.	1. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The version of the installed bootloader don't fulfill the requirements.	1. Install an actual bootloader version.

F06A, Firmware-Download: Ctrl pcb eeprom not accessible.

Firmware-Download: Ctrl pcb eeprom not accessible.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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F06B, Firmware-Download: Front pcb eeprom not accessible.

Firmware-Download: Front pcb eeprom not accessible.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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F06C, Firmware-Download: Driver pcb eeprom not accessible.

Firmware-Download: Driver pcb eeprom not accessible.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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F06D, Firmware-Download: Power pcb eeprom not accessible.

Firmware-Download: Power pcb eeprom not accessible.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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F06E, Firmware-Download: Safety pcb eeprom not accessible.

Firmware-Download: Safety pcb eeprom not accessible.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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F06F, Firmware-Download: Safety pcb eeprom not accessible.

Firmware-Download: Safety pcb eeprom not accessible.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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F070, Firmware-Download: Firmware index for the control pcb don't match

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file is invalid.	1. Choose an appropriate firmware file. Take the highest "Build" of the used version.

F071, Firmware-Download: Firmware index for the front pcb don't match

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file is invalid.	1. Choose an appropriate firmware file. Take the highest "Build" of the used version.

F072, Firmware-Download: Firmware index for the driver pcb don't match

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file is invalid.	1. Choose an appropriate firmware file. Take the highest "Build" of the used version.

F073, Firmware-Download: Firmware index for the power pcb don't match

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file is invalid.	1. Choose an appropriate firmware file. Take the highest "Build" of the used version.

F074, Firmware-Download: Firmware index for the Safety pcb don't match

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file is invalid.	1. Choose an appropriate firmware file. Take the highest "Build" of the used version.
2. The safety pcb is invalid.	2. Replace the safety pcb as necessary.

F075, Firmware-Download: Firmware index for the option pcb don't match

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file is invalid.	1. Choose an appropriate firmware file. Take the highest "Build" of the used version.
2. The option pcb is invalid.	2. Replace the option pcb as necessary.

F076, Firmware-Download: Firmware index for the control pcb can't be read

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F077, Firmware-Download: Firmware index for the front pcb can't be read

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F078, Firmware-Download: Firmware index for the driver pcb can't be read

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F079, Firmware-Download: Firmware index for the power pcb can't be read

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F07A, Firmware-Download: Firmware index for the safety pcb can't be read

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.
2. The safety pcb is defective.	2. Replace the safety pcb as necessary.

F07B, Firmware-Download: Firmware index for the option pcb can't be read

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.
2. The option pcb is defective.	2. Replace the option pcb as necessary.

F090, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

F091, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

F092, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

F093, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

F094, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

F095, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

F096, Firmware-Download: FPGA error option pcb

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

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The option pcb is defective.	1. Replace the option pcb as necessary.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The firmware file ist defective.	1. Exchange the defective firmware file for a valid one.
2. There is an internal hardware or software error.	2. Disconnect 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.

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
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

F0A2, FPGA error: Loading of the configuration failed.

During the configuration load sequence of the FPGA an error occurred.

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

Class	Type
Error	Bootloader error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. No write access to the serial flash memory during firmware download.	1. Disconnect 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.
2. The system data could not be written to the serial flash memory during operation.	2. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A Fatal software error.	1. Ask our support.



Note

Please consider this note!

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

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. A Fatal software error.	1. 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.



Note

Please consider this note!

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

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
1. A Fatal software error.	1. Ask our support.



Note

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"

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
1. A Fatal software error.	1. Ask our support.



Note

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"

F0BD, Serial Flash error: Initialization failed

The general initialisation 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
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem.

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
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. Fatal software error.	1. Disconnect 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.

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The serial flash don't contains the required file.	1. Install an actual firmware file.

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).

Possible Causes	Solutions
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F100, Axis state machine: Communication error

An EtherCAT communication error occurred during active axis control.

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 and must be replaced Check the EtherCAT cabling Check the shielding connection (EMC problem) Synchronisation problems (distributed clocks)

F101, Axis state machine: Initialize error

An attempt was made to activate an uninitialised 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
1. An attempt was made to select an uninitialised operating mode with the control word S-0-0134.	1. Initialise the desired operating mode.

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

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
1. Problems with the digital inputs (Connector "X06").	1. Check the digital inputs (Connector "X06").

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

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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"

F104, Axis state machine: NC errorhandling - Timeout

With NC error handling activated (P-0-0350), the AX5000 was not stopped by the NC within the parameterised 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
1. The selected time period is too short.	1. Increase the time period if your application allows this.
2. The movement is too complex for the parameterised time period.	2. Program a movement that is suitable for the time period.

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

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 parameterised 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
1. The parameterised time period is too short.	1. Increase the time period, if the application allows this.
2. There is an internal software error.	2. Disconnect 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.
3. An unrecognised commutation error has occurred.	3. Disconnect 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"

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
1. No motor is configured.	1. Configure a motor.

Further Information
AX5000_IDN-Description: "P-0-0053"

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 and change the value of the parameter "P-0-0150 -->parameter channel -->commutation mode"
You are using a synchronous motor without feedback system.	Use an operating mode for which no feedback system is required.
You are using a third-party motor without commutation angle.	Assign a commutation angle and change the value of the parameter "P-0-0150 -->parameter channel -->commutation mode"
The commutation encoder system is not parameterized or is in error state.	Change the parameterization or analyses the error.

Further Information
AX5000_UserManual-->Commissioning-->Commutation methods AX5000_IDN Description-->P-0-0150

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
1. The feedback position is invalid.	1. Check the feedback system.

F109, Axis state machine: Position control not ready

The position controller is not ready to enable when selecting the operating mode "Position 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 used as actual value in the position control loop is not valid. E.g. the feedback system is in an error state or no feedback system is configured.	Check if the feedback system is parametrized, if it isn't in an error state and check the feedback system selection in the selected operation mode.

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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

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
1. You have started the internal calibration mode.	1. Disable the internal calibration mode.

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
1. One or more control loops are in use by a thechnology or by a internal function.	1. Don't try to enable the axis while one of this functions is active.

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. The hardware enable of the corresponding terminal point on plug "X06" is missing.	1. Apply the hardware enable (IDN P-0-0400).

F122, Command "Motor and feedback connection check"

The command "Motor and feedback connection check" (P-0-0166) can't be executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F122	61730

Class	Type
Error	Command error

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

Possible Causes	Solutions
The current controller is not ready for operation, since the commutation position is invalid.	AX5000 system manual-->Advanced system characteristics-->Commutation methods
You have executed the command without a configured motor.	Configure a motor.
This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	Analyse the other diagnostic messages and in this way identify the causal problem.

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

F126, Reset-Command: Initialization failed

The Reset command failed, because the initialization failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F126	61734

Class	Type
Error	Command error

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. This diagnostic message is just a hint that one of the present errors cannot be reset.	1. Rectify the present error.

F129, Reset-Command: Reset is not executable

Reset command not executable, the axis hasn't been stoped yet.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F129	61737

Class	Type
Error	Command error

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

Possible Causes	Solutions
1. The axis is still in motion.	1. Wait for the axis to come to a standstill and then repeat the command.

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
1. 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.	1. This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

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
1. 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.	1. This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

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
1. 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.	1. This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

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
1. 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.	1. This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

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
1. 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.	1. This diagnostic message requires no remedial action.

Further Information
AX5000_IDN-Description: "P-0-0310"

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
1. The command is executed, but the safety card has been activated by a malfunction in the safety zone of the machine/plant.	1. Rectify the malfunction in the safety zone of the machine/plant and perform a reset.
2. The command is executed, but the safety card has been activated by a cable breakage in the 24 V supply to the card.	2. Rectify the cable breakage and perform a reset.

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

F131, Command "Reset": Feedback initialization failed

The feedback system could not be initialised during the execution of the "Reset" command.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F131	61745

Class	Type
Error	Command error

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

Possible Causes	Solutions
1. There is an internal software error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. There is an internal hardware error.	1. Disconnect 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.

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

Possible Causes	Solutions
1. The controller is still demanding a controller enable, even though the C1D-bit is present.	1. Check the SoE axis state machine on the master side.

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
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.	Analyse the other diagnostic messages and in this way identify the causal problem.

F135, Parameterset-Switching: Reactivation of the parameterset 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An error occurred during parameter set switchover, so that an attempt was made to switch back to the standard data set 0, which also failed.	Analyse the other diagnostic messages and in this way identify the causal problem.

F136, Parameterset-Switching: Switching to parameterset 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The parameters in data set x are not consistent, or the axis cannot be operated with these parameters.	Analyse the other diagnostic messages and in this way identify the causal problem.

F137, Parameterset-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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Parameter set switchover is not available in "compatibility mode" (revision patch was applied).	Load the latest firmware and change the revision in the System Manager.

F138, Parameterset-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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Axis is in operation.	Deactivate the axis (e.g. cancel the axis enable of the NC).

F139, Parameterset-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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
Another axis command is executed simultaneously (e.g. P-0-0160).	Do not start another command simultaneously.

F13A, Parameterset-Switching: Switching to parameterset 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
It should be switched to data set x, but data set x was not prearranged.	Prearrange the data set "x" (see AX5000 function description HW2-->parameterset switch over)

F13B, Option card and OCT interface: Reset failed.

This diagnostic message can apply to following option cards: AX570x, AX572x, AX573x and OCT-Interface.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F13B	61755

Class	Type
Error	Command error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. The drive detected a fatal hard- or software error.

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 support who is responsible for you.

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F13E, error reaction "Feedback error" forced

The error reaction "Feedback error" has been triggered and executed 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	State change to SafeOp. 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"

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
1. The memory space is insufficient.	1. If possible try to reduce the I/O cycle time.

F140, Build drive system: Failed

The system initialisation 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
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

F141, Build drive system: Timeout

The system initialisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback system has been incorrectly parameterised.	1. Check the parameterisation of the feedback system (P-0-0150 or P-0-0180).
2. There is an internal hardware or software error.	2. Disconnect 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"

F146, Build drive system: Failed

The system initialisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

F147, Build drive system: Memory error Front card

The system initialisation 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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F148, Build drive system: Unknown feedback system

The system initialisation 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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have selected a feedback system that is not supported.	1. Check the parameterisation 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"

F149, Build drive system: Front card - Internal error

The system initialisation 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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F14A, Build drive system: Front card – software error

The system initialisation of the front card has failed due to an software error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F14A	61770

Class	Type
Error	Software error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a 2 nd feedback system that is not supported.	Check the parameterisation of the feedback system. Please check P-0-0180.

F14B, Build drive system: Memory error Control card

The system initialisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

F14C, Build drive system: Memory error Front card

The system initialisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal software error.	1. Disconnect 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.

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
1. There is an internal software error.	1. Disconnect 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.

F150, Initialization of the feedback: Internal error

The feedback initialisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

F151, Initialization of the feedback: Timeout

The feedback initialisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

F152, Initialisation of the feedback: Command failed

The feedback initialisation has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F152	61778

Class	Type
Error	Runtime error

Standard Reaction	Reset
Axis is inoperable	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem If this error occurs only at two channel devices, a feedback problem of the other channel is the reason.

F153, Initialization of the feedback: No option card found

An attempt was made during the feedback initialisation 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
AX57xx option card is not inserted or is defective.	Insert or exchange the card.
You have selected the AX57xx option card by mistake during the parameterisation of the feedback system IDN "P-0-0150" or "P-0-0180".	Change the parameterisation of the feedback system.

F154, Build drive system: Memory error option card

The system initialisation 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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

F155, Build drive system: Option card - Unknown feedback system

The system initialisation of the option card has failed due to an unknown feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F155	61781

Class	Type
Error	Parameter error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a 2 nd feedback system that is not supported.	Check the parameterisation of the feedback system. Please check IDN"P-0-0180".

F156, Build drive system: Option card - Internal error

The system initialisation 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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
An internal software error has occurred on the option card.	Carry out a software update for the 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.

F157, Build drive system: Option card - Unknown feedback system

The system initialisation of the option card has failed due to an unknown feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F157	61783

Class	Type
Error	Parameter error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
You have selected a 2 nd feedback system that is not supported.	1. Check the parameterisation of the feedback system. Please check IDN P-0-0180.

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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an internal hardware or software error.	1. Disconnect 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.

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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. 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).	1. 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.

F15B, Feedback error: No OCT support.

This AX5000 does not support the OCT feedback system.

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 or choose another feedback system.
AX5160 – AX5193 does not support OCT	Choose another feedback system.

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).

Possible Causes	Solutions
Internal 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 support who is responsible for you.

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
1. A problem has occurred with the AT / MDT list.	1. Analyse the application and remove one or more unnecessary IDNs from "S-0-0016" / "S-0-0024".
2. There is an internal hardware or software error.	2. Disconnect 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.

F161, Process data mapping: AT - S-0-0016

The process data mapping has failed due to incorrect parameterisation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F161	61793

Class	Type
Error	Software exception

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

Possible Causes	Solutions
1. An IDN has been entered in the IDN "S-0-0016" that does not exist in the firmware you are using.	1. Remove this IDN from "S-0-0016".

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

F162, Process data mapping: AT - S-0-0016

The process data mapping has failed due to incorrect parameterisation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F162	61794

Class	Type
Error	Software exception

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

Possible Causes	Solutions
1. An IDN has been entered in the IDN "S-0-0016" that cannot be transmitted cyclically with the amplifier telegram.	1. Remove this IDN from "S-0-0016".

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

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	Software exception

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

Possible Causes	Solutions
1. The memory space provided for the IDN "S-0-0016" is insufficient.	1. Analyse 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"

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
1. A problem has occurred with the AT list.	1. Analyse the application and remove one or more unnecessary IDNs from "S-0-0016".
2. There is an internal hardware or software error.	2. Disconnect 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.

F165, Process data mapping: AT - Anzahl der IDN's

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	Software exception

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

Possible Causes	Solutions
1. The maximum number of IDNs listed in the IDN "S-0-0016" supported by the firmware has been exceeded.	1. Analyse 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"

F166, Process data mapping: MDT - S-0-0024

The process data mapping has failed due to incorrect parameterisation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F166	61798

Class	Type
Error	Software exception

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

Possible Causes	Solutions
1. An IDN has been entered in the IDN "S-0-0024" that does not exist in the firmware you are using.	1. Remove this IDN from "S-0-0024".

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

F167, Process data mapping: MDT - S-0-0024

The process data mapping has failed due to incorrect parameterisation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F167	61799

Class	Type
Error	Software exception

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

Possible Causes	Solutions
1. An IDN has been entered in the IDN "S-0-0024" that cannot be transmitted cyclically with the master data telegram.	1. Remove this IDN from "S-0-0024".

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

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	Software exception

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

Possible Causes	Solutions
1. The memory space provided for the IDN "S-0-0024" is insufficient.	1. Analyse 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"

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
1. A problem has occurred with the MDT list.	1. Analyse the application and remove one or more unnecessary IDNs from "S-0-0024".
2. There is an internal hardware or software error.	2. Disconnect 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"

F16A, Process data mapping: MDT - Too many IDN's

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	Software exception

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

Possible Causes	Solutions
1. The maximum number of IDNs listed in the IDN "S-0-0016" supported by the firmware has been exceeded.	1. Analyse 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"

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

Possible Causes	Solutions
Double listed entry in AT-List (Process data).	Delete the 2 nd entry.

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

Possible Causes	Solutions
Double listed entry in MDT-List (Process data).	Delete the 2 nd entry.

F180, Internal communication: SCI - Control card to front card

Initialisation of the SCIs was unsuccessful.]

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F180	61824

Class	Type
Error	Hardware error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F183, Feedback (general): Commutation feedback is not feedback 1

The commutation feedback was not parameterised as Feedback 1.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F183	61827

Class	Type
Error	Parameter error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The commutation feedback has not been selected under 'Feedback use' in IDN "P-0-0150" for Feedback 1.	1. Feedback 1 should be parameterised as commutation feedback.

Further Information
AX5000_IDN-Description: "P-0-0150"

F184, Feedback "general": Commutation feedback is not feedback 2

The external feedback was not parameterised as Feedback 2.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F184	61828

Class	Type
Error	Parameter error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The external feedback has not been selected under 'Feedback use' in IDN "P-0-0180" for Feedback 2.	1. Feedback 2 should be parameterised as external feedback.

Further Information
AX5000_IDN-Description: "P-0-0180"

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F1B0, Communication Control - Option pcb: Init failed.

Communication Control - Option pcb: Init 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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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
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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).

Possible Causes	Solutions
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F290, Cycle time out: High prioritise processes

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
1. There is an internal software error.	1. 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"

F291, Time out: Low prioritise processes

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
1. There is an internal software error.	1. 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"

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	Parameter error

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
The feedback and/or motor cable is broken, or the shield connection is insufficient.	Check the cables and the shield connection. Replace the cables if necessary.
The feedback system is maladjusted, or the commutation offset is parameterized incorrectly.	Re-adjust the feedback system and check the parameterization of the mechanical commutation offset (IDN P-0-0150) and the electrical commutation offset (IDN P-0-0057).
The error message was generated due to a borderline configuration, resulting in the current or voltage limit being reached. This is not directly related to the commutation	A possible solution is described in detail in "AX5000 System manual HW2 - Chapter "Ccommutation methods-->Commutation error "F2A0".

F2A1, Overcurrent error motor, measuring limit reached (X13 / X23).

The drive software detected an overcurrent 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
1. This error depends on the total system configured:	1. The solution depends on the total system configured:
2. Asynchronous motor without feedback.	2. 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).
3. Synchronous motor, current-controlled with incremental feedback.	3. Check the following IDNs: P-0-0165; S-0-0106; S-0-0107; S-0-0119; S-0-0120.
4. Asynchronous motor with feedback.	4. Check the parameterisation of the current controller and the IDNs P-0-0107 und S-0-0106.
5. Synchronous motor, current-controlled with absolute position information per pole pair.	5. Check the parameterisation of the current controller.
6. Synchronous motor, current-controlled without feedback	6. Check the parameterisation 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"

F2A2, Processing unit periphery: Initialisation failed

Processing unit periphery: Initialisation failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F2A2	62114

Class	Type
Error	Software exception

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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

Possible Causes	Solutions
1. The current controller is in use and can't be used twice.	1. Disable the axis and start the command again.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

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
1. The control deviation has exceeded the value of IDN P-x-0518.	1. Analyse your application and increase the value in the IDN P-x-0518, if appropriate.
2. The set value dynamic characteristics are set too "hard".	2. Analyse your application and check whether it is theoretically possible to achieve the specified dynamics.
3. An error has occurred in the set value generation.	3. Analyse the cause (NC, internal set value generation, etc.). If no solution can be found, contact support.
4. The control parameter are unfavorable.	4. Optimize the control parameter.
5. The mechanical system is too sluggish.	5. Analyse your application and try make the mechanical system smoother.
6. Problems with actual value monitoring.	6. Analyse the position.
7. The current limit has been reached.	7. Analyse the motor parameterisation or your calculation and check wether the motor can theoretically follow the set values.

Further Information
AX5000_IDN-Description: ""P-x-0518"

F320, Discontinuity in the position command value

The drive detected a discontinuity in the position command value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F320	62240

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
The modulo scaling in the NC is wrong.	Please choose at the NC-axis the encoder and click under the menu point "Sercos" the "calculate" tab. If the value changes, download him.

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
1. The following error has exceeded the maximum value of IDN S-0-0159.	1. Analyse your application and increase the maximum value in the IDN S-0-0159, if appropriate.
2. The set value dynamic characteristics are set too "hard".	2. Analyse your application and check whether it is theoretically possible to achieve the specified dynamics.
3. An error has occurred in the set value generation.	3. Analyse the cause (NC, internal set value generation, etc.). If no solution can be found, contact support.
4. 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.	4. Analyse the motor parameterisation or your calculation and check whether the motor can theoretically follow the set values.
5. The mechanical system is too sluggish.	5. Analyse your application and try make the mechanical system smoother.
6. The speed limit has been reached. For more informations look at the parameter S-0-0091, S-0-0113 and the motor characteristics.	6. Analyse the motor parameterisation 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".

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
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have entered invalid cycle times in the IDNs S-0-0001 and/or S-0-0002.	1. Enter permissible cycle times and try again.

Further Information
AX5000_IDN-Description: "S-0-0001" and "S-0-0002"

F324, Excessive position command value deviation.

Excessive position command value deviation.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F324	62244

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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F325, Following distance calculation limit exceeded.

Following distance calculation limit exceeded.

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).

Possible Causes	Solutions
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F326, Additional position deviation monitoring

The position deviation is outside the range of stable operation

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F326	62246

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
The EtherCAT cycle time is set to <250 μ s or >4 ms, and cubic interpolation is selected in the position controller.	In the position controller select interpolation type "linear" (P-0-0556).
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 support who is responsible for you.



Note

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.

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
1. An firmware error has occurred.	1. Disconnect 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.

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
1. An firmware error has occurred.	1. Disconnect 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.

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
1. An firmware error has occurred.	1. Disconnect 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.

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
1. The saved position offset is invalid because the serial number of the encoder has changed. E.g. a different motor has been connect.	1. Calibrate the axis and save the new position offset.

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.

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
1. The position offset can't be activated because the modulo calculation is enabled.	1. Activate the position offset before enabling the modulo calculation.
2. The position offset can't be activated because the modulo calculation is enabled.	2. Update the AX5000 firmware to a version 2.06 or higher.

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
1. A position offset should used in the position control loop, but no valid position offset has been found.	1. Calibrate the axis and save the new position offset.

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
1. The position offset can't be activated because the modulo calculation is enabled and the modulo value is less than the position offset change.	1. Use only position offset changes less than the modulo value.

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

Possible Causes	Solutions
An error occurred while the stored modulo values should be loaded.	Disable and reenale the modulo calculation.



Note

Please consider this note!

For further information see [AX5000-function_description / modulo](#)

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
Closed loop ramp	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 reenable the modulo calculation.



Note

Please consider this note!

For further information see [AX5000-function_description / modulo](#)

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

Possible Causes	Solutions
1. An error occurred while the stored modulo values should be loaded. No data found.	1. Disable and reenable the modulo calculation.

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

Possible Causes	Solutions
1. An error occurred while the modulo values should be stored.	1. Disable and reenable the modulo calculation.
2. An error occurred while the modulo values should be stored.	2. Contact support.

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

Possible Causes	Solutions
1. An error occurred while the modulo values should be stored.	1. Disable and reenable the modulo calculation.
2. An error occurred while the modulo values should be stored.	2. Contact support.

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

Possible Causes	Solutions
1. The modulo calculation with data storage can only be used if a multiturn feedback is connected.	1. Connect and use a multiturnfeedback as feedback 1.

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

Possible Causes	Solutions
1. The modulo calculation with data storage can only be used if a multiturn feedback is connected.	1. Connect and use a multiturnfeedback as feedback 2.

F357, Modulo Calculation: Init failed because the feedback position is invalid.

Modulo Calculation: Init failed because the feedback position is invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F357	62295

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
1. The initialization of the modulo calculation failed because the feedback position isn't valid.	1. Check if feedback errors are present.

F360, Initialisation of the device: failed

The initialisation 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
1. The digital output was used more than once.	1. Check the digital output assignment.

F361, Initialisation of the device: failed

The initialisation of the AX5000 has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F361	62305

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
1. Internal error.	1. Contact support.

F362, Initialisation of the device: Failed - Firmware checksum

The initialisation 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

F363, Initialisation of the device: Failed - Firmware checksum

The initialisation 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. You have selected a defective firmware file.	1. Exchange the defective firmware file for a valid one.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

F3A0, Device initialisation: Invalid state

A non-existing initialisation 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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A1, Device initialisation: 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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A3, Start of the device front unit failed

The processor at the device front unit cannot be addressed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A3	62371

Class	Type
Error	Software exception

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. The drive detected a fatal hard- or software error.

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.

F3A4, Device initialisation: 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A5, Device initialisation: 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A6, Device initialisation: 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	Software exception

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A7, Device initialisation: 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	Software exception

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A8, Device initialisation: 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	Software exception

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F3A9, Explicit Device Identification: Read of the data failed.

Explicit Device Identification: Read of the data failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3A9	62377

Class	Type
Error	Software exception

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

Possible Causes	Solutions
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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	Software exception

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

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The IDN "P-0-0350" has been incorrectly parameterised.	1. Check the IDN "P-0-0350".

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

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. This command may only be issued by Beckhoff Service personnel and requires a master password.	1. Ask our support.



Note

Please consider this note!

The entered command deletes the complete error history.

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
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This command may only be issued by Beckhoff Service personnel and requires a master password.	1. Ask our support.



Note

Please consider this note!

The entered command deletes the complete error history.

F3C4, Error management: Init failed

Error management: Init failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F3C4	62404

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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	Runtime error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F402, EtherCAT slave controller: 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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

Possible Causes	Solutions
1. A data type in the process image was changed.	1. Check the data types in the process image.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

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

Possible Causes	Solutions
1. A data type in the process image was changed.	1. Check the data types in the process image.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

F409, Distributed clocks: Sync0 - Cycle time

The cycle time of Sync0 is parameterised to an invalid value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F409	62473

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. The cycle time of Sync0 may only be configured at 62.5 μ s, 125 μ s or 250 μ s.	1. Check the cycle time of Sync0.



Note

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-Synchronisation"

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

Possible Causes	Solutions
1. Sync0 is not activated	1. Activate Sync0.



Note

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-Synchronisation"

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

Possible Causes	Solutions
1. The parameterisation of the Sync0 pulse length is invalid.	1. Please check the parameterisation of the Sync0 pulse length.



Note

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-Synchronisation"

F412, Distributed clocks: Sync1 - Cycle time

The cycle time of Sync1 is parameterised to an invalid value.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F412	62482

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. The cycle time of Sync1 must be a multiple of the Sync0 cycle time.	1. Check the cycle time of Sync1.



Note

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-Synchronisation"

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

Possible Causes	Solutions
1. Sync1 is not activated	1. Activate Sync1.



Note

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-Synchronisation"

F414, Distributed clocks: hardware sync

The hardware synchronisation 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
1. There is an internal hardware or software error.	1. Disconnect 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.

F415, Distributed clocks: Process data synchronization lost


The process data synchronisation 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
1. The PC is sending invalid signals (jitter). Numerous causes are hardware problems and device drivers which mask the interrupts.	1. Check the PC.
2. The prioritisation of the individual tasks is unfavourable.	2. Please check the task prioritisation.
3. CRC-Error on the EtherCAT bus	3. Disconnect 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. I/O update takes place at the end of the task.	4. In the System Manager parameterise the I/O update at the start of the task.
5. Synchronisation of the distributed clocks failed	5. Restart the EtherCAT-Master.
6. Several EtherCAT telegrams have been lost.	6. Start an "Emergency scan" in the "System Manager"

 Note	<p>Please consider this note!</p> <p>Further information can be found in the "Beckhoff Information System" on the homepage of www.beckhoff.de.</p>
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Further Information
AX5000_Operating-Instructions - Chapter "Commissioning-->EtherCAT-Synchronisation"

F420, EtherCAT slave controller: Invalid port configuration

EtherCAT slave controller: Invalid port configuration

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F420	62496

Class	Type
Error	Command error

Standard Reaction	Reset
Closed loop ramp	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The check of the EtherCAT port configuration failed.	1. Contact support.

F440, Dynamic SyncManager: IO-Cylce counter error

Dynamic SyncManager: IO-Cylce 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
1. The monitoring of the cycle counter in the dynamic sync manager process data failed.	1. Check if your application provides a valid cycle counter.

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
1. The drive operation mode has changed to a mode which uses the dynamic sync manager while the dynamic sync manager are not enabled.	1. Check if your application activates the dynamic sync manager.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. A parameter error has been detected.	1. Further information can be found in the IDN S-0-0021.

Further Information
AX5000_IDN-Description: "S-0-0021"

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	Software exception

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F4AB, SoE Communication: Parameter error

In the SoE communication layer it has been found that the rated current is not supported in the current product code.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F4AB	62635

Class	Type
Error	Parameter error

Standard Reaction	Reset
Nc handling	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an fatal internal parameter error.	1. Disconnect 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.

F500, Internal error.

Internal error: Init of the ext. ADC failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F500	62720

Class	Type
Error	Runtime error

Standard Reaction	Reset
Nc handling	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
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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
1. 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.	1. Screw the motor plug(s) firmly to the AX5000.
2. 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.	2. Screw the AX5000 firmly to the metallic rear panel.

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
1. There is an internal hardware error.	1. Send the AX5000 to the Beckhoff branch office that is responsible for you.

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
1. A internal fatal firmware error occurred.	1. Disconnect 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.

F506, Internal communication error

Es wurde ein falsche ADC-Kanal übertragen.

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
1. 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.	1. Screw the motor plug(s) firmly to the AX5000.
2. ADC filter not parameterized.	2. Activate the ADC filter (P-0-0204).
3. 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.	3. Screw the AX5000 firmly to the metallic rear panel.

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

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
1. You have selected a wrong firmware file.	1. Use a valid firmware file.

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
1. EMC-Problems.	1. 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.
2. There is an internal hardware error.	2. Send the AX5000 to the Beckhoff branch office that is responsible for you.

F50B, A/D-Converter: DC-Link - measuring error

The analog/digital converter has picked up an invalid signal during measurement of reference voltage for the DC link.

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.	Disconnect 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.

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
1. EMC-Problems.	1. 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.
2. There is an internal hardware error.	2. Send the AX5000 to the Beckhoff branch office that is responsible for you.

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
1. EMC-Problems.	1. 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.
2. There is an internal hardware error.	2. Send the AX5000 to the Beckhoff branch office that is responsible for you.

F50E, A/D-Converter: Measuring error - Umains

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
1. EMC-Problems.	1. 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.
2. There is an internal hardware error.	2. Send the AX5000 to the Beckhoff branch office that is responsible for you.

F50F, A/D-Converter: Measuring error - Modul 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
1. ?	1. ?

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 fatal error occurred. A device reboot is required.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F581, External Periphery - Control card: Reading the ESC-eprom 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
1. The EtherCAT master has not enabled the access.	1. Disconnect 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.

F582, External Periphery - Control card: Writing the ESC-eprom 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
1. The EtherCAT master has not enabled the access.	1. Disconnect 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.

F583, External Periphery - Control card: Reading the ESC-eprom 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
1. The ESC eeprom was written incorrectly, or it is faulty.	1. Disconnect 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.

F584, External Periphery - Control card: Reading the ESC-eprom 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
1. The ESC eeprom was written incorrectly, or it is faulty.	1. Disconnect 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.

F585, External Periphery - Control card: Reading the ESC-eprom 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
1. The ESC eeprom was written incorrectly, or it is faulty.	1. Disconnect 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.

F586, External Periphery - Control card: Checking the ESC-EEPROM failed

An invalid revision number is stored in the ESC EEPROM.

Diagnostic Code (Hex.)	Diagnostic Code (Dec.)
F586	62854

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
The content of the ESC EEPROM was modified (written via the System Manager).	Execute a firmware download to correct the content of the ESC EEPROM.

F587, External Periphery - Control card: Checking the ESC-eprom 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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
The content of the ESC EEPROM was modified (written via the System Manager).	Execute a firmware download to correct the content of the ESC EEPROM.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F589, External Periphery - Control card: Reading the ESC-eprom 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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F58A, External Periphery - Control card: Writing the ESC-eprom 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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F58B, External Periphery - Control card: Writing the ESC-eprom failed

Writing of the ESC eeprom data has failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F58B	62859

Class	Type
Error	Software exception

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F58C, External Periphery - Control card: Writing the ESC-eprom 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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F58D, External Periphery - Control card: Writing the ESC-eprom 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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F590, External Periphery - Control card: ADC - Initialisation failed

Initialisation 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F591, External Periphery - Initialisation failed

External Periphery - Initialisation 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
Torque off	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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F700, Feedback "general": Initialization

The initialisation of the feedback has failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F700	63232

Class	Type
Error	Software exception

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F701, Feedback "general": Initialization - parameter channel

The initialisation of the parameter channel between controll card and front card failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F701	63233

Class	Type
Error	Hardware error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

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	State change to SafeOp. 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.	Analyse the other diagnostic messages and in this way identify the causal problem

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
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

F704, Feedback "general": Over voltage - 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
Axis is inoperable	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. There is an "external voltage" on the sense line of the feedback system "1".	1. Locate this external voltage and suppress it.
2. The voltage regulation or the voltage measurement in the AX5000 is defective.	2. Disconnect 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.

F705, Feedback "general": Under voltage - 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	Hardware error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is too long.	1. Please shorten the feedback line.
2. The voltage regulation or the voltage measurement in the AX5000 is defective.	2. Disconnect 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.
3. Current consumption of the feedback system is too high.	3. Please check the feedback system and replace if necessary.

Further Information
AX5000_Operating-Instructions - Chapter "Installation-->Elektrical installation-->Feedback"

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	Software exception

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F707, Feedback "general": Lost feedback

The AX5000 did not measure any feedback voltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F707	63239

Class	Type
Error	Hardware error

Standard Reaction	Reset
No	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The feedback connector is not correctly attached.	1. Please fasten the feedback connector securely to the AX5000.
2. The sense signal parameters are invalid.	2. Please check the parameters.
3. Either the feedback or the sense line is faulty.	3. Please check the line.



Note

Please consider this note!

After this fault the feedback system voltage will be switched off. Please use an Ohm meter to check the lines.

F708, Feedback "general": Found different feedback in the digital name plate.

The parameterised 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. During the motor replacement a motor with different feedback was connected.	1. Please correct the feedback-parameterization.
2. You have chosen a motor, whose feedback does not correspond to the parameterised feedback.	2. Please select a motor accordingly.

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	State change to SafeOp. 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.	Analyse the other diagnostic messages and in this way identify the causal problem

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	State change to SafeOp. 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.	Analyse the other diagnostic messages and in this way identify the causal problem

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	State change to SafeOp. 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.	Analyse the other diagnostic messages and in this way identify the causal problem

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	State change to SafeOp. 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.	Analyse the other diagnostic messages and in this way identify the causal problem

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	State change to SafeOp. 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.	Analyse the other diagnostic messages and in this way identify the causal problem

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback system has been incorrectly parameterised.	1. Check the parameterisation 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"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback system has been incorrectly parameterised.	1. Check the parameterisation 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"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback system has been incorrectly parameterised.	1. Check the parameterisation 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"

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
1. There is an internal hardware or software error.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F717, Feedback "general": Initialisation failed

The initialisation command could not be executed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F717	63255

Class	Type
Error	Command error

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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	State change to SafeOp. 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.

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

F720, Feedback "general": Initialisation failed

The command for the initialisation of the feedback parameter channel failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F720	63264

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F721, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (Time out).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F721	63265

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F722, Feedback "general": Initialisation failed

The command for the initialisation of the feedback parameter channel failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F722	63266

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F723, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (Commutation offset).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F723	63267

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

Further Information
AX5000_IDN-Description: "

F724, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (Position offset).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F724	63268

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem

F725, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (Time out).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F725	63269

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F728, Feedback "general": Position initialisation failed.

The "position initialisation" command failed due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F728	63272

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. No feedback system has been parameterised.	1. Parameterise a feedback system.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

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	Command error

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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	Command error

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. Es wurde kein Feedback-System parametrieret.	1. Parametrieren Sie ein Feedback-System.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

F731, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (Time out).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F731	63281

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F734, Feedback "general": Position initialisation failed.

The command "position initialisation" offset fault due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F734	63284

Class	Type
Error	Runtime error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F735, Feedback "general": Position initialisation failed.

The command "position initialisation" offset fault due to a timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F735	63285

Class	Type
Error	Runtime error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Axis is inoperable	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. Linear motor You have entered a feedback system in the IDN P-0-0150 that cannot be confirmed.	1. Determine the correct feedback system and enter it in the IDN P-0-0150
2. Rotary motor: You have selected the wrong motor and thus possibly also the wrong feedback system.	2. Select the correct motor.



Note

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"

F73A, Feedback "general": Resolution has been incorrectly parameterised

The resolution parameterised 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have selected an incorrect feedback system.	1. Compare the selected feedback system with the actually existing one.
2. The feedback database was incorrectly parameterised.	2. Call our support dept. and replace the feedback database.
3. During the motor replacement a motor with different feedback was connected.	3. Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Bit resolution multiturn position" or "P-0-0180-->Parameter channel-->Bit resolution multiturn position"

F73B, Feedback "general": Resolution has been incorrectly parameterised

The resolution parameterised 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have selected an incorrect feedback system.	1. Compare the selected feedback system with the actually existing one.
2. The feedback database was incorrectly parameterised.	2. Call our support dept. and replace the feedback database.
3. During the motor replacement a motor with different feedback was connected.	3. Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Bit resolution singleturn position" or "P-0-0180-->Parameter channel-->Bit resolution singleturn position"

F73C, Feedback "general": Resolution per rotation has been incorrectly parameterised

The resolution per rotation parameterised 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have selected an incorrect feedback system.	1. Compare the selected feedback system with the actually existing one.
2. The feedback database was incorrectly parameterised.	2. Call our support dept. and replace the feedback database.
3. During the motor replacement a motor with different feedback was connected.	3. 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"

F73D, Feedback "general": Length of the signal period has been incorrectly parameterised

The length of the signal period of the feedback system from a linear motor parameterised 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have selected an incorrect feedback system.	1. Compare the selected feedback system with the actually existing one.
2. The feedback database was incorrectly parameterised.	2. Call our support dept. and replace the feedback database.
3. During the motor replacement a motor with different feedback was connected.	3. 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"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F73F, Feedback "general": Feedback id has been incorrectly parameterised

The internal ID parameterised 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have selected an incorrect feedback system.	1. Compare the selected feedback system with the actually existing one.
2. The feedback database was incorrectly parameterised.	2. Call our support dept. and replace the feedback database.
3. During the motor replacement a motor with different feedback was connected.	3. Please correct the feedback-parameterization.

Further Information
AX5000_IDN-Description: "P-0-0150-->Parameter channel-->Identifier" or "P-0-0180-->Parameter channel-->Identifier"

F740, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (BiSS).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F740	63296

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F741, Feedback "general": Unknown multiturn position

An unknown multi-turn position was parameterised in the feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F741	63297

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The internal parameterisation of the feedback system is incorrect.	1. Exchange the feedback system.

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	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The commutation offset has not been entered in the digital name plate or the value is not plausible.	1. Exchange the motor.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.



Note

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.

F743, Feedback"general": No feedback connector chosen

The scanning of the feedback failed, because no feedback connection has been parameterised.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F743	63299

Class	Type
Error	Parameter error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. No feedback connection has been parameterised.	1. Please parameterise a feedback connection.

Further Information
AX5000_IDN-Description: "P-0-0150-->Power settings-->Connector" or "P-0-0180-->Power settings-->Connector"

F744, Feedback"general": Wrong feedback connector chosen

The scanning of the feedback failed, because no feedback connection has been parameterised.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F744	63300

Class	Type
Error	Parameter error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. No feedback connection has been parameterised.	1. Please parameterise a feedback connection.

Further Information
AX5000_IDN-Description: "P-0-0150-->Power settings-->Connector" or "P-0-0180-->Power settings-->Connector"

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	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F747, Feedback "general": Parameter invalid.

Linear parameter invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F747	63303

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. See IDN P-0-0150 for the primary feedback or P-0-0180 for secondary feedback.	1. Check the value "Linear resolution about digital interface in nm"

Further Information
AX5000_IDN-Description: "P-0-0150 or P-0-0180"

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
1. The feedback system is defective.	1. Check the feedback system.
2. Linear feedback: the reader head and the measuring tape are maladjusted.	2. Adjust the reader head to the measuring tape.

F749, Feedback "general": Parameter invalid.

Invalid feedback parameterization.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F749	63305

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. The feedback system has been incorrectly parameterised.	1. Check the parameterisation of the feedback system (P-0-0150 or P-0-0180).

Further Information
AX5000_IDN-Description: "P-0-0150"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. IDN "P-0-0150 Parameter channel-->Number of clockcycles to get singleturn position or absolute position" = 0	1. Exchange the parameter.
2. Sum of the Parameter IDN "P-0-0150 Parameter channel-->Number of clockcycles to get singleturn position or absolute position" + IDN "P-0-0150 Parameter channel-->Number of clockcycles to get multiturn position" is not equal to 25 or 21 or 13	2. Exchange the parameter.

Further Information
AX5000_IDN-Description: "S-0-0150"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem.
2. An unknown hard- or software error has occurred.	2. Disconnect 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"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem.
2. An unknown hard- or software error has occurred.	2. Disconnect 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"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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Further Information
AX5000_IDN-Description: "S-0-0150"

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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Further Information
AX5000_IDN-Description: "S-0-0150"

F770, Feedback SSI: Invalid parameter.

Feedback SII: Invalid parameter.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F770	63344

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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F771, Feedback SSI: Single turn resolution to high.

Feedback SII: Single turn resolution to high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F771	63345

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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F772, Feedback SSI: Multiturn resolution to high.

Feedback SII: Multiturn resolution to high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F772	63346

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F782, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F782	63362

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F783, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F783	63363

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F784, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F784	63364

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F785, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F785	63365

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F786, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F786	63366

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F787, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F787	63367

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F788, Feedback "general": Encoder error

The encoder has detected an internal error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F788	63368

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An internal encoder error has occurred.	1. Exchange the feedback system.

F789, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F789	63369

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F78A, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78A	63370

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F78B, Feedback "general": Initialisation failed

The initialisation 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	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. On the basis of the parameterisation of the IDN P-0-0150 or P-0-0180, check whether you have parameterised the IDN to match the feedback system.	1. Change the parameterisation if necessary.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.
3. The feedback system is defective.	3. Check the feedback system.



Note

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"

F78C, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78C	63372

Class	Type
Error	Command error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.
4. An unknown hard- or software error has occurred.	4. Disconnect 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.

F78D, Feedback "general": Initialisation failed

The initialisation 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. Check the parameterisation of the resolution in the IDN P-0-0150 or P-0-0180.	1. Change the parameterisation if necessary.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.
3. Defective feedback system, parameterised internal resolution is too high.	3. Exchange the feedback system.



Note

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"

F78E, Feedback "general": Initialisation failed

The initialisation of the feedback parameter channel has failed (EnDat).

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F78E	63374

Class	Type
Error	Software exception

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

F78F, Feedback "general": Initialisation failed

The initialisation 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
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. Check the parameterisation of the resolution in the IDN P-0-0150 or P-0-0180.	1. Change the parameterisation if necessary.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.
3. Defective feedback system, parameterised internal resolution is too high.	3. Exchange the feedback system.



Note

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"

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F7C3, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F7C5, Feedback parameter channel init error (Biss).

Feedback parameter channel init error (Biss): multi pos 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).

Possible Causes	Solutions
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F7C6, Feedback parameter channel init error (Biss).

The initialisation 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
Axis is inoperable	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The feedback line is defective.	1. Check the line.
2. Wrong feedback system.	2. Enter the correct feedback system.
3. The feedback system is defective.	3. Check the feedback system.

Further Information
See also diagnostic message "F739"

F7C7, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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F7C8, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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F7C9, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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F7CA, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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F7CB, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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F7CC, Feedback parameter channel init error (Biss).

Feedback parameter channel init 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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F7D1, Feedback parameter channel error (Biss).

Feedback parameter channel error (Biss): single pos resolutin > 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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F800, Feedback parameter channel init error (Hiperface): by read manufacturer parameter

Feedback parameter channel init 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).

Possible Causes	Solutions
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F801, Feedback parameter channel init error (Hiperface): by read feedback status

Feedback parameter channel init 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).

Possible Causes	Solutions
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F802, Feedback “Hiperface” init error - Parameter channel

A problem occurred during reading of the feedback position (Hiperface).

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).

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 support who is responsible for you.

F803, Feedback parameter channel init error (Hiperface): unknown name plate

Feedback parameter channel init 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).

Possible Causes	Solutions
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F804, Feedback parameter channel init error (Hiperface): singleturn resolution over 32bit

Feedback parameter channel init error (Hiperface): singleturn 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).

Possible Causes	Solutions
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F805, Feedback parameter channel init error (Hiperface): multiturn resolution over 12 bit

Feedback parameter channel init error (Hiperface): multiturn 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).

Possible Causes	Solutions
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F806, Feedback parameter channel init error (Hiperface): not enough memory

Feedback parameter channel init 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).

Possible Causes	Solutions
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F807, Feedback parameter channel init error (Hiperface): "scan feedback" not valid for this command

Feedback parameter channel init 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).

Possible Causes	Solutions
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F808, Feedback parameter channel init error (Hiperface): open internal interface

Feedback parameter channel init 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).

Possible Causes	Solutions
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F809, Feedback parameter channel init error (Hiperface): internal unknown state

Feedback parameter channel init 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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F80B, Feedback parameter channel init error (Hiperface): feedback denied reset command

Feedback parameter channel init 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).

Possible Causes	Solutions
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F80C, Feedback parameter channel error (Hiperface): unable to clear datafields

Feedback parameter channel error (Hiperface): unable to clear datafields

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F80E, Feedback parameter channel init error (Hiperface): sci parity error

Feedback parameter channel init 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).

Possible Causes	Solutions
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F80F, Feedback parameter channel init error (Hiperface): wrong checksum

Feedback parameter channel init 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).

Possible Causes	Solutions
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F810, Feedback parameter channel init error (Hiperface): wrong address

Feedback parameter channel init 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).

Possible Causes	Solutions
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F811, Feedback “Hiperface” init error . parameter channel

The AX5000 receives fewer data during initialization than expected.

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).

Possible Causes	Solutions
The feedback ,line is defective.	Check the feedback line
The initialization time of the Hiperface system was exceeded.	Increase the value of the parameter P-0-0150/power settings/Wait time after power up
The feedback system is defective.	Change the feedback system.

F812, Feedback parameter channel init error (Hiperface): wrong response

Feedback parameter channel init 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).

Possible Causes	Solutions
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F813, Feedback parameter channel init error (Hiperface): sci error

Feedback parameter channel init 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).

Possible Causes	Solutions
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F840, Feedback analog comutaion channel init error.

Feedback analog comutaion channel init 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).

Possible Causes	Solutions
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F841, Feedback analog comutaion channel init error.

Feedback analog comutaion channel init error: inernal 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).

Possible Causes	Solutions
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F842, Feedback analog comutaion channel init error.

Feedback analog comutaion channel init error: inernal 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).

Possible Causes	Solutions
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F843, Feedback analog computation channel init error.

Feedback analog computation channel init 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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
------------------------	------------------

F845, Feedback analog init error.

Unknown para interface

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F845	63557

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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	State change to SafeOp. Execute Reset-Command (S-0-0099)

Possible Causes	Solutions
The motor/feedback line is defective.	Check the line.
The plug connection of the line is defective.	Check the plug connection.

F851, One cable feedback: Initialization failed

The general initialisation 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).

Possible Causes	Solutions
<p>The initialization sequence of the feedback systems has failed.</p> <p>This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.</p>	<p>Analyse the other diagnostic messages and in this way identify the causal problem.</p>

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

F853, One cable feedback: Get position - Timeout

The system initialisation 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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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).

Possible Causes	Solutions
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F855, One cable feedback: Parameter error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F855	63573

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
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F856, One cable feedback: Write config 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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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F858, One cable feedback: Internal error

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F858	63576

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

F866, OCT / HpfDSL: No electronic data sheet found.

The OCT feedback system does not contain an electronic type plate.

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).

Possible Causes	Solutions
The OCT feedback system does not contain an electronic type plate, despite the fact that the feedback parameterization stipulates that this should be read.	Change the parameterization if necessary. Save a new name plate, if required. Contact the relevant support, if necessary.

F867, OCT / HpfDSL: The electronic data sheet is invalid.

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

F86E, OCT / HpfDSL: Detailed error info

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F86E	63598

Class	Type
Error	Runtime error

Standard Reaction	Reset
No	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
-----------------	-----------

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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
1. The feedback system is defective.	1. Check the feedback system.
2. The feedback line is defective.	2. Check the line.

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	State change to SafeOp. Execute Reset-Command (S-0-0099).

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.

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	State change to SafeOp. A reset is not possible. The drive detected a fatal hard- or software error.

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.

F874, Feedback "AX572x": Feedbackregister 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
1. The feedback system is defective.	1. Check the feedback system.
2. Communication problems with the feedback system.	2. Check the feedback system.

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
1. An incorrect feedback system was installed.	1. Check the feedback system.

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
1. The feedback system is defective.	1. Check the feedback system.
2. The plug connection of the feedback line is defective.	2. Check the plug connection.
3. The feedback line is defective.	3. Check the feedback line.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. Feedback cable is defective.	1. Check the feedback cable
2. Plug connection of the feedback cable defective.	2. Check the plug connection of the feedback cable.
3. No Sense cores exist.	3. Check the feedback cable or parameterise the feedback supply voltage to "unregulated" voltage.

Further Information
AX5000_IDN-Description: "P-0-0150"

F87A, Feedback "AX572x": Defective Powerup Phase of the feedback system

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
1. No feedback signal from the feedback system.	1. Check the feedback system.
2. Feedback cable defective.	2. Check the feedback cable.
3. Feedback system defective.	3. Check the feedback system.
4. Plug connection of the feedback cable defective.	4. Check the plug connection of the feedback cable.

F87C, Feedback "AX572x": FB 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
1. Unsupported feedback system connected.	1. Check the feedback system

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. IDN P-0-0152 or P-0-0182 "gear numerator" and P-0-0153 or P-0-0183 "gear denominator"	1. This parameter must be greater than 0
2. IDN P-0-0153 / P-0-0152 or P-0-0183 / P-0-0182	2. The result of this division must be greater than 1024
3. IDN P-0-0152 / P-0-0153 or P-0-0182 / P-0-0183	3. The result of this division must be greater than 1024
4. IDN P-0-0150 or P-0-0180	4. 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"

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).

Possible Causes	Solutions
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F881, HTL: Error flag active.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F881	63617

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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).

Possible Causes	Solutions
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F883, HTL: Timeout.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
F883	63619

Class	Type
Error	Runtime error

Standard Reaction	Reset
Open loop ramp	State change to SafeOp. Execute Reset-Command (S-0-0099).

Possible Causes	Solutions

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	State change to SafeOp.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.

F8A1, OCT / HpfDSL: sHub not supported.

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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FA01, Feedback process data channel init error

Feedback process data channel init 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
1. This error belongs to the group of the higher-level errors and always occurs together with other errors, which contain the causal problem.	1. Analyse the other diagnostic messages and in this way identify the causal problem.

FA02, Feedback process channel init command timeout.

Feedback process channel init 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).

Possible Causes	Solutions
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FA03, Feedback process channel init command not idle.

Feedback process channel init 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).

Possible Causes	Solutions
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FA04, Feedback process channel init error.

Feedback process channel init 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).

Possible Causes	Solutions
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FA05, Feedback process channel init error.

Feedback process channel init 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).

Possible Causes	Solutions
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FA06, Feedback process channel init error.

Feedback process channel init 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).

Possible Causes	Solutions
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FA07, Feedback process channel, unknown feedback type.

Feedback process channel, unknown feedback type.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA07	64007

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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
1. The pulse sequence of the digital traces (cosine and sine) is incorrect.	1. 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.
2. The spacing between the edges is too small.	2. 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.

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
1. The feedback line is defective.	1. Check the line.
2. The calculated value lies outside the range of tolerance (0.53 Vpp-1.34 Vpp).	2. 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.

FA4A, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): Commutation, anlaog 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).

Possible Causes	Solutions
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FA4B, Feedback process channel error (1Vss)

Feedback process channel error (1Vss): Quadrant init 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).

Possible Causes	Solutions
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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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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FA62, Feedback error TTL: Qudarature encoder error

Feedback error TTL: Qudarature 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
1. With some TTL feedback systems this problem occurs during the initialisation phase.	1. Enter 500 ms as the value for the IDN P-0-0150 "Wait time after power up".
2. The feedback system is faulty.	2. Please replace the motor.
3. There is a large amount of interference to the feedback signal.	3. Please analyse and remove this interference.

FA63, Feedback error TTL: Quadrant init error

Feedback error TTL: Quadrant init 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).

Possible Causes	Solutions
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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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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
1.	1.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

FA82, Feedback "Resolver": Initialisation of the sampling instance failed

Initialisation 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
1. The resolver cabling is faulty.	1. Please check the cabling.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.
3. You have selected and parameterised an unsuitable resolver.	3. Please check the resolver parameter in the IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150 -->Process channel-->Data-->Resolver"

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

FA84, Feedback "Resolver": Number of poles not supported.

The parameterised number of poles is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA84	64132

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. You have parameterised an unsupported number of poles.	1. Please check the parameterisation of IDN "P-0-0150".



Note

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"

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. You have parameterised an unsupported excitation frequency in IDN "P-0-0150".	1. Only an 8 kHz excitation frequency is supported.



Note

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"

FA86, Feedback "Resolver": Transformation ratio not supported.

The parameterised transformation ratio is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA86	64134

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. You have parameterised an unsupported transformation ratio in IDN "P-0-0150".	1. Please check the parameterisation of the transformation ratio in IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150 -->Transformation ratio"

FA87, Feedback "Resolver": Connector not supported.

The parameterised connection is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA87	64135

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. You have parameterised an unsupported connection in IDN "P-0-0150".	1. The resolver must be connected to sockets "X12" or "X22".

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. The hardware version does not support any resolver.	1. Please replace the device.

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
1. The resolver cabling is faulty.	1. Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
2. The resolver is faulty.	2. Please replace the motor.
3. An unknown hard- or software error has occurred.	3. Disconnect 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. The amplitude monitoring is not optimally parameterised.	4. Please check the parameterisation of the amplitude monitoring in IDN "P-0-0150".
5. You have parameterised an unsupported transformation ratio in IDN "P-0-0150".	5. Please check the parameterisation 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"

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
1. The resolver cabling is faulty.	1. Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
2. The resolver is faulty.	2. Please replace the motor.
3. An unknown hard- or software error has occurred.	3. Disconnect 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. The amplitude monitoring is not optimally parameterised.	4. Please check the parameterisation of the amplitude monitoring in IDN "P-0-0150".
5. You have parameterised an unsupported transformation ratio in IDN "P-0-0150".	5. Please check the parameterisation 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""

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
1. The hardware version does not support any resolver.	1. Please replace the device.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. In the IDN "P-0-0152" and/or "P-0-0153" a value has been parameterised as not equal to "1".	1. Both values should be parameterised to "1".

Further Information
AX5000_IDN-Description: "P-0-0152"; "P-0-0153"

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The amplitude correction limit values (0.9-1.1) have been exceeded in IDN "P-0-0150".	1. Please check the parameterisation of IDN "P-0-0150".
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

 <p>Note</p>	<p>Please consider this note!</p> <p>When the amplitude correction value less than 1, the cosine amplitude is adjusted, when the value greater than 1, the sine amplitude is adjusted.</p>
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Further Information
AX5000_IDN-Description: "P-0-0150-->Process channel-->Data-->Resolver-->Sin/Cos Amplitude correction"

FA91, Feedback "Resolver": Use of reserved parameter.

Reserved parameters of IDN "P-0-0150" were parameterised.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA91	64145

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. Reserved parameters of IDN "P-0-0150" were parameterised.	1. Please check the parameterisation of IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150-->rsvd"

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
1. The resolver is not connected correctly.	1. Check the resolver connection.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

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
1. The resolver is not connected correctly.	1. Check the resolver connection.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The IDN "P-0-0002" (cycle time) and "P-0-0150" (excitation frequency) parameters are not tuned with each other.	1. Check both IDNs.

Further Information
AX5000_IDN-Description: "P-0-0002" and "P-0-0150-->Process channel-->data-->Resolver-->Excitation frequency"

FA95, Feedback "Resolver": Internal Error

Internal software error in the resolver evaluation algorithm.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FA95	64149

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. The resolver cabling is faulty.	1. Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
2. You have parameterised an unsupported transformation ratio in IDN "P-0-0150".	2. Please check the parameterisation of the transformation ratio in IDN "P-0-0150".
3. The resolver is faulty.	3. Please replace the motor.
4. An unknown hard- or software error has occurred.	4. Disconnect 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"

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
1. The resolver cabling is faulty.	1. Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
2. You have parameterised an unsupported transformation ratio in IDN "P-0-0150".	2. Please check the parameterisation of the transformation ratio in IDN "P-0-0150".
3. The resolver is faulty.	3. Please replace the motor.
4. An unknown hard- or software error has occurred.	4. Disconnect 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"

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

FAB1, Feedback "MES": Connector not supported.

The parameterised connection is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FAB1	64177

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. You have parameterised an unsupported connection in IDN "P-0-0150".	1. The MES must be connected to sockets "X12" or "X22".

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
1. The hardware version does not support any MES.	1. Please replace the device.

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
1. The MES cabling is faulty.	1. Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
2. The MES is faulty.	2. Please replace the motor.
3. The amplitude monitoring is not optimally parameterised.	3. Please check the parameterisation of the amplitude monitoring in IDN "P-0-0150".
4. An unknown hard- or software error has occurred.	4. Disconnect 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"

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
1. The MES cabling is faulty.	1. Please check the cabling (screen connection, connection hardware, lines and correct attachment of the connectors).
2. The MES is faulty.	2. Please replace the motor.
3. The amplitude monitoring is not optimally parameterised.	3. Please check the parameterisation of the amplitude monitoring in IDN "P-0-0150".
4. An unknown hard- or software error has occurred.	4. Disconnect 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"

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	Runtime error

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

Possible Causes	Solutions
1. The hardware version does not support any MES.	1. Please replace the device.

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
1. An unknown hard- or software error has occurred.	1. Disconnect 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.

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. In the IDN "P-0-0152" and/or "P-0-0153" a value has been parameterised as not equal to "1".	1. Both values should be parameterised to "1".

Further Information
AX5000_IDN-Description: "P-0-0152"; "P-0-0153"

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The amplitude correction limit values (0.9-1.1) have been exceeded in IDN "P-0-0150".	1. Please check the parameterisation of IDN "P-0-0150".
2. An unknown hard- or software error has occurred.	2. Disconnect 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.



Note

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"

FABB, Feedback "MES": Use of reserved parameter.

Reserved parameters of IDN "P-0-0150" were parameterised.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FABB	64187

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
1. Reserved parameters of IDN "P-0-0150" were parameterised.	1. Please check the parameterisation of IDN "P-0-0150".

Further Information
AX5000_IDN-Description: "P-0-0150-->rsvd"

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
Open loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The IDN "P-0-0002" (cycle time) and "P-0-0150" (excitation frequency) parameters are not tuned with each other.	1. Check both IDNs.

Further Information
AX5000_IDN-Description: "P-0-0002" und "P-0-0150-->Process channel-->data-->MES-->Excitation frequency"

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 fatal error occurred. A device reboot is required.

Possible Causes	Solutions
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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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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FC03, Control voltage error: undervoltage

The control voltage (Us) is too low.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC03	64515

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
The voltage (Us) at contact X03 is too low. It is below 24 V -25 %.	Check the 24 V supply feed.

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The safety dummy card in the "X3x" slot of the AX5000 is missing or is not correctly inserted.	1. Switch the voltage off, insert the safety dummy card correctly into the "X3x" slot of the AX5000 and switch the voltage on again.
2. The safety card has been activated.	2. see message "FC0C"

Further Information
Quod vide diagnostic message "FD4A"

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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FC06, Dsp clock error.

Dsp clock error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC06	64518

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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FC08, Overcurrent error

Overcurrent 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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. External short circuit	1. Check the cables, AX-Bridge und remove the short circuit
2. No uniform mains power supply in physical DC-link connection	2. Provide uniform mains power supply

FC09, Deadtime error.

Internal hardware error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC09	64521

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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 support who is responsible for you.

FC0A, Lock error.

Internal hardware error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC0A	64522

Class	Type
Error	Runtime error

Standard Reaction	Reset
Shorted coils brake	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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 support who is responsible for you.

FC0B, Overcurrent error motor, short circuit detection (X13 / X23).

The drive hardware detected an overcurrent 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 reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
Short circuit in the motor cable.	Check the motor cable.
Short circuit in the motor (winding short-circuit).	Check the motor winding with a high-voltage meter.



Note

Ageing of the power output stages

Repeated detection of a motor short-circuit can indicate ageing of the power output stages.

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The axis is enabled and the safety card has been activated by a malfunction in the safety zone of the machine/plant.	1. Rectify the malfunction in the safety zone of the machine/plant and perform a reset.
2. The axis is enabled and the safety card has been activated by a cable breakage in the 24 V supply to the card.	2. Rectify the cable breakage and perform a reset.

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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FC0E, Torque off triggerd by the FPGA logic.

Torque off triggerd 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 occured. A device reboot is required.

Possible Causes	Solutions
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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
Torque off	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
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FC10, FPGA logic: Motorcurrent sum error.

FPGA logic: Motorcurrent 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.

Possible Causes	Solutions
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FC11, FPGA logic: Powersupply error.

FPGA logic: Powersupply 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.

Possible Causes	Solutions
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FC12, FPGA logic: Umains phase error.

FPGA logic: Umains phase error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC12	64530

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
-----------------	-----------

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
Shorted coils brake	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
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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 fatal error occurred. A device reboot is required.

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
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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
1. There is an internal hardware error.	1. Send the AX5000 to the Beckhoff branch office that is responsible for you.

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

FC40, Error saving Hw-Id.

Error saving Hw-Id.

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).

Possible Causes	Solutions
-----------------	-----------

FC41, Error saving Hw-Id.

Error saving Hw-Id. (timeout)

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

FC70, Init of the keypad failed.

Init of the keypad failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FC70	64624

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

FC82, Probe unit error.

Probe unit error: (intrnal 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).

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

FCB0, LCD Display init failed.

LCD Display init failed.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FCB0	64688

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

FCB3, LCD-Display: Initialisierungsfehler

An error has occurred during internal initialisation 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
1. A Fatal software error.	1. Disconnect 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.

FCB4, LCD-Display: Time out

An time out has occurred during internal initialisation 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
1. A Fatal software error.	1. Disconnect 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.

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).

Possible Causes	Solutions
-----------------	-----------

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
1. The axis has been moved to the negative limit switch.	1. Please move the axis away from the negative limit switch.

FCD2, Overspeed error.

The speed of the axis is higher than the parameterised 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
1. The parameterised maximum value was exceeded.	1. Check whether the value of parameter S-0-0113 corresponds to the value from the technical data of the motor.
2. 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.	2. Analyse the value in S-0-0113.
3. An external force is acting on the drive system.	3. Analyse whether that is permissible and reparameterise the drive system if necessary.
4. The parameterised maximum value was exceeded.	4. Analyse why the motor is turning so fast and rectify this.
5. Commutation error; the motor accelerates in an uncontrolled fashion.	5. Analyse why the commutation of the motor is not correct.

Further Information
AX5000_IDN-Description: "S-0-0113"

FCD3, Overspeed error.

The speed of the axis is higher than the parameterised 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
1. The parameterised maximum value was exceeded.	1. Check whether the value of parameter S-0-0113 corresponds to the value from the technical data of the motor.
2. 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.	2. Analyse the value in S-0-0113.
3. An external force is acting on the drive system.	3. Analyse whether that is permissible and reparameterise the drive system if necessary.
4. The parameterised maximum value was exceeded.	4. Analyse why the motor is turning so fast and rectify this.
5. Commutation error; the motor accelerates in an uncontrolled fashion.	5. Analyse why the commutation of the motor is not correct.

Further Information
AX5000_IDN-Description: "S-0-0113"

FCD4, AX5000 utilization error.

The parameterised utilisation 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
1. The parameterised utilisation limit is too low.	1. Increase the limit value.
2. This error message can be suppressed; the current is lowered to P-0-0093 on reaching the utilisation limit.	2. Parameterise the IDN P-0-0316 accordingly.
3. The application overloads the AX5000.	3. Use a larger AX5000 if necessary.

Further Information
AX5000_IDN-Description: "P-0-0093 and P-0-0316"

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
1. The mechanical system is too sluggish.	1. Analyse your application and try make the mechanical system smoother.
2. The use of asynchronous motors:	2. 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).
3. The application overloads the AX5000.	3. 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"

FCD6, Monitoring functions: Shorted coil / DC brake error

The drive detected a overcurrent 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
1. This error depends on the total system configured and occurs only during the armature short circuit braking / DC braking:	1. The solution depends on the total system configured.
2. Asynchronous motor	2. Check the parameterisation of the current controller and the IDNs P-0-0106 and S-0-0107. Analyse the load conditions during the braking procedure.

Further Information
AX5000_IDN-Description: "S-0-0106 and S-0-0107"

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).

Possible Causes	Solutions
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FD00, Motor management: Init failed

Motor management: Init failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD00	64768

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
-----------------	-----------

FD01, Motor management: Init failed

Motor management: Init failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD01	64769

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

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
1.	1.

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

FD07, Motor overtemperature shut down.

Motor overtemperature shut down.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD07	64775

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FD08, Motor management: Drive type don't match.

Motor management: The motor dataset used is optimised 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The motor data were copied from one servo drive to the other.	1. In the TCDriveManager select the motor used from the motor database. The system will then provide the motor data optimised for this drive type.

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

Possible Causes	Solutions
1. Typo while entering the motor type in the TcDriveManager.	1. Please enter the motor type in TcDriveManager exactly as it is shown in the electronic type label.



Note

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.

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

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
The channel output current (P-0-0093) was incorrectly parameterized for one or both of the AX5000 channels.	$P-0-0093 \text{ (channel "A")} + P-0-0093 \text{ (channel "B")} \leq S-0-0112$

Further Information
AX5000_System manual - Chapter "Product description-->Technical data"; AMxx_Operating-Instructions - Chapter "Technical data"

FD0F, Motor brake: Current monitoring error.

When the brake is released, the current flow is lower than parameterized in P-0-0059.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD0F	64783

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
The brake cores are not connected correctly.	Check the connections (X14 / X24).
The value in P-0-0059 was parameterized too high.	Check the parameterization.

FD10, Periphery voltage too high.

The periphery voltage (Up) is too high.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD10	64784

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
The voltage (Up) at contact X03 is too high. It is over 24 V+-25 %.	Check the 24 V supply feed.

FD11, Periphery voltage too low.

The periphery voltage (Up) too low.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD11	64785

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
The voltage (Up) at contact X03 is too high. It is under 24 V--25 %.	Check the 24 V supply feed.

FD12, Unknown constraint IDN

Unknown constraint IDN

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD12	64786

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
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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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
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FD14, Constraint check failed.

The constraint check of the motor data set failed. This may 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
-----------------	-----------

FD15, The maximum feedback frequency is too high.

The feedback frequency exceeds the maximum frequency of the hardware input circuit.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD15	64789

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
A frequency value is calculated from the maximum motor speed (S-0-0113), the encoder resolution (P-0-0150) and the feedback gearing (P-0-0152, P-0-0153), which exceeds the permitted value at the configured encoder input (P-0-0150).	<p>Reduce the value of S-0-0113.</p> <p>Check the Feedback gearing.</p>

 Note	<p>Max. Input frequency</p> <p>SinCos = 273066 Hz</p> <p>Resolver = 300 Hz</p> <p>TTL = 10 MHz</p> <p>MES = 500 Hz</p>
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FD16, Unknown feedback system.

Unknown feedback system.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD16	64790

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
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FD17, Motor overload shutdown.

Motor overload shutdown.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD17	64791

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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FD18, Motorbrake current: Measuring error

An impermissible signal was detected during the measurement of the motorbrake current.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD18	64792

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
1. EMC-Problems.	1. 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.
2. There is an internal hardware error.	2. Send the AX5000 to the Beckhoff branch office that is responsible for you.

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

Possible Causes	Solutions
1. EMC-Problems.	1. 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.
2. There is an internal hardware error.	2. Send the AX5000 to the Beckhoff branch office that is responsible for you.

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

Possible Causes	Solutions
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FD1B, Motor cont. stall torque > peak torque

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1B	64795

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FD1C, ASM don't support's usage of P-0-0077

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1C	64796

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FD1D, Invalid torque characteristic data.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1D	64797

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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FD1E, Invalid inductance characteristic data.

The inductive values for the motor are invalid.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1E	64798

Class	Type
Error	Parameter error

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

Possible Causes	Solutions
The values in parameter P-0-0075 are not plausible.	Check the values in P-0-0075. Read the electronic type plate of the AM8000 again.

FD1F, Got no memory.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD1F	64799

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. 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.	1. 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"

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

Possible Causes	Solutions
1. The permissible range of the voltage value for the field weakening operation "Umains-min and Umains-max" of the IDN P-0-455 is calculated during initialisation and compared with the parameterised value in the IDN P-0-0201.	1. "Umains-min" less than (P-0-0201 minus P-0-0203) and "Umains-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"

FD22, Motor management: Current error

The parameterised 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
Closed loop ramp	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. 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.	1. Check the IDN P-0-0455 and restart the servo drive if necessary.

Further Information
AX5000_IDN-Description: "P-0-0455"

FD40, Power management: Init failed

Power management: Init failed

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD40	64832

Class	Type
Error	Runtime error

Standard Reaction	Reset
Closed loop ramp	A fatal error occurred. A device reboot is required.

Possible Causes	Solutions
-----------------	-----------

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
1. False parameterized mains voltage	1. Check the parameterization and increase the mains voltage tolerance as nessassary
2. The mains voltage is wrong	2. Check the mains voltage



Note

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"

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).

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
1. The mains supply is faulty.	1. Analyse the mains supply and rectify the fault.

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

Possible Causes	Solutions
1. The mains supply is faulty.	1. Analyse the mains supply and rectify the fault.
2. The 3-phase mains supply is continually afflicted by faults.	2. By means of IDN P-0-0204, activate a filter that causes the phase monitoring to wait longer before triggering the error.
3. You are operating the AX5000 on a single-phase mains supply.	3. 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.



Note

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"

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

Possible Causes	Solutions
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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).

Possible Causes	Solutions
-----------------	-----------

FD47, Power management error.

Power management error: init 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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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
1. The safety dummy card in the "X3x" slot of the AX5000 is missing or is not correctly inserted.	1. Switch the voltage off, insert the safety dummy card correctly into the "X3x" slot of the AX5000 and switch the voltage on again.
2. The safety card has been activated.	2. see message "FC0C"

Further Information
Quod vide diagnostic message "FC04"

FD4B, DC link undervoltage.

DC link undervoltage.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4B	64843

Class	Type
Error	Software exception

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

Possible Causes	Solutions
1. The mains voltage was interrupted	1. Provide adequate mains voltage
2. The DC-link undervoltage threshold is too high	2. By P-x-0203 the DC-link undervoltage threshold can be lowered. These can be read out in P-0-0206.
3. The mains voltage is too low or fluctuates	3. Provide adequate mains voltage

Further Information
AX5000_IDN-Description: "S-0-0203" and "S-0-0206"

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
1. Parameterisation of the brake chopper is wrong	1. Check the parameterisation of the brake chopper
2. Wrong selection of the brake resistor	2. Check the resistance of the brake resistor
3. Wrong selection of the brake resistor	3. Check the power of the brake resistor
4. The brake resistor is defective	4. Measure the current resistance of the brake resistor

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
1. The ambient temperature is too high	1. Cool down the ambient temperature
2. The fan is defective	2. Check the fan
3. Internal brake power and power loss of axis are too high	3. Lower the brake power and power loss of axis
4. The cooling slots or the measuring sensors are polluted	4. Clean the cooling slots and the measuring sensors

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).

Possible Causes	Solutions
-----------------	-----------

FD4F, Overvoltage error.

Overvoltage error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD4F	64847

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FD50, Undervoltage error.

Undervoltage error.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD50	64848

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FD51, Power supply phase error.

Power supply pahse 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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

FD55, AX5021: Brake resistor overtemperature shut down

The temperature sensor of the external brake resistor from the brake modul AX5021 indicates overtemperature

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
1. The ambient temperature is too high	1. Cool down the ambient temperature
2. Wrong selection of the brake resistor	2. Check the power of the brake resistor
3. Parameterisation in P-0-0208 is wrong	3. Check the parameterisation

Further Information
AX5000_IDN-Description: "S-0-0208"

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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

Possible Causes	Solutions
-----------------	-----------

FD59, Error Power Management: Wrong external brake resistor found

The determined values of the external brake resistor connected do not correspond to the parameterised values in the TCDriveManager.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD59	64857

Class	Type
Error	Runtime error

Standard Reaction	Reset
Axis is inoperable	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. General measurement error; measure the brake resistor and compare the ohmic value determined to the data on the type label.	1. 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.
2. General measurement error; measure the brake resistor and compare the ohmic value determined to the data on the type label.	2. 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. .



Note

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".

FD5A, Power Management: Overcurrent - dc link connection

An overcurrent occurred when checking the external ZK 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
1. Brake resistor too small.	1. Analyse the application and calculate the required braking power.
2. Short-circuit on X02	2. Check the connection on X02

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
-----------------	-----------

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
-----------------	-----------

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
-----------------	-----------

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The option card used is not compatible.	1. Replace the option card with a compatible version.

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. The firmware of the option card and that of the AX5000 do not correspond to each another.	1. The firmware of the option card and that of the AX5000 need to be updated.

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	Execute Reset-Command (S-0-0099).

Possible Causes	Solutions
1. Option card with false channel count mounted.	1. Mount option card with correct channel count.

FD8D, Invalid identity object

Identy object in the FaktorySettings 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. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The installation of a compatibility patch failed.	1. Disconnect 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.
2. An unknown hard- or software error has occurred.	2. Disconnect 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.

FD8E, Optioncard: Interface of the FPGA 2 not supported

The Interface of the FPGA 2 from the Feedback-Optioncard is not supported.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FD8E	64910

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
1. The option card used is not compatible.	1. Replace the option card with a compatible version.
2. An unknown firmware error has occurred.	2. Disconnect 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.

FDB0, Customer specific function: Init 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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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).

Possible Causes	Solutions
-----------------	-----------

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
-----------------	-----------

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
-----------------	-----------

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
-----------------	-----------

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
-----------------	-----------

FDD4, Configured safety option don't match

Configured safety option don't match

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD4	64980

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FDD5, The basic unit of the drive dont supports a safety option.

The basic unit of the drive dont supports a safety option.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD5	64981

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
-----------------	-----------

FDD6, Safety Option: Not supported firmware index.

Safety Option: Not supported firmware index.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDD6	64982

Class	Type
Error	Runtime error

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

Possible Causes	Solutions
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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
1. The card was removed inadvertently.	1. Insert the card again in the slot.

FDD8, Safety slot: Wrong safety or dummy card inserted

The safety slot (X3x) of the AX5000 contains a safety or dummy card that does not match the internal control card.

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
1. The hardware used is not compatible.	1. Replace the safety or dummy card with a compatible version.

FDD9, Safety card: safety card activated - internal reaction

Once the safety card has been activated there is a delay before the IGBTs are switched off. In parallel the AX5000 tries to brake the motors in a controlled manner.

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
1. The AX5000 is in the safe state (emergency stop circuit still active, cabling fault etc.).	1. Place the system in readiness for operation again.



Note

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.

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. AX5y01 up to AX5140: AX5805 and AX5160 up to AX5193: AX5806.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDDA	64986

Class	Type
Error	Runtime error

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

Possible Causes	Solutions

FDDDB, Safety card: Internal error.

An internal error occurred while evaluating the compatibility of the safety card.

Diagnostic Code (Hex.)	Diagnostic Code (Dez.)
FDDDB	64987

Class	Type
Error	Runtime error

Standard Reaction	Reset
Torque off	A reset is not possible. The drive detected a fatal hard- or software error.

Possible Causes	Solutions
1. The safety card seems to be defective.	1. Try to use a different safety card.

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).

Possible Causes	Solutions
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5 Support and Service

Beckhoff and their partners around the world offer comprehensive support and service, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

Beckhoff's branch offices and representatives

Please contact your Beckhoff branch office or representative for [local support and service](#) on Beckhoff products!

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