

Robostar Robot Controller
N2 Series
Alarm and Maintenance Manual

Version: N2-AM-E03
Issued Date: January 9, 2026

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I. Prior to Startup

Purpose & Usage

This manual describes information on the problems that can occur in the robot system based on N2 controller and measures to solve the problems with procedures. It also describes the measures for the cases that Teach Pendant (hereafter called T/P) doesn't display error messages.

This manual is for the persons such as;

- Service persons for the mechanics or robot who are qualified to solve basic problems
- Programmers who are qualified to write or alter RRL (Robostar robot language) program
- Specialized service persons who are able to systematically analyze and solve the problems

Prerequisites

In case of conducting repair & maintenance services based on this manual, it is recommended the service person to fulfil the following conditions.

- Experience on problems of industrial electrical & mechanical devices
- Knowledge on the functions of robot system
- Experience on installation of actual robot system and its peripherals

Chapter 1 Alarm Level & Hazard

1. Overview

This chapter states alarm Levels that appeared in this manual and all hazards that can occur when performing the relevant works described.

2. Alarm Levels

Controller creates 4 different alarm levels and each level acts differently as below.

Alarm Level	Description	Robot motion	Threads	Motor power
Level 0 (Warning)	Minor error. This is the stage that there is No influence on robot operation at the moment but a long-term neglect may cause problems.	Normal	Normal	ON
Level 1	This is the stage that a recovery via measures for alarms including alarm reset can be possible.	Pause	Normal /Stop	OFF
Level 2	This is the stage that the controller must restart.	Stop	Stop	OFF
Level 3	This is the critical stage that may require a replacement of components.	Stop	Stop	OFF

2.1 Level 0 (Warning)

Level 0 Alarm (Warning) indicates a minor error. It has no influence on robot operation but may cause problems if ignored for long time. All works are valid without recovery of this alarm.

Description	Minor Error (Warning)
Robot motion	Normal
Background thread	Normal
Threads	Normal
Motor power	Normal
Small T/P display	Pop-up of error message window, Blinking of Alarm LED
Error log	Logged
Etc.	This can be set as Level 1 Alarm in the parameter setting.

2.2 Level 1

Level 1 Alarm indicates errors that can be recovered via simple measures without alarm reset of T/P or power cut-off. When background thread was activated, this alarm level doesn't influence on the background thread. If this alarm level continues, it may require the following measures.

Description	Abnormal situation occurs. This can be recovered via simple measures such as alarm reset.
Robot motion	Pause
Background thread	Normal
Threads	Stop
Motor power	Stop
Small T/P display	Pop-up window for error messages, Alarm LED ON
Error log	Logged
Etc.	-

2.3 Level 2

Level 2 Alarm indicates errors on abnormal situations that require power restart. Robot doesn't move and all threads stop. Robot or JOB program cannot be started until error recovery is completed. If the alarm continues, it may require the following measures.

Description	Alarms that require a restart of controller.
Robot motion	Stop
Background thread	Stop
Threads	Stop
Motor power	Stop
Small T/P display	Pop-up window for error messages, Alarm LED ON
Error log	Logged
Etc.	-

2.4 Level 3

Level 3 Alarm indicates errors that require a replacement of certain parts or components used in the robot system. This alarm level may cause a destruction of the robot system. Robotor JOB program cannot be started until error recovery is completed.

Description	This indicates the critical alarms that require a replacement of certain parts or components.
Robot motion	Stop
Background thread	Stop
Threads	Stop
Motor power	Stop
Small T/P display	Pop-up window for error messages, Alarm LED ON
Error log	Logged
Etc.	-

3. Hazard Stages & Signs

The table below defines signs that indicate hazard stages used throughout this manual.

Sign	Designation	Meaning
	DANGER	This warns that deadly and serious injuries or serious product damages can be caused from the accidents unless complying the guidelines.
	WARNING	This warns that accidents may occur unless complying the guidelines and it leads to deadly and serious injuries or serious product damages can be caused from the accidents.
	CAUTION	This warns that accidents may occur unless complying the guidelines and it leads to serious product damages can be caused from the accidents.
	ELECTRICAL SHOCK	This sign indicates a hazard on electric shock which may lead to serious or deadly injuries.
	NOTE	This sign notices important facts and conditions.
	PROHIBITION	This sign notices the prohibitions for normal operation.

Chapter 2 Failure Symptoms & Malfunctions

1. Failure Symptoms

Failure of the robot system includes following symptoms.

- **Event Alarm Message**
- Mechanical errors or the system that doesn't properly operate
- Unable to start the system or showing abnormal status
- Displaying via hardware such as LEDs
- **Other symptoms**

Failures without Alarm Message

If the symptoms are not met the criteria including symptoms, causes and measures described in this section, make sure to contact the representatives or Robostar.

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Startup Failure

Status	System doesn't start or doesn't properly operate.
Symptoms & Causes	<ul style="list-style-type: none"> • No LED is on. • Error in Power source or power connection • T/P failure • T/P is operated but no response to the input • Unable to load the system software • Disk failure of the system software
Measures recommended	
<ol style="list-style-type: none"> 1) Check if the main power supply for the robot system exists and is within the allowed limitation. 2) Check if the main power supply cable is properly connected to the controller power supply. If there are damages on the cable, immediately replace the cable. 3) Check if the main switch is on state. 4) Check the LED of power supply module. If all LEDs are off state, refer to Chapter 2, Section 0 All LEDs Off State. 5) If it is determined that the system is completely dead, refer to Chapter 2, Section 0 Controller Unusable. 6) If it is determined that the T/P failed, refer to Chapter 2, Section 0 T/P Unusable. 7) If it is determined that the system software has troubles, refer to Chapter 2, Section 0 Failure in System Software Loading. 	
Reference Literature	Installation & Handling Manual, Operation manual

Controller Unusable

Status	Controller is completely or intermittently dead. NO LED is on and no action is available. T/P cannot be used.
Symptoms & Causes	<ul style="list-style-type: none"> • Errors in applying the controller power • Power module failure • Disconnection between control module and power module
Measures recommended	
<ol style="list-style-type: none"> 1) Check if the main power supply for the robot system exists and voltage level is in line with the requirements of the controller. 2) Check if the main power supply cable is properly connected to the controller power supply. If there are damages on the cable, immediately replace the cable. 3) Check the LED of power supply module. If all LEDs are off state, replace the power module. 	
Reference Literature	Installation & Handling Manual

T/P Unusable

Status	Controller T/P was completely or intermittently dead. No input is available and nothing can be used. If nothing appears on the screen although T/P was started, move to Chapter 2, Section 0 T/P Communication Error.
Symptoms & Causes	<ul style="list-style-type: none"> • Errors in applying the controller power • T/P was not connected to the controller. • Damages in T/P cable or connector • T/P failure • Interface board failure
Measures recommended	
<ol style="list-style-type: none"> 1) Check if the system is on and T/P is connected to the controller. 2) Check visually if T/P cable was damaged and check if connector was damaged. If possible, directly test T/P in another controller. 3) If any defect in T/P is discovered, replace the T/P. 4) Check the status of the interface board that communicates with the main board after applying the power to T/P. If there is any defect on the interface board, replace it. 	
Reference Literature	Installation & Handling Manual

All LEDs Off State

Status	LEDs in all boards including power module are off. System may not work or may not even start.
Symptoms & Causes	<ul style="list-style-type: none"> • Errors in applying the controller power • Circuit cut-off function • Defect in power module
Measures recommended	
<p>1) Check if main switch was on.</p> <div style="text-align: center;"></div> <p>2) Measure the main voltage using a voltage meter if power is supplied to the system.</p> <p>3) Check if the circuit cut-off function was used.</p> <p>4) If LEDs are still off even though the voltage stays at 220VAC, replace the power module.</p>	
Reference Literature	Installation & Handling Manual

T/P Communication Error

Status	T/P starts but nothing is displayed. No input is available and nothing can be used. T/P was not completely unusable yet. If T/P becomes completely unusable, refer to Chapter 2, Section 0 T/P Unusable.
Symptoms & Causes	<ul style="list-style-type: none"> • In case that the controller was not restarted after changing from small T/P to graphic T/P, or vice versa • In case that a problem occurs in loading the system software
Measures recommended	
<p>1) Restart the controller after changing from small T/P to graphic T/P, or vice versa.</p> <p>2) Verify the failed T/P by connecting the normally working T/P in another controller to this controller and applying a power.</p> <p>3) If any defect in T/P is discovered, replace the T/P.</p> <p>4) If the normally working T/P in another controller shows same problem, check the status of a main board</p> <p>5) If a power is not applied to the main board, replace it.</p> <p>6) If it is determined that system software caused problems because power is normally supplied to the main board, refer to Chapter 2, Section 0 Failure in System Software Loading.</p>	
Reference Literature	Installation & Handling Manual

Irregular Alarm Message

<p>Status</p>	<p>It is thought that alarm messages to T/P are irregular and do not match actual malfunction of the robot. Various types of messages are likely to be displayed wrongly. The most significant reason for this type is that an operator disassembles or reassembles without authorization.</p>
<p>Symptoms & Causes</p>	<ul style="list-style-type: none"> • In case that cable was not properly connected. • Defect in connector • Damages in cable insulating materials
<p>Measures recommended</p>	
<ol style="list-style-type: none"> 1) Check the all internal operation cables, especially the cables recently reconnected during repair works. Re-connect all cables as stated in the robot manual. 2) Check if all cable connectors were tightened. 3) Check if any damage occurred in all cables. Replace all damaged cables by referring to the instructions in the robot manual. 	
<p>Reference Literature</p>	<p>Installation & Handling Manual</p>



T/P Key Inoperable

Status	After starting the system, T/P screen is displayed but key is not input.
Symptoms & Causes	<ul style="list-style-type: none"> • T/P is wrongly connected or cable was damaged. • T/P internal cable was not connected or connector was damaged. • Defect in T/P components
Measures recommended	
<ol style="list-style-type: none"> 1) Check if there are problems in T/P status changing switch or emergency key function. In case of any problem, replace the T/P. 2) Check if Buzzer sound is out when input the T/P key. If a key with no Buzzer sound exists or all keys have a problem, replace the T/P. 3) Check if T/P was properly connected to the controller. 4) Check if T/P cable was damaged. 5) Check if controller power supply and interface board work properly. 6) Check if T/P is usable or not. 7) Replace the T/P if no other ways. 	
Reference Literature	Installation & Handling Manual

Failure in System Software Loading

Status	<p>Unable to operate the controller due to failure in booting the controller system.</p> <p>The most significant reason for this type is that an operator altered the system software or disk was damaged due to main power failure or forced stop by an operator.</p>
Symptoms & Causes	<ul style="list-style-type: none"> • The screen is stopped at T/P logo display and is not moved to the next screen although no problem in the controller. • System software delete and errors
Measures recommended	

<ol style="list-style-type: none"> 1) Check if the main switch was on and the system can be operated using LEDs on the controller. 2) Inspect any damage on the T/P cables visually and check damages in the connector. Directly test T/P at another controller if possible. 3) In case that no fault was discovered in T/P, there is highly likely to be failed in loading the controller system software. 4) After turning the main power off and inserting the USB memory for installation & recovery that was separately provided by the manufacturer, restart the controller. 5) Check if the booting is possible using the USB memory for installation & recovery. If booting is not possible, replace the controller main board. 6) In case of successful booting with the USB memory for installation & recovery, restore the system as a guidance. 7) After restoring the system, remove the USB memory and check if the controller can be normally used. 	
Reference Literature	Installation & Handling Manual, Operation Manual

Robot Collapse in Power Cut-off

Status	<p>When a motor on state, the robot can normally move, but the motor can collapse due to its own weight in off state. A fixed brake imbedded in each motor needs to be checked. This failure may cause serious damages or even death to works near the system and may seriously damage to a console or surrounding devices.</p> <div style="text-align: center;"></div>
Symptoms & Causes	<ul style="list-style-type: none"> • Failed Brake system • Defect in Brake Power supply
Measures recommended	
<ol style="list-style-type: none"> 1) Select a motor that is suspected as a root cause of robot collapse. 2) Check the brake power that is supplied to the selected motor under the motor off state. 3) Check if there is oil leakage in the motor. If yes, replace the motor immediately. 4) Separate the motor from a transmission and check the motor from driving side. If any problem is found, replace the motor immediately. 	
Reference Literature	Installation & Handling Manual

Unable to release Brake

<p>Status</p>	<p>When a robot starts to operate or is jogging, an internal brake needs to be released. If a brake is not released, the robot cannot move and many alarm messages are created.</p>
<p>Symptoms & Causes</p>	<ul style="list-style-type: none"> • Brake interface doesn't operate correctly. • The system is not switched to the motor on state properly. • Defected brake in robot side • Failure in brake power (24V)
<p>Measures recommended</p>	
<ol style="list-style-type: none"> 1) Check the brake cable connection. 2) Check the brake signal and cable. 3) Only one brake failed, check other brakes nearby. Any one of brakes doesn't operate, no usable brake power of 24V may not exist. 4) Inspect the power supply of driver module in order to check if the 24V brake voltage is within normal range. 5) The brake may work continuously due to various failures in other components of the system. Check the Alarm message log by referring to the Operation Manual. 	
<p>Reference Literature</p>	<p>Installation & Handling Manual, Operation Manual</p>

Failures with Alarm Message

Each failure or error is detected as a symptom in advance with or without displaying an alarm log message. Then, the system provides an operator with a message for the problem that causes the specified symptom and explains about the causes.

Alarm Message Description

When an alarm occurs at the controller, the system displays an alarm message window on the T/P screen.

1) Small T/P

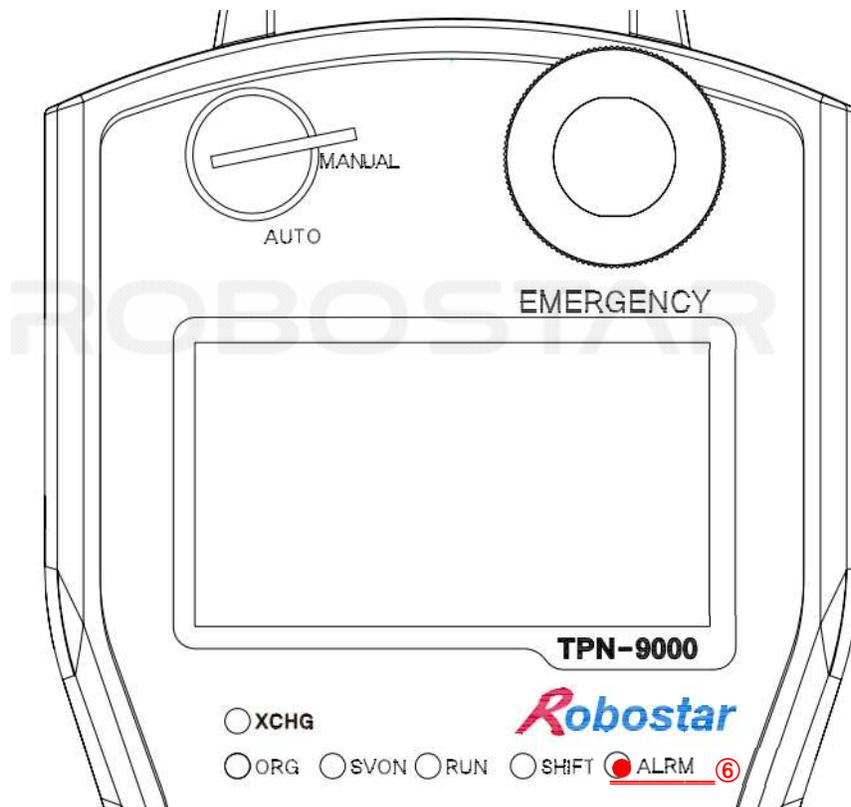


Figure 2-1 Screen of Small T/P

No.	Classification	Description
①	Alarm Code	This indicates the specified number for the alarm currently occurred.
②	Alarm Page	[Current Alarm Page No / Total Number of Alarm Pages] When changing the page, current alarm page no is changed as well. The Page up or down buttons as below can change the page.

③	Alarm Message	<p>This indicates the detail of currently occurred alarm. Additional message as below can be displayed depending on the alarm status.</p> <p>[Format] ROBOT: ① AXIS:② [Detail] Alarm occurred at ③ axis of ① robot</p> <p>The message window can be closed by pressing F4 or ESC key. Alarm List key below allows to check the alarm message again.</p> <p style="text-align: center;">F4 ALARM LIST</p>
④	Alarm Details	<p>This displays the information of currently occurred alarm. This sometimes displays a part of information on brief causes and measures.</p>
⑤	Alarm Measures	<p>This briefly displays solutions for the alarm currently occurred. This may not contain relevant solutions.</p>
⑥	Alarm LED	<p>The corresponding LED becomes on once an alarm occurs. In case of warning situation, the LED blinks.</p>
⑦	Others	<p>Pressing the Up or Down key as below allow to check all messages.</p>

Classification & Summary of Alarm List

The below classifies alarm codes that occur in the controller. For more detail alarm list, refer to Chapter 3 Alarm List.

1) File System (1001~1050)

- This specifies the alarms that occur largely in the file system such as memory errors or JOB program file errors. For more detail, refer to Chapter 3 Section 1. File System (1001~1050).

2) Device (1051~1100)

- This specifies the alarms on other devices except for a driver. For more detail, refer to Chapter 3 Section 2. Device (1051~1100).

3) Protection (1101~1200)

- This specifies the alarms on the damage prevention or motion limitation of controller or robot. For more detail, refer to Chapter 3 Section 3. Protection (1101~1200).

4) Runtime (1201~1300)

- This specifies the alarms that can occur during JOB program execution. For more detail, refer to Chapter 3 Section 4. Runtime (1201~1300).

5) Compile (1301~1400)

- This specifies the alarms on errors of JOB program. For more detail, refer to Chapter 3 Section 5. Compile (1301~1400).

6) Trajectory (1401~1500)

- This specifies the alarms that can occur during motion creation or motion execution. For more detail, refer to Chapter 3 Section 6. Trajectory (1401~1500).

7) Emergency (2101~2200)

- This specifies the alarms on errors that can occur during emergency situation. For more detail, refer to Chapter 3 Section 7. Emergency (2101~2200).

8) EtherCAT Servo Driver (4001~5000)

- This specifies the alarms on errors that were detected by EtherCAT Servo Driver. For more detail, refer to Chapter 3 Section 8. EtherCAT Servo Driver (4001~5000).

9) Graphic T/P (5001~5100)

- This specifies the alarms that can occur in communication with the Graphic T/P. For more detail, refer to Chapter 3 Section 9. Graphic T/P (5001~5100).

Alarm Release Method & Solution Strategy

This briefly mentions the methods to release alarms occurred and to find the causes of alarms through a systematic approach. For more detail alarm list and measures, refer to Chapter 3. Alarm List.

1) Release Method of Alarms & Warnings

When the alarms are released by simple actions without stopping the controller, the alarms are released by following procedure.

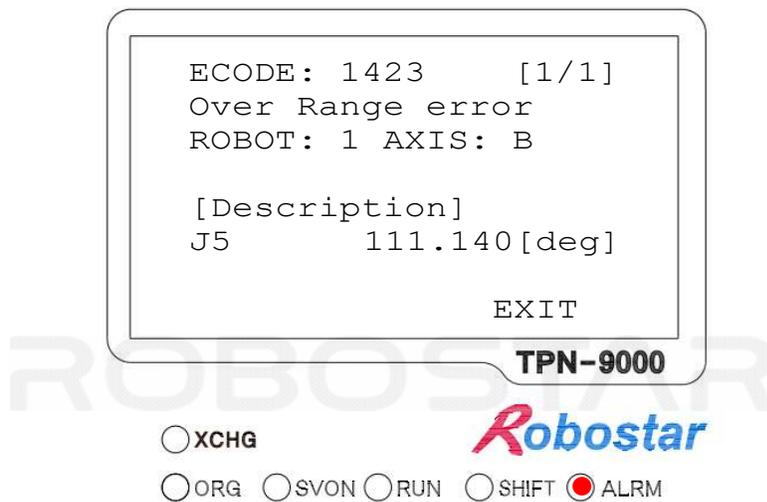


Figure 2-2 Example of Over Range Alarm

- ① When Alarm LED is on or blinking, check the entire messages for alarms or errors by using Up or Down key.
- ② Take necessary measures after finding out the causes of the alarm by referring to the Chapter 3 Alarm List.
- ③ Pop up the Alarm Message window by pressing Alarm List Key. This key has a priority action in most of screens.



- ④ After re-checking the details of alarm or error, press the reset button to release the alarm or warning.



- ⑤ The alarms unreleased show again in alarm format.
- ⑥ If the alarm was completely released, the alarm message window disappear and the alarm LED goes off, then the robot connected to the controller can be resumed to normal operation.

2) Strategy to resolve Alarms

The causes of alarms are analyzed to solve by referring to procedures and methods below.

① Check Alarm Message or Alarm Log.

A big effort has been invested to create alarm log messages as much as other technical literature. This can provide an important clue to solve the problem even if it is incomplete. In addition, the alarm log message is consistently upgraded.

② Identify the basic structure of the system by reading a product description.

A product description was specified in A. Literature Reference. This contains useful and essential information to solve the problems.

③ Read the Log Information.

Other than alarm log messages, there may be lots of information on malfunctions detected by the system such as the controller system log, JOB program log.

④ Check the LEDs of each electronic device.

If the alarm was caused by the electronic components, LEDs either on the front or the board can lead to the causes of the alarm.

⑤ Eliminate the elements that cause defect.

All failures can create various symptoms such as displaying an alarm log message window. In order to effectively solve the failure, it is important to separate the cause symptom from the subsequent symptom.

⑥ Identify the causes of failure by dividing them into two parts.

It is recommended to separate the causes of failure into two areas. Once identifying the overall causes, then determine the specific area of the failure. Afterwards, the same concept is applied by dividing the area into two parts. Eventually this can identify single component that has a defect.

⑦ Check the communication parameters and cables.

The causes for majority of errors in the serial communication are confirmed to be cable defects, transmission speed, wrongly set data bandwidth.

⑧ Check the software version.

Check if the system software and other software are correct versions.

A certain version may not be compatible with a specific hardware. Record the software version because it can be useful information when asking to the agent or manufacturer.



1. Do not replace components without authorization. It is important to determine the unit by identifying the cause of failure to replace before replacing all.
2. Replace one at a time.
3. Confirm if the problem was solved by testing the system after replacing the components.

Alarm Log Verification Method

When verifying the information on the controller alarms that occurred before, it is possible to confirm the alarms through the alarm log menu. Most recent 100 alarm logs can be verified. For more detail, refer to the Operation Manual.

In case of aiming to verify entire alarm logs, those can be downloaded by the Uni-host program or by inserting a USB memory into the controller. When trying to download the log file, refer to the Uni-host Manual and the Operation Manual.

Step	Measures	Information or Figure
1.	Press the 9 key in main screen of manual mode to move to 9. INFO. 9 I	<pre> <MANUAL MODE> 1 . JOB 2 . RUN 3 . HOST 4 . PARA 5 . ORIGIN 6 . I/O 7 . GVAL 8 . GPNT 9 . INFO ITEM #■ </pre>
2.	Press the 3 key at INFO screen to move to 3. LOG screen. 3 S	<pre> <INFO> 1 . ROBOT 2 . CONT 3 . LOG 4 . USB 5 . IF ITEM #■ </pre>
3.	Press the 3 key at LOG screen to move to 2. ALARM screen.	<pre> <INFO : LOG> 1 . SYSTEM 2 . ALARM 3 . USER 4 . COMM ITEM #■ </pre>
4	Alarm Log can be verified. Pressing the left or right arrow key enables to check the entire messages. △ △ Pressing the Page Up/Down keys or Up/Down arrow keys enables to check the entire logs. Pg Up Pg Dn △ △	<pre> ALARM LOG 93 : [180827 18:58:16] 94 : [180827 18:58:39] 95 : [180827 18:58:48] 96 : [180827 19:02:31] 97 : [180828 14:02:14] 98 : [180828 14:02:32] EXIT </pre>

Chapter 3 Alarm List

This chapter describes various alarms that can occur when using the controller. In addition, the root cause for the alarm is presented and the measures are briefly explained.

When the situations below occur, contact to the agent or the manufacturer.

- In case that the alarm not described in this manual occurs
- In case that the presented cause and measures are not satisfied

1) Alarm List Item

Alarm is presented as a table form shown below.

In the table, the code number appears first to easily find out the error messages. It is able to get additional information on the error and measures by referring to this number.

Corresponding information is divided into code, message, description, monitoring, influence, alarm level, cause and measures. The implication for each information is described in the table presented.

Code	<Code No.>	Message	<Message being output in T/P>	
Description	<Description of alarm meaning>			
Monitoring	<Situation or cycle that monitors the corresponding alarm occurrence>	Alarm Level	<Level Value>	
Influence	<Influence that the corresponding alarm gives to the controller>			
Causes		Measures		
<Causes for alarm occurrence>		<Measures for the alarm>		

1. File System (1001~1050)

Code	1003	Message	Out of Memory	
Description	Memory Allocation Error Prevention			
Monitoring	When loading JOB program file	Alarm Level	2	
Influence	Failure in JOB program load and execution			
Causes		Measures		
Failure in memory allocation for controller internal program		1) Check if the alarm is cleared after turning off the controller power and restart the system. 2) When the alarm consistently occurred <ul style="list-style-type: none"> Reinstall or replace the RAM in main board 		

	1. When the alarm above occurs, the stored JOB program data may be lost.
---	--

Code	1021	Message	Job step info error	
Description	Mismatch in the number of lines of JOB program			
Monitoring	When loading JOB program file	Alarm Level	1	
Influence	Failure in JOB program load and execution			
Causes		Measures		
When loading the JOB program into memory, it occurs if actual line number in the JOB and recorded line number are different.		1) Re-write after deleting the JOB file that an error occurs.		

2. Device (1051~1100)

Code	1091	Message	FAN error	
Description	FAN failure occurred			
Monitoring	Periodical inspection	Alarm Level	0	
Influence	None			
Causes		Measures		
FAN failure or FAN cable failure		1) Clear the alarm by pressing the reset button. 2) When the alarm stays consistently; A. Inspect FAN B. Verify FAN connector contact status C. Replace FAN		



1. If not restoring the warning above, the controller system is internally overheated, resulting in damages on the entire system.

Code	1092	Message	FBUS Mismatch error	
Description	In case that field bus type is not in line with the parameter value			
Monitoring	Periodical inspection	Alarm Level	0	
Influence	None			
Causes		Measures		
Received filed type doesn't match to the parameter value of the controller.		1) After altering the filed bus type setting correctly, press the reset button to clear the alarm. 2) When the alarm consistently occurs; A. Inspect the field bus board B. Replace the field bus board		



1. If not restoring the warning above, the functions related to the field bus board cannot be used.

3. Protection (1101~1200)

Code	1104	Message	Servo On Error	ROBOT: Ⓐ AXIS: Ⓑ
Description	Transition failure to servo on state			
Monitoring	In case of servo on	Alarm Level	2	
Influence	Unable to operate the robot			
Causes		Measures		
Problem in applying power to servo module Defect on cable or connector		1) Inspect the power supply system and electrical modules.		
Error status in servo driver		1) Check servo driver status and connection status with a motor. 2) Inspect running status of servo driver.		
Error status in controller		1) Check if there is no problem on parameter setting between servo driver and motor. 2) Adjust gain in servo parameter.		

Code	1105	Message	Servo Off Error	ROBOT: Ⓐ AXIS: Ⓑ
Description	Transition failure to servo off state			
Monitoring	In case of servo off	Alarm Level	2	
Influence	Unable to operate the robot			
Causes		Measures		
Problem in applying power to servo module Defect on cable or connector		1) Inspect the power supply system and electrical modules.		
Error status in servo driver		1) Check servo driver status and connection status with a motor. 2) Inspect running status of servo driver.		
Error status in controller		1) Check if there is no problem on parameter setting between servo driver and motor. 2) Adjust gain in servo parameter.		

Code	1107	Message	ORIGIN FAIL	ROBOT: Ⓐ AXIS: Ⓑ
Description	Origin Work Failure Alarm			
Monitoring	Origin Work In Progress	Alarm Level	1	
Influence	Unable to Verify Origin Position, Position Data Error			
Causes		Measures		
It occurs in case that functional execution was failed with the set Origin work method.		1) Check if Origin work method is correct. 2) In case that the alarm consistently occurs A. Check if input of limit sensor is normal range.		

Code	1108	Message	Not Completed Org	ROBOT: Ⓐ AXIS: Ⓑ
Description	It occurs when conducting other works during Origin work.			
Monitoring	Origin Work In Progress	Alarm Level	1	
Influence	Position Data Error, Unable to execute JOB program			
Causes		Measures		
It occurs when executing JOB program before completing Origin work.		1) Perform Origin work. 2) In case of an absolute type motor, perform Zero offset Calibration.		

Code	1178	Message	MC OFF error
Description	MC (Magnetic Contact) Alarm		
Monitoring	Periodical inspection	Alarm Level	1
Influence	Position Data Error, Unable to execute JOB program		
Causes		Measures	
It occurs when MC is on under emergency stop status. (MC must be off in alarm status)		1) Press a reset button to clear the alarm. 2) When the alarm stays consistently; A. Check MC cable wiring. B. Replace the module if MC module has a problem. C. Replace the module if Safety PLC module has a problem. D. Replace the module if Interface and Safety board have a problem.	

Code	1179	Message	Safety relay fault
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Description	The relay of Safety module were not in contact.		
Monitoring	Periodical inspection	Alarm Level	1
Influence	Unable to operate the robot		
Causes		Measures	
The relay of Safety module were not in contact.		1) The relay of Safety module were not normally in contact when alarm release timing doesn't match. Press the reset key to clear the alarm.	
Safety module problem		1) When this alarm stays consistently under no other external alarms, replace the Safety module.	

Code	1186	Message	In range error	ROBOT: @ AXIS: Ⓟ
Description	Exceed the robot's range			
Monitoring	Periodical inspection	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
It occurs when the axis position exceeds the specified range (In Range).		1) Check if the robot is currently in specified range (In Range) and move it to allowed range. 2) Adjust the teaching point of corresponding axis or specified range(In Range).		

Code	1199	Message	DEADMAN error	
Description	Dead Man switch was not in contact when operating the robot in the manual mode			
Monitoring	In case of jogging	Alarm Level	0	
Influence	Stopping robot operation			
Causes		Measures		
It occurs when Dead Man switch was not in contact during the robot operation.		1) If this alarm occurs when Dead Man switch became not in contact during the manual operation of robot, reattach the contacts after clearing it.		
Dead Man switch problem		1) Replace T/P.		

4. Runtime (1201~1300)

Code	1204	Message	Not Teaching Point	ROBOT: @
Description	It occurs when using the point that teaching was not performed.			
Monitoring	When conducting a motion	Alarm Level	1	
Influence	Robot operation stopping, No motion available			
Causes		Measures		
Use of the point that teaching was not performed in case of using the commands related to robot movement.		<ol style="list-style-type: none"> 1) Check in JOB program if the point that teaching was not performed was used or check if the using point was performed with a teaching. 2) Complete the point teaching by referring to the Operation Manual. 		

Code	1219	Message	Range Over error	ROBOT: @ AXIS: @
Description	It occurs when the teaching point exceeded to the maximum movable distance.			
Monitoring	When conducting a motion	Alarm Level	1	
Influence	Robot operation stopping, No motion available			
Causes		Measures		
Teaching point value exceeded the defined range.		<ol style="list-style-type: none"> 1) Check if the teaching point value is within the range. 2) Adjust the teaching point value to be in the range. 		
Inappropriate setting in the system parameters (RANGE)		<ol style="list-style-type: none"> 1) Check the system parameters. 2) Alter and store the system parameters. 		

Code	1236	Message	Interpreter error	
Description	It occurs when having problems in the command interpretation during execution of JOB program.			
Monitoring	When execution of JOB program	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
It occurs when the controller cannot understand an execution command during JOB program operation or when the controller is about to execute a wrong command.		<ol style="list-style-type: none"> 1) Check the line number and message contents displayed in the alarm message. 2) Repeat the work after revising corresponding JOB program or altering the value with referring to the interpreter alarm detail and its causes. 		

※ Interpreter Alarm Messages & Causes

No.	Alarm Message (Description)
	Causes of Alarm
1	'(' is needed
	In case that there is no input for "(" after a command
2	')' is needed
	In case that there is no input for ")" after a command
3	[<Execution Mode>:<Thread No>] function call depth is over 100.
	In case that a depth of function call exceeds 100 in <Thread No> of <Execution Mode>.
4	[<Execution Mode>:<Thread No>] binaryExpr ==> not define operand[<Operator No>]
	In case that undefined operator was used in <Thread No> of <Execution Mode>.
5	[<Execution Mode>:<Thread No>] factor ==> not define command[<Command No>]
	In case that undefined command was used in <Thread No> of <Execution Mode>
6	[<Input Value>] Tool parameter is not assigned.
	In case that the tool coordinate system with incomplete setting was selected.
7	[<Input Value>] User parameter is not assigned.
	In case that the user coordinate system with incomplete setting was selected.
8	~ operation only int
	In case that the target using the "~" mark as the first character is not an integer type.
9	<JOB Name> JOB Point index = <No> is not teaching point.
	In case that uninitialized program position variable (P) was attempted to use.
10	<Command> index [<Input Value>] is out of range (<Minimum Value>-<Maximum Value>).
	In case that Input Value exceeds the input tolerance.
11	<Command> instruction must be used only position variable.
	In case that the type of input value is not a position type but other types.
12	<Command> must be used only in the servo off state.
	In case that the commands only for servo off state were used in servo on state.
13	<Command>(<Index>) error or <Command>[<Index>] error
	In case that Index value inputted exceeds the tolerance range.
14	<Command>[<Input Value>]: value range is (<Minimum Value>-<Maximum Value>).
	In case that Input Value exceeds the input tolerance.
15	<Motion Command> execute error[<Return Value>]
	In case that <Motion Command> execution was failed.
16	<Motion Command>: Error to convert to <Type> position
	In case of a failure in conversion process that converts the input position value into the position value of <Type> that is required for the command of corresponding motion.
17	<Index> subscript is out of range (range:0-<Maximum Value>)
	In case that input index exceeds the selection range arrangement.
18	<Variable Name> : Uninitialized variable has been used.

No.	Alarm Message (Description)
	Causes of Alarm
	In case that uninitialized variables were attempted to use.
19	<Logic or Bit Operator> d1, d2 data type is only integer.
	In case that the type of two terms are not an integer form when using a logic and a bit operators
20	<General digital input and output commands> failed. If index [<No>] is valid, check IO board.
	In case that use of general digital input and output commands was failed
21	<Input & Output Command>(<Index>) = <Input Value> error
	In case that Index value exceeds the input tolerance range when using input & output commands
22	<Axis No> AXIS <Motion Command> range over
	In case that axis of <Axis No> was beyond the allowed distance
23	<Field Bus Input & Output Command> failed. If index [<No>] is valid, check cclink board.
	In case that use of Field Bus Input & Output Command was failed
24	<Command> parameter p_id /t_id value [<Input Value>] is not correct.
	In case that <Input Value> exceeded the input tolerance range when using a Command
25	ac ==>[<Current Character String No>] string data memory over
	In case that total character strings exceeded the input tolerance count (1000)
26	ACC: value[<Input Value >] range is (<Minimum Value>-< Maximum Value>).
	In case that the input value for acceleration time exceeded the input tolerance range
27	Cannot call main function.
	In case that a thread was attempted to dually assign to the main thread
28	Cannot assign different type position variable.
	In case that other type variable was attempted to substitute
29	Cannot find the job file[<File Name>.JOB]
	In case that the JOB program of inputted file name doesn't exist when using PSEL command
30	Cannot use <Auto Mode Dedicated Command> at foretask.
	In case that Auto Mode Dedicated Command was used in Manual Mode
31	Create thread error
	In case that thread creation was failed when using CTHREAD command
32	d2 data is zero.
	In case that the second term is 0 when using the remainder sign (%) of division
33	d2 data type is wrong.
	In case that the type of second term is different from the first term when using addition (+), subtraction (-), multiplication (*), division (/) signs
34	Data field only assigns integer or float data.
	In case that the substitute value is not the integer or the real number when substituting a value for the individual element of a position variable.
35	Data stored in the global integer/float must be integer type or float type.

No.	Alarm Message (Description)
	Causes of Alarm
	In case that the Input Value is not the integer nor the real number when substituting a value for global integer variable (I) or global real number variable (F)
36	Data type is not specified nor void.
	In case that the variable to be stored is VOID type or doesn't exist
37	DEC: value[<Input Value>] range is (<Minimum Value>-< Maximum Value>).
	In case that the Input Value for deceleration time exceeded the input tolerance range
38	divide by 0
	In case that the second term is 0 when using the division (/) and remainder sign (%)
39	ELSEIF or ELSE should execute after IF instruction.
	In case that ELSEIF or ELSE statement was executed without IF statement
40	EXIT Instruction
	In case that EXIT command was used
41	Fail to clear serial data.
	In case that use of FLUSH command was failed
42	FOS: value[<Input Value>] range is (<Minimum Value>-< Maximum Value>).
	In case that FOS Input Value exceeded the input tolerance range
43	Function id[<No>] is invalid.
	In case of trying to assign the function with a transfer factor to a thread when using CTHREAD command
44	Global Point field only assign integer or float data.
	In case that the substituting value for individual element of global position variable (GP) is not an integer nor real number
45	Global Point index = <No> is not teaching point.
	In case that uninitialized global position variable (GP) was attempted to use
46	Global Point only assign position data.
	In case that the input value substituting for global position variable (GP) is not the joint position type
47	HERE/HERE_REF index range(1 - < Minimum Value >) input = < Input Value >
	In case that the input value exceeded the input tolerance range when using HERE/HERE_REF function
48	Incorrect loop condition in IF/ELSEIF/WHILE loop - not integer type or float type.
	In case that the result of conditional expression of IF/ELSEIF/WHILE statement is not an integer nor a real number
49	Limit : Minimum and maximum values have been reversed. [index : <No>, min: <Minimum Value>, max: <Maximum Value>]
	In case that Minimum Value is larger than Maximum Value when using LIMT command
50	Load job err
	In case that JOB program loading was failed due to a program error

No.	Alarm Message (Description)
	Causes of Alarm
51	Minus operation only int, float
	In case that the target using the "-" mark as the first character is not an integer type or a real number
52	needed variable name: <Variable Name>
	In case that a variable of undefined type was attempted to call
53	No need any factor.
	In case that unnecessary element is followed to a command
54	not integer type or float type
	In case that the input data are not integers nor real numbers
55	Not operation only int, float
	In case that the target using the "!" mark as the first character is not an integer type or a real number
56	Plus/Minus d1, d2 data type mismatch.
	In case that the type of input value is not allowed to conduct addition (+) or subtraction (-) operation
57	robot id mismatch[<Execution Mode>:<Thread No>]
	1) In case that the robot number stored in JOB program file was wrong
	2) In case that the robot number inputted by a user was wrong
58	servo is off!!!
	In case that a command for servo on was used in servo off state
59	SMID : The start position of characters to be extracted is too big.
	In case that the start position for character string extraction is larger than the target character string when using SMID function
60	SMID : The number of characters to be extracted is too big.
	In case that the end position for character string extraction is larger than the target character string when using SMID function
61	Subscript must be unsigned integer.
	1) In case that an integer value was not input when selecting the Index of program position variable (P) or global position variable (GP)
	2) In case that an integer value was not input when selecting the Index of global integer variable (I)
	3) In case that an integer value was not input when selecting the Index of global real variable (F)
	4) In case that an integer value was not input when selecting the Index of array variable
62	Take robot first.
	In case that robot was not selected
63	The <Function Name> function argument type is invalid.
	In case that a transfer factor type of a function is not correct
64	The field value[<Axis No>] of point is out of range(1 - <Axis Max No>).
	Global point field[<Axis No>] is out of range(1 - <Axis Max No>).
65	In case that the Input Axis No exceeded Axis Max No when reading the individual element value of a position variable
	The first index value[<Input Value>] of <Command> function is out of range(0 - <Maximum Value>).
	In case that the first Input Value of a command exceeded the input tolerance range

No.	Alarm Message (Description)
	Causes of Alarm
66	The first parameter should be used only integer type.
	In case that the first Input Value of a command is not an integer type
67	The first parameter type of <Command> function must be <Type> position type.
	In case that the first Input Value of a command is not a position type of <Type>
68	The first parameter type of <Command> function must be <Data Type>.
	In case that the first Input Value of a command is not a <Data Type>.
69	The first parameter value [<Input Value>] of <Command> function/instruction is out of range (<Minimum Value> - <Maximum Value>)
	In case that the first Input Value of a command exceeded the input tolerance range
70	The first parameter value [<Input Value>] of <Command> function must be <Value>.
	In case that the first Input Value of a command is not <Value>
71	The index of global point must be integer.
	In case that a different value other than an integer was inputted when selecting the Index of global position variable (GP)
72	The index of job point must be integer.
	In case that a different value other than an integer was inputted when selecting the Index of program position variable (P)
73	The index value [<Index>] of <Arrangement Variable> is out of range (0 - < Maximum Value >).
	In case that the Input Index value exceeded the selectable range
74	The parameter value [<Input Value>] of <Command> function is out of range (0 - <Maximum Value>)
	In case that the Input value exceeded the selectable range of input tolerance range
75	The input value [<Input Value >] of <Command> is out of range (0 - <Maximum Value>).
	In case that the Input value exceeded the selectable range of input tolerance range
76	The left side is not position variable.
	In case of trying to substitute a position value for not position variable
77	The left side is position constant.
	In case of trying to substitute a value for an integer
78	The maximum length plus two strings must be <Character String Max Length> characters or less.
	In case that the length of a combined string is longer than <Character String Max Length>
79	The number [<No>] of <Function Name> function arguments are invalid.
	In case that the number of transfer factor in a function doesn't match the definition of the function
80	The parameter count of SETERR instruction is 2.
	In case that the number of input factors exceeded 2 when using SETERR command
81	The parameter type of <Command> function must be <Data Type>.
	In case that Input value of a command is not <Data Type>
82	The parameter value of SVAL function must include numeric character.
	In case that no number is included in the input character string when using SVAL command

No.	Alarm Message (Description)
	Causes of Alarm
83	The parameter value [⟨Input Value⟩] of ⟨Command⟩ instruction is out of range (⟨Minimum Value⟩ - ⟨Maximum Value⟩).
	In case that Input Value range of a command exceeded the input tolerance range
84	The pulse width[⟨Input Value 1⟩] should be less than the pulse period[⟨Input Value 2⟩].
	In case that a pulse width of ⟨Input Value 1⟩ is larger than that of ⟨Input Value 2⟩
85	The right side is not position variable.
	In case of trying to substitute a non-position value for a position variable
86	The right side is string type.
	In case of trying to substitute a character string for a non-character string variable
87	The robot [⟨No⟩] is disabled, or its type is not defined.
	In case of the robot not being used or no robot type was set
88	The second index value [⟨Input Value⟩] of ⟨Command⟩ function is out of range (0-⟨Maximum Value⟩)
	In case that the second input value of a command exceeded the input tolerance range
89	The second parameter should be used only integer type.
	In case that the second input value of a command is not the integer type
90	The second parameter type of ⟨Command⟩ function must be ⟨Type⟩ position type.
	In case that the second input value of a command is not the position type of ⟨Type⟩
91	The second parameter type of ⟨Command⟩ function must be ⟨Data Type⟩.
	In case that the second input value of a command is not the ⟨Data Type⟩
92	The second parameter value [⟨Input Value⟩] of ⟨Command⟩ function is less than ⟨Minimum Value⟩.
	In case that the second input value of a command is smaller than the Minimum Value
93	The second parameter value [⟨Input Value⟩] of ⟨Command⟩ function/instruction is out of range (⟨Minimum Value⟩ - ⟨Maximum Value⟩).
	In case that the second input value of a command exceeded the input tolerance range
94	The second parameter value [⟨Input Value⟩] of ⟨Command⟩ function must be bigger than ⟨Minimum Value⟩.
	In case that the second input value of a command is smaller than the Minimum Value
95	The third parameter should be used only integer type.
	In case that the third input value of a command is not the integer type
96	The third parameter type of ⟨Command⟩ function must be ⟨Data Type⟩.
	In case that the third input value of a command is not ⟨Data Type⟩
97	The third parameter type of ⟨Command⟩ function must be only position type.
	In case that the third input value of a command is not a joint position type
98	The third parameter value[⟨Input Value⟩] of ⟨Command⟩ function is less than ⟨Minimum Value⟩.
	In case that the third input value of a command is smaller than the Minimum Value
99	The third parameter value[⟨Input Value⟩] of ⟨Command⟩ function is less than ⟨Minimum Value⟩.
	In case that the third input value of a command is smaller than the Minimum Value

No.	Alarm Message (Description)
	Causes of Alarm
100	The third parameter value[<Input Value>] of <Command> function/instruction is out of range(<Minimum Value> - <Maximum Value>).
	In case that the third input value of a command exceeded the input tolerance range
101	The tool number[<Input Value >] of position variable is out of range(0 - < Maximum Value >).
	In case that, among the individual elements of position variable, the value inputted into the Tool No exceeded the input tolerance range
102	The used value[<Input Value>] of position variable is out of range(0 - 1).
	In case that, among the individual elements of position variable, the value inputted into the Variable Initialization exceeded the input tolerance range
103	The user number[<Input Value>] of position variable is out of range(0 - <Maximum Value>).
	In case that, among the individual elements of position variable, the value inputted into the User No exceeded the input tolerance range
104	The variable type is not integer or float.
	In case that STEP input value is not an integer nor a real number when executing FOR statement
105	Thread function cannot have arguments.
	In case of trying to assign the function with a transfer factor to thread
106	Thread id[<No>] is invalid.
	In case that the selected thread number exceeded the input tolerance range when using a multi-tasking command
107	Thread id[<No>] is used.
	In case that the selected thread has already been used when using CTHREAD command
108	Undefined ARM form[<Value>]
	In case that, among the individual elements of position variable, the value not defined in the robot posture was entered
109	Undefined variable
	In case of calling the undeclared variable
110	User_number: value[<Input Value>] range is (<Minimum Value>-<Maximum Value>).
	In case that the input value exceeded the input tolerance range when selecting a user coordinate system
111	Using uninitialized POS variable
	In case of using the position variable that was not initialized
112	VEL: value[<Input Value >] range is (<Minimum Value >-< Maximum Value >).
	In case that the speed input value exceeded the input tolerance range
113	Wrong argument number[<Factor No>]
	In case that the input transfer factors were input more than the input tolerance number
114	Wrong description: < Command or Sign>
	In case of entering wrong command or using not defined command

No.	Alarm Message (Description)
	Causes of Alarm
115	Wrong file input [BGTD/BGTF.JOB]
	In case of trying to use the unusable JOB program when using PSEL command
116	Wrong local robot[<Robot No>].. Robot ID error!!!
	1) In case of problem in the Robot No stored in JOB program file 2) In case that a wrong Robot No was entered by a user
117	Wrong parameter value
	In case that the value not in allowed range was entered



Code	1237	Message	Invalid ThreadID	
Description	It occurs in case of Thread ID allocation error in JOB program			
Monitoring	When executing JOB program	Alarm Level	1	
Influence	Unable to execute the program			
Causes		Measures		
It occurs when Threads with same ID are used.		<ol style="list-style-type: none"> 1) Check if Threads having same ID are simultaneously used in JOB program. 2) Execute again after altering JOB. 		



5. Compile (1301~1400)

Code	1315	Message	Compile error	
Description	JOB Program Syntax Error			
Monitoring	When loading a JOB program before execution	Alarm Level	1	
Influence	Unable to execute the program			
Causes		Measures		
It occurs when the controller cannot understand the commands in the robot program that was written by a user or the commands were poorly written.		1) Check the line number and detail messages displayed in the alarm message. 2) Execute the program again by altering corresponding JOB after checking the message.		



6. Trajectory (1401~1500)

Code	1414	Message	ik isnan error	ROBOT: ① AXIS: ②
Description	In case that the calculated result is not the number, when interpreting the inverse kinematics of robot.			
Monitoring	Prior to motion execution	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
Errors in teaching point or trajectory when using CP motion		<ol style="list-style-type: none"> 1) Check the information of axis that has problems by referring to the alarm message. 2) Check the teaching point of the line that the program execution was stopped or the trajectory according to the operation condition. 3) Execute again after completing the point modification. 		
Errors in the value of used variable when using CP motion		<ol style="list-style-type: none"> 1) Check the value of point variable in the line that program execution was stopped. 2) Execute again after point modification. 		

Code	1415	Message	ik position error	ROBOT: ① AXIS: ②
Description	Coordinate conversion error occurs when interpreting the inverse kinematics of robot.			
Monitoring	During the motion execution	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
Error occurs when the data conversion from Base coordinate system to Joint coordinate system.		<ol style="list-style-type: none"> 1) Check the teaching point of the line that program execution was stopped. 2) Execute again after point modification. 		

Code	1422	Message	Time Sched. error	ROBOT: Ⓐ AXIS: Ⓑ
Description	Failure in time plan for motion command			
Monitoring	Prior to motion execution	Alarm Level	1	
Influence	Program execution stopping, Unable to execute the motion			
Causes		Measures		
In case that time plan was failed during creating a motion path.		<ol style="list-style-type: none"> 1) Check and adjust the motion parameters. 2) Check the setting values if speed or acceleration and deceleration were used. 3) Check the teaching point and adjust it if necessary. 4) Check and adjust the setting value after using FOS commands. 		

Code	1423	Message	Over Range error	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case that a position command exceeds RANG(SW-Limit) setting range			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
In case that moving position of the axis exceeds the allowed range		<ol style="list-style-type: none"> 1) Check if the robot is within the allowed range and move the robot to the allowed range. 2) Adjust the teaching point of corresponding axis. 		
In case that the parameter setting (RANG) is inappropriate		<ol style="list-style-type: none"> 1) Check the parameter settings. 2) Execute again after adjusting the parameter settings. 		
In case that the moving path is beyond the allowed range even if the teaching point is within the allowed range		<ol style="list-style-type: none"> 1) Check the teaching point. 2) Check and adjust the RANG (SW Limit) parameter value, or adjust the teaching point. 3) Adjust FOS setting to be small if it occurred in the situation of using FOS command. 4) Check the settings of TOOL or USER coordinate systems. 		

Code	1424	Message	Over Speed error	ROBOT: @	AXIS: ⑥
Description	In case that the speed command exceeds the allowed range				
Monitoring	Periodically checking	Alarm Level	1		
Influence	Robot operation stopping				
Causes			Measures		
In case that moving speed of the axis exceeds the allowed range			<ol style="list-style-type: none"> 1) Check the parameter settings (JONT, LINR). 2) Execute again after adjusting the parameter settings. 		
In case that the parameter setting (OVS) is inappropriate			<ol style="list-style-type: none"> 1) Check the over-speed conditions (OVS). 2) Execute again after adjusting the parameter settings. 		
Robot Command Error			<ol style="list-style-type: none"> 1) Check the command and motion conditions (VEL, ACC, DEC, FOS) if using the combined JOB command when executing a motion. 2) Check the relevancy of teaching point. 		
In case of passing through the singularity			<ol style="list-style-type: none"> 1) Check if the robot passes through the singularity. 2) Execute again after adjusting the teaching point. 		

Code	1425	Message	Over Accel. error	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case that the acceleration command exceeds the allowed range			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
In case that moving acceleration of the axis exceeds the allowed range		<ol style="list-style-type: none"> 1) Check the parameter settings (JONT, LINR). 2) Execute again after adjusting the parameter settings. 		
In case that the parameter setting (OVA) is inappropriate		<ol style="list-style-type: none"> 1) Check the over-acceleration conditions (OVA). 2) Execute again after adjusting the parameter settings. 		
Robot Command Error		<ol style="list-style-type: none"> 1) Check the command and motion conditions (VEL, ACC, DEC, FOS) if using the combined JOB command when executing a motion. 2) Check the relevancy of teaching point. 		
In case of passing through the singularity		<ol style="list-style-type: none"> 1) Check if the robot passes through the singularity. 2) Execute again after adjusting the teaching point. 		

Code	1426	Message	Inposition error	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case of exceeding the position error tolerance range			
Monitoring	When Motion ends	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
In case that a motor doesn't satisfy the allowed range (IPA) within the allowed time (IPE) after completing a motion command		<ol style="list-style-type: none"> 1) Check the parameter related to In-position. 2) Execute again after increasing both IPE and IPA values. 3) Check and adjust the robot status and motor gain if consistently occurred after adjustment. 		

Code	1427	Message	TG TimeOut error	
Description	In case that the calculation time of a position command exceeds the execution cycle time.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
In case that the calculation time of a position command exceeds the defined time		1) Check if there is any overload situation in the system.		

Code	1428	Message	TG Mode error	
Description	It occurs in case of violation in trajectory status transition			
Monitoring	the calculation time of a position command exceeds	Alarm Level	1	
Influence	Servo forcedly off			
Causes		Measures		
In case trying to change to the parameter editing screen with staying at servo on state		1) Move to parameter editing screen after servo off.		

Code	1429	Message	ENC Count error	ROBOT: Ⓐ AXIS: Ⓑ
Description	It occurs when the variation of a feedback pulse exceeds the allowed range.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
In case that the variation of encoder data that was periodically entered from servo exceeds the allowed range		1) Check if it consistently occurs. 2) Check the encoder cables, harness and servo board. Replace the relevant component showing a problem.		
In case of performing multi-turn clear		1) Check if it consistently occurs.		

Code	1430	Message	REF Count error	ROBOT: Ⓐ	AXIS: Ⓑ
Description	It occurs when the variation of a command pulse exceeds the allowed range.				
Monitoring	Periodically checking	Alarm Level	1		
Influence	Robot operation stopping				
Causes			Measures		
In case that the variation of position command data that was periodically output to servo exceeds the allowed range			1) Check if it consistently occurs. 2) Check if there is a problem on inputting encoder pulse value.		
In case that the power was not initialized after altering the axis information in parameters			1) Check if the alarm occurs after applying power again.		

Code	1431	Message	Servo ON/OFF TimeOut	ROBOT: Ⓐ
Description	It occurs when the status of servo doesn't match.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes			Measures	
In case that the number of axis being used doesn't match with that of completing the servo on/off			1) Check if the alarm consistently occurs. 2) Check motor, driver and cable.	

Code	1434	Message	Over Trq error	ROBOT: Ⓐ	AXIS: Ⓑ
Description	It occurs when the defined torque limit value was exceeded.				
Monitoring	In case that a TRQ command was used when executing JOB program under servo on state	Alarm Level	1		
Influence	Robot operation stopping				
Causes			Measures		
In case that the torque value in real time exceeded the defined torque limit value			1) Check if the alarm consistently occurs. 2) Adjust the teaching point of corresponding axis. 3) Alter the torque limit value within the range that do not give a damage to a robot or surrounding devices.		

7. Emergency (2101~2200)

Code	2101	Message	T/P emergency
Description	It occurs when the T/P stops by an emergency stop switch.		
Monitoring	Periodically checking	Alarm Level	1
Influence	Robot operation stopping, Unable to both handle JOG and execute program		
Causes		Measures	
In case that T/P emergency stop switch was pressed		<ol style="list-style-type: none"> 1) Check if T/P emergency stop switch was pressed. 2) Clear the alarm after releasing the emergency stop switch. 	
In case that the systems in T/P emergency stop switch have a problem		<ol style="list-style-type: none"> 1) Check if T/P emergency stop switch was pressed. 2) Check if T/P switch was connected to the controller. 3) Repair or replace the T/P when there is a problem. 	

Code	2102	Message	Front emergency
Description	It occurs when the system is in emergency stop state by an emergency stop switch on the front panel.		
Monitoring	Periodically checking	Alarm Level	1
Influence	Robot operation stopping, Unable to both handle JOG and execute program		
Causes		Measures	
In case that an emergency stop switch on the front panel was pressed		<ol style="list-style-type: none"> 1) Check if an emergency stop switch on the front panel was pressed. 2) Clear the alarm after releasing the emergency stop switch. 	
In case that the systems in an emergency stop switch on the front panel have a problem		<ol style="list-style-type: none"> 1) Replace the emergency stop switch. 	

Code	2103	Message	System emergency	
Description	It occurs when the system was in emergency stop due to system I/O operation.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
System emergency stop by a user		1) Clear the controller alarm after releasing the emergency stop situation.		
Problem in the system emergency stop lines		1) Check if 24V power is normally being applied to two contacts of the system I/O. 2) Check if Safety Input cable was cut and replace it if there is a problem.		

Code	2104	Message	Auto emergency	
Description	It occurs when any one of contacts in Interlock A was disconnected in Auto Mode.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case that an contact of Interlock A was disconnected in Auto Mode because of a user or any other reasons		1) Check if 24V power is normally being applied to the contacts of Interlock A. 2) Check the causes of disconnection. 3) Check if Safety Input cable was cut and replace it if there is a problem.		

Code	2105	Message	Manual emergency	
Description	It occurs when any of contacts in Interlock M was disconnected in Manual Mode.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case that an contact of Interlock M was disconnected in Manual Mode because of a user or any other reasons		1) Check if 24V power is normally being applied to the contacts of Interlock M. 2) Check the causes of disconnection. 3) Check if Safety Input cable was cut and replace it if there is a problem.		

Code	2108	Message	Mode mismatch error	
Description	It occurs when the Safety Input Signals in pair were being entered differently.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case that the Input states of Safety Inputs in pair are not same; <ul style="list-style-type: none"> • System Emergency • Interlock A • Interlock M • T/P Emergency • T/P Open • T/P Mode 		1) Check the causes of disconnection. 2) Check if Safety Input cable was cut and replace it if there is a problem. 3) Check the status of Interface & Safety boards.		

Code	2115	Message	Main Board Tmp error	
Description	It occurs when the temperature of main board was higher than the set temperature.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case that the temperature of main board became higher than the set temperature		1) Stop to use the controller if possible and lower the temperature. 2) Check the cause of over-heating in the main board. 3) Check the fan and replace it if there is a problem. 4) Check the fixed status of the heat sink.		

	1. Caution is required for burning accident by over-heating in case of the alarm above.
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8. EtherCAT Servo Driver (4001~5000)



1. This information is limited to the driver Alarm.
2. When checking the alarms described in this section at the driver, these are marked at the last two digits.

Code	4210	Message	IPM fault		ROBOT: @ AXIS: ⑥
Description	It occurs when an over-current (HW) flows in IPM.				
Monitoring	Periodically checking			Alarm Level	2
Influence	Robot operation stopping, Unable to both handle JOG and execute program				
Causes			Measures		
Defect in a motor or an encoder cable			<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Wrong parameter setting related to a motor or an encoder			<ol style="list-style-type: none"> 1) Check the defined values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match the Controller information. 		
Problems in motor phase resistance			<ol style="list-style-type: none"> 1) Check the resistance between phases of motor. (the resistance of U-V, V-W, W-U is less than several Ω) 2) Replace the motor when identifying the problems such an unbalance in resistance between phases. 		
Abnormal status in mechanical parts			<ol style="list-style-type: none"> 1) Check if there exists a collision or a constraint of devices. 2) Restore the system into normal state by checking the mechanical part. 		
Problems in driver			<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, it is possible for driver to have a problem. Thus, replace the driver. 		
Problems caused by noises			<ol style="list-style-type: none"> 1) Check the FG wiring status. 2) Alter the size of FG wirings to the wiring size of main circuit of the driver. 		

Code	4211	Message	IPM temperature	ROBOT: @ AXIS: ⓑ
Description	It occurs when IPM is over-heated.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Under the status that the ambient temperature is high.		<ol style="list-style-type: none"> 1) Check if the ambient temperature exceeds 50°C. 2) Improve the ambient temperature of the driver and cooling conditions. 		
Over-heating alarm occurs continuously.		<ol style="list-style-type: none"> 1) Check if the accumulated operation overload rate [0x2603] among driver parameters is less than 100%. 2) Check if the load is less than 100% by verifying the motor temperature [0x261D] among driver parameters. 3) Adjust the gain of motor. 4) Alter the capacity of driver and motor. 		
Problem in driver		<ol style="list-style-type: none"> 1) Check if the alarm continuously occurs by applying a power again. 2) When the alarm continuously occurs, it is possible for driver to have a problem. Thus, replace the driver. 		

	<ol style="list-style-type: none"> 1. Caution is required for burning accident by over-heating in case of the alarm above.
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Code	4214	Message	Over current	ROBOT: Ⓐ AXIS: Ⓑ
Description	It occurs when an over-current flows.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in cables of motor or encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Error in parameter setting related to motor or encoder		<ol style="list-style-type: none"> 1) Check the defined values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match the controller information. 		
Problems in motor phase resistance		<ol style="list-style-type: none"> 1) Check the resistance between phases of motor. (the resistance of U-V, V-W, W-U is less than several Ω) 2) Replace the motor when identifying the problems such an unbalance in resistance between phases. 		
Abnormal status in mechanical parts		<ol style="list-style-type: none"> 1) Check if there exists a collision or a constraint of devices. 2) Restore the system into normal state by checking the mechanical part. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, it is possible for driver to have a problem. Thus, replace the driver. 		
Problems caused by noises		<ol style="list-style-type: none"> 1) Check the FG wiring status. 2) Alter the size of FG wirings to the wiring size of main circuit of the driver. 		

Code	4215	Message	Current offset	ROBOT: @	AXIS: ⑥
Description	Current Offset error occurs				
Monitoring	Periodically checking	Alarm Level	1		
Influence	Robot operation stopping				
Causes			Measures		
The offset margin for phase current of U, V, W in motor was excessively set.			1) Check if the offset margin for phase current of U/V/W [0x2015]~[0x2017] among driver parameters is more than 5% of the rated current.		
Problem occurred in driver.			1) When the alarm consistently occurs after adjusting the offset for phase current, it is possible for driver to have a problem. Thus, replace the driver.		



Code	4216	Message	Current limit exceed	ROBOT: Ⓐ AXIS: Ⓑ
Description	It occurs when the Current limit value was exceeded.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in cables of motor or encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Error in parameter setting related to motor or encoder		<ol style="list-style-type: none"> 1) Check the defined values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match the Controller information. 		
Problems in motor phase resistance		<ol style="list-style-type: none"> 1) Check the resistance between phases of motor. (the resistance of U-V, V-W, W-U is less than several Ω) 2) Replace the motor when identifying the problems such an unbalance in resistance between phases. 		
Abnormal status in mechanical parts		<ol style="list-style-type: none"> 1) Check if there exists a collision or a constraint of devices. 2) Restore the system into normal state by checking the mechanical part. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, it is possible for driver to have a problem. Thus, replace the driver. 		
Problems caused by noises		<ol style="list-style-type: none"> 1) Check the FG wiring status. 2) Alter the size of FG wirings to the wiring size of main circuit of the driver. 		

Code	4221	Message	Continuous overload	ROBOT: @ AXIS: ⓑ
Description	It occurs in case of continuous overload.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case of continuous operation with overload		<ol style="list-style-type: none"> 1) Check if the accumulated operation overload rate [0x2603] among driver parameters is less than 100%. 2) Adjust the gain of motor. 3) Alter the capacity of driver and motor. 		
Abnormal status in motor Brake		<ol style="list-style-type: none"> 1) Check if motor Brake was opened in servo on. 2) Check if power is well applied to motor brake. 		
Error in parameter setting related to motor or encoder		<ol style="list-style-type: none"> 1) Check the setting values by moving to the parameters related to motor. 2) Execute again after modification if the parameters 3) Do not match with the controller information. 		
In case of errors in basic load rate setting for overload detection among driver parameters		<ol style="list-style-type: none"> 1) Check the basic overload rate setting for overload detection [0x200F] among driver parameters. 2) Execute again after adjusting with an appropriate value. 		
Defect in cables of motor or encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Abnormal status in mechanical parts		<ol style="list-style-type: none"> 1) Check if there exists a collision or a constraint of devices. 2) Check if a normal operation is possible by verifying the mechanical part. 		

Code	4222	Message	Driver temperature 1	ROBOT: ⓐ AXIS: ⓑ
Description	It occurs in case of driver over-heating1.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Under the status that the ambient temperature is high.		<ol style="list-style-type: none"> 1) Check if the ambient temperature exceeds 50℃. 2) Improve ambient temperature and cooling conditions of the driver. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if value of the driver temperature 1 [0x260B] is displayed differently from the ambient temperature under normal state. 2) Replace a driver. 		



1. Caution is required for burning accident by over-heating in case of the alarm above.

Code	4223	Message	Regeneration overload	ROBOT: @	AXIS: ⓑ
Description	It occurs in case of Regeneration overload.				
Monitoring	Periodically checking	Alarm Level	2		
Influence	Robot operation stopping, Unable to both handle JOG and execute program				
Causes			Measures		
In case that high frequency or continuous operations occurred in the regeneration driving.			<ol style="list-style-type: none"> 1) Check the accumulated regeneration overload rate [0x2606] among driver parameters. 2) Check the connection of an external regeneration resistor, alter the capacity of the resistor if it has been already connected and make a connection if not. 		
Error in parameter setting related to the regeneration resistor among driver parameters			<ol style="list-style-type: none"> 1) Check the parameter setting related to the regeneration resistor [0x2009] ~ [0x200E] among driver parameters. 2) Execute again after adjusting with an appropriate value. 		
Errors in Input voltage of main power			<ol style="list-style-type: none"> 1) Check if the input voltage of main power is 544VAC. 2) Check the power source again. 		
Problems in driver			<ol style="list-style-type: none"> 1) Check if there is a heat on the regeneration resistor with no operation. 2) Replace a driver if the alarm occurs with no verification of heat. 		

	<ol style="list-style-type: none"> 1. Caution is required for electric shock when checking the supply voltage due to the alarm above.
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Code	4224	Message	Motor cable open	ROBOT: @ AXIS: ⑥
Description	It occurs when motor cable was disconnected.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Error in parameter setting of phase current of U, V, W among driver parameters		1) Check the offset value setting for phase current of U/V/W [0x2015]~[0x2017] among driver parameters.		
Defect in motor cable		1) Check the wiring status or short status of cables. 2) Replace cables of motor.		
In case of a short circuit among U, V, W phases within a motor		1) Check if a short circuit among U, V, W occurred within a motor. 2) Replace a motor if case of a problem.		
Problems in driver		1) Check if the corresponding alarm consistently occurs under servo on. 2) If the alarm is consistent, replace the driver.		

Code	4225	Message	Driver temperature 2	ROBOT: @ AXIS: ⑥
Description	It occurs in case of driver over-heating2.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Under the status that the ambient temperature is high.		1) Check if the ambient temperature exceeds 50℃. 2) Improve the driver ambient temperature and cooling conditions.		
Problems in driver		1) Check if the temperature 2 value [0x260C] of driver among driver parameters is displayed differently from the ambient temperature under normal state. 2) Replace a driver.		



1. Caution is required for burning accident by over-heating in case of the alarm above.

Code	4226	Message	Encoder temperature	ROBOT: @ AXIS: ⑥
Description	Encoder over-heat			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case of high temperature of encoder inside		1) Check if the internal temperature display of encoder [0x260D] is different from the ambient temperature.		
Problems in encoder		1) Replace the encoder.		

Code	4227	Message	Motor temperature	ROBOT: @ AXIS: ⑥
Description	Motor over-heat			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
In case of continuous operation with excessive higher load than the rated		1) Check if the accumulated operation overload rate [0x2603] is less than 100%. 2) Adjust the gain of motor. 3) Alter the capacity of driver and motor.		
Abnormal status in motor brake		1) Check if motor brake was released in servo on. 2) Check if power is well supplied to motor brake.		
Error in parameter setting related to motor or encoder		1) Check the setting values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match with the controller information.		
Errors in thermal time constant setting of motor among driver parameters		1) Check the thermal time constant of the 3 rd Party motor. 2) Execute again after adjusting with an appropriate value.		
Abnormal status in mechanical parts		1) Check if there exists a collision or a constraint of devices. 2) Check if a normal operation is possible by verifying the mechanical part.		

	<p>1. Caution is required for burning accident by over-heating in case of the alarm above.</p>
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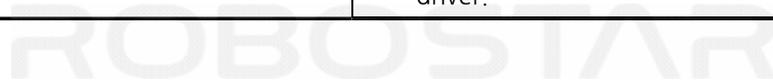
Code	4230	Message	Encoder comm err	ROBOT: ⓐ AXIS: ⓑ
Description	Encoder Communication Error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defects in encoder cable		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Error in parameter setting related to motor or encoder		<ol style="list-style-type: none"> 1) Check the setting values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match with the controller information. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4231	Message	Encoder cable open	ROBOT: @ AXIS: ⑥
Description	It occurs when encoder cable was cut.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in encoder cable		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Error in parameter setting related to motor or encoder		<ol style="list-style-type: none"> 1) Check the setting values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match with the Controller information. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4232	Message	Encoder data err	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case of encoder data error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in encoder cable		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Error in parameter setting related to motor or encoder		<ol style="list-style-type: none"> 1) Check the setting values by moving to the parameters related to motor. 2) Execute again after modification if the parameters do not match with the Controller information. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4233	Message	Motor ID setting	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case of wrong setting in Motor ID			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Errors in Motor ID (WATT) setting		<ol style="list-style-type: none"> 1) Check the setting values by moving to the parameters related to Motor ID (WATT). 2) Execute again after modification if the parameters do not match with the Controller information 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4234	Message	Z phase open err	ROBOT: @ AXIS: ⑥
Description	It occurs when the Motor Z phase was opened.			
Monitoring	Periodically checking	Alarm Level	3	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in cables of motor or encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		



Code	4235	Message	Low battery err	ROBOT: ⓐ AXIS: ⓑ
Description	It occurs when the encoder battery became low voltage state.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
Errors in encoder parameter setting		<ol style="list-style-type: none"> 1) Check the value by moving to encoder type (ENCTY) parameter. 2) Modify the value if it doesn't match with that of the Controller information. 3) Apply the power again. 		
Poor connection or miss connection of battery		<ol style="list-style-type: none"> 1) Check the battery connection status. 2) Properly connect the battery once verifying wrong connection. 3) Perform Multi-Turn Clear and Calibration. 4) Apply the power again. 		
In case of low battery voltage		<ol style="list-style-type: none"> 1) Check if the battery voltage is over 3.3V. 2) Replace the battery if the voltage is lower than the reference. 3) Perform Multi-Turn Clear and Calibration. 4) Apply the power again. 		

Code	4236	Message	Sin ENC amplitude	ROBOT: @	AXIS: ⓑ
Description	In case of errors in the amplitude of encoder sine waves				
Monitoring	Periodically checking	Alarm Level	2		
Influence	Robot operation stopping, Unable to both handle JOG and execute program				
Causes			Measures		
Defect in cables of encoder			<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Errors in parameter setting for Encoder type among driver parameters			<ol style="list-style-type: none"> 1) Check the setting value of Encoder type parameter [0x2001] among driver parameters. 2) Modify the value if it doesn't match with that of the Controller information. 		
Problems in encoder			<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver			<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4237	Message	Sin ENC frequency	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case of errors in the frequency of encoder sine waves			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in cables of encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Errors in parameter setting for Encoder type among driver parameters		<ol style="list-style-type: none"> 1) Check the setting value of Encoder type parameter [0x2001] among driver parameters. 2) Modify the value if it doesn't match with that of the controller information. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4238	Message	Encoder setting	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case of errors in encoder setting			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Errors in combining driver and motor		<ol style="list-style-type: none"> 1) Check the brand label and code of driver and motor. 		
Defect in cables of encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4239	Message	Encoder Over Current	ROBOT: Ⓐ AXIS: Ⓑ
Description	It occurs when the over-current flows in encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in cables of encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of encoder. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4240	Message	Under voltage	ROBOT: Ⓐ AXIS: Ⓑ
Description	It occurs in case of low voltage			
Monitoring	Periodically checking	Alarm Level	3	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Problems in Input voltage of main power source		<ol style="list-style-type: none"> 1) Check if main power voltage is over about 134VAC. 2) Check the power again. 		
In case that DC link voltage is below the reference		<ol style="list-style-type: none"> 1) Check if DC link voltage [0x2605] of driver parameter is over 165VDC under normal supply status of main power. 2) Replace driver if the problem is verified. 		
In case of frequent accelerations		<ol style="list-style-type: none"> 1) Adjust acceleration/deceleration time. 		
In case that the voltage of main power source drops		<ol style="list-style-type: none"> 1) Check the wiring of main power source. 2) Check if there was an instantaneous power failure in factory. 3) Check the supply voltage 		

Code	4241	Message	Over voltage	ROBOT: ⓐ AXIS: ⓑ
Description	It occurs when the over-current flows.			
Monitoring	Periodically checking	Alarm Level	3	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Problems in Input voltage of main power source		<ol style="list-style-type: none"> 1) Check if main power voltage is over about 286VAC. 2) Check the power again. 		
In case that DC link voltage is over the reference		<ol style="list-style-type: none"> 1) Check if DC link voltage [0x2605] of driver parameter is over 405VDC under normal supply status of main power. 2) Replace driver if the problem is verified. 		
In case of big external regeneration resistance		<ol style="list-style-type: none"> 1) Check the operation conditions & external regeneration resistance. 2) Review the regeneration resistance value again in considering the operation conditions & load. 		
In case of frequent accelerations		<ol style="list-style-type: none"> 1) Adjust acceleration/deceleration time. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		



1. Caution is required for electric shock when checking the supply voltage due to the alarm above.

Code	4242	Message	Main power fail	ROBOT: ① AXIS: ②
Description	Problem occurs in main power source.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Errors in Input voltage of main power		1) Check the power again.		
In case that the input state of main power doesn't match with the input mode setting value of main power among driver parameters		1) Check the input mode setting value [0x2006] of main power among driver parameters.		
In case of an instantaneous power failure		1) Check the setting value of phase check time [0x2007] in the main power or the source of power supply.		
Problems in driver		1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver.		

Code	4243	Message	Control power fail	ROBOT: ① AXIS: ②
Description	It occurs in case of the control power source.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Errors in Input voltage of main power		1) Check the power again.		
Problems in driver		1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver.		

Code	4244	Message	DC Fan Trip	ROBOT: @ AXIS: ⑥
Description	It occurs when driver Fan doesn't operate.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Problems in Fan		<ol style="list-style-type: none"> 1) Check the cable connection status of Fan. 2) Replace a Fan if it doesn't operate. 		
Problems in driver		<ol style="list-style-type: none"> 1) Replace a driver when the alarm consistently occurs after replacing the driver Fan because there is a possibility of problems in driver. 		

Code	4250	Message	Over speed limit	ROBOT: @ AXIS: ⑥
Description	It occurs in case of over speed.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
Defect in cables of motor or encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Problems in parameter setting		<ol style="list-style-type: none"> 1) Check the parameters for Motor ID(WATT), Encoder type (ENCTY), Encoder resolution (ENC). 2) Check the GEAR ratio setting. 3) Modify any item that is inconsistent with the Controller specification for the above parameters if any. 4) Check the motor gain parameter and adjust the gain according to the operation conditions. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4251	Message	POS following	ROBOT: @ AXIS: ⓑ
Description	It occurs in case of significant position error			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
Problems in parameter setting		<ol style="list-style-type: none"> 1) Check if the GEAR ratio setting is in line with the specification and modify it if is not. 2) Check the position error range (FOW) setting and adjust it again according to the operation conditions. 		
In case that motor gain is too low		<ol style="list-style-type: none"> 1) Check the motor gain parameter and adjust it again according to operation condition. 		
Abnormal status in mechanical parts		<ol style="list-style-type: none"> 1) Check if there exists a collision or a constraint of devices. 2) Restore the system into normal state by checking the mechanical part. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4253	Message	Excessive deviation	ROBOT: Ⓐ AXIS: Ⓑ
Description	In case that a significant speed error occurred			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping, Unable to both handle JOG and execute program			
Causes		Measures		
Defect in cables of motor or encoder		<ol style="list-style-type: none"> 1) Check the wiring status or short status of cables. 2) Replace cables of motor or encoder. 		
Problems in parameter setting		<ol style="list-style-type: none"> 1) Check the parameters for Motor ID (WATT), Encoder type (ENCTY), Encoder resolution (ENC). 2) Check the GEAR ratio setting. 3) Modify any item that is inconsistent with the Controller specification for the above parameters if any. 		
In case that motor gain is too high or too low		<ol style="list-style-type: none"> 1) Check the motor gain parameter and adjust the gain according to the operation conditions. 		
Abnormal status in mechanical parts		<ol style="list-style-type: none"> 1) Check if there exists a collision or a constraint of devices. 2) Restore the system into normal state by checking the mechanical part. 		
Problems in encoder		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the motor. 		
Problems in driver		<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4263	Message	Parameter checksum	ROBOT: @	AXIS: ⑥
Description	It occurs when there is a problem in driver parameter data.				
Monitoring	When transmitting driver parameter	Alarm Level	1		
Influence	Robot operation stopping				
Causes			Measures		
In case of changing driver OS			<ol style="list-style-type: none"> 1) Check if there is any parameter that was set as the max value in a variable type by verifying the driver parameter setting. 2) Return to the initial driver parameter. 3) After returning to the initial driver parameter, set the parameter according to the Controller specification that was used before the operation. 		
Problems in driver			<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs by applying the power again. 2) When the alarm consistently occurs, replace the driver. 		

Code	4271	Message	Factory setting	ROBOT: @	AXIS: ⑥
Description	Abnormal value in factory setting				
Monitoring	Periodically checking	Alarm Level	2		
Influence	Robot operation stopping, Unable to both handle JOG and execute program				
Causes			Measures		
In case of parameter setting error			<ol style="list-style-type: none"> 1) Set the driver capacity again or download the O/S again. 2) Replace the driver if the alarm consistently occurs after applying the power again. 		

Code	4501	Message	Ethercat stop	ROBOT: ⓐ	AXIS: ⓑ
Description	In case of complete loss in EtherCAT communication				
Monitoring	Periodically checking	Alarm Level	2		
Influence	Robot operation stopping, Unable to both handle JOG and execute program				
Causes			Measures		
XML File Error			<ol style="list-style-type: none"> 1) Check if the XML file according to the Controller specification was used. 2) If it was not properly set, execute the Controller again after modifying the XML file. 		
LAN Cable Error			<ol style="list-style-type: none"> 1) Check the LAN cable between main board and driver. 2) Insert a LAN cable properly and replace a cable in case of defects. 		

Code	4502	Message	Ethercat Comm fail	ROBOT: ⓐ	AXIS: ⓑ
Description	In case of error during EtherCAT communication				
Monitoring	Periodically checking	Alarm Level	1		
Influence	Robot operation stopping, Unable to both handle JOG and execute program				
Causes			Measures		
LAN Cable Error			<ol style="list-style-type: none"> 1) Check if the alarm consistently occurs. 2) Check the LAN cable between main board and driver. 3) Insert a LAN cable properly and replace a cable in case of defects. 		

9. Graphic T/P (5001~5100)

Code	5001	Message	Socket hung up
Description	It occurs when the communication between graphic T/P and Controller was lost.		
Monitoring	Periodically checking	Alarm Level	1
Influence	Robot operation stopping & unable to operate		
Causes		Measures	
In case that an error was received or the connection as terminated by the client		<ol style="list-style-type: none"> 1) Check if the same symptom occurs after connecting a graphic T/P again. 2) Replace the graphic T/P in case that the damages or defects of the graphic T/P cable are verified. 3) Check the status of graphic T/P through key input and replace the graphic T/P in case of problem. 4) If no problem is observed in the graphic T/P, connect it to another Controller. If a problem occurs, replace the graphic T/P. 5) When connecting to another Controller, if the graphic T/P operate normally, check the damages in connector as well as the Interface & Safety boards. 	

Code	5002	Message	GTP timeout
Description	In case that the time out occurred during a communication in progress between the graphic T/P and the Controller		
Monitoring	Periodically checking	Alarm Level	1
Influence	Robot operation stopping & unable to operate		
Causes		Measures	
In case that Acknowledge signal was not received until termination of timer after data transmission between the graphic T/P and the Controller		<ol style="list-style-type: none"> 1) Check if the same phenomenon occurs after connecting a graphic T/P again. 2) Replace the graphic T/P in case that the damages or defects of the graphic T/P cable are verified. 	

10. KeDrive Error list (5001~5100)

10.1 KeDrive Alarm

Code	5001-0	Message	Unknown runtime err	
Description	Unknown runtime error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-0	Message	Unknown parameter er	
Description	Unknown parameter list error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-1	Message	Parameter init fail	
Description	Parameter initialization failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This issue is probably caused by an unsuit able parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if 		

	the error occurs again. <ul style="list-style-type: none"> When reporting this error to your service partner, please include your device's parameter setting.
This is probably a software issue.	<ul style="list-style-type: none"> Please try to switch to a different version of device firmware. Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5002-2	Message	Base para init fail	
Description	Parameter base initialization failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue		<ul style="list-style-type: none"> Please try to switch to a different version of device firmware. Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-3	Message	OEM para init failed	
Description	Parameter OEM initialization failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> Please try to switch to a different version of device Firmware. Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-4	Message	Backup device failed	
Description	Backup of device setting failed			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		

<p>This issue is probably caused by an unsuitable parameter setting.</p>	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest changes. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.
<p>The axis module's flash memory might be full.</p>	<ul style="list-style-type: none"> • If you have stored large user data of the device, please remove them.
<p>An unexpected error in the file system has occurred.</p>	<ul style="list-style-type: none"> • Please report this error to your service partner. • Please check with your service partner how to generate an image file of the drive. • Please provide the DriveManager message log.
<p>This is probably a software issue.</p>	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5002-5	Message	Failed register para	
Description	Registration of new parameter failed			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		
<p>This is probably a software issue.</p>		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-6	Message	Failed to check para	
Description	Parameter check failed			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		

This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
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Code	5002-7	Message	Para ID duplicated	
Description	Attempt to register multiple parameter with same ID			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-8	Message	Failed to init para	
Description	Initialization of power stage parameters failed			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest changes. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5002-9	Message	FLASH file access er	
Description	Error during FLASH file access			

Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		
Causes		Measures	
An unexpected error in the file system has occurred.		<ul style="list-style-type: none"> • Please report this error to your service partner. • Please check with your service partner how to generate an image file of the drive. • Please provide the DriveManager message log. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5003-0	Message	Generate object err
Description	General error generating object list		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5003-1	Message	Generate object err
Description	Error while generating object list		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5004-0	Message	General EtherCAT err
Description	General EtherCAT error		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5004-1	Message	Invalid configure er
Description	Invalid configuration for syncmanager		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5004-2	Message	Watchdog expired
Description	Watchdog of syncmanager expired		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • . Check motor grounding and motor cable length. 	

Code	5004-3	Message	Sync manager err
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Description	Sync manager event missed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. Try to increase the master cycle time.	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length. 	

Code	5004-4	Message	Synchronization err
Description	Synchronization accuracy is outside the expected tolerance		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. Try to increase the master cycle time.	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length. 	

Code	5004-5	Message	PreOP to SafeOP err
Description	Transition from PreOperational to SafeOperational failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

The device was probably disconnected from the master controller, or the master is overloaded.	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.
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Code	5004-6	Message	SafeOP to OP err
Description	Transition from SafeOperational to Operational failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5004-7	Message	Transmit mailbox err
Description	One of the transmit queues for mailbox TX transfer has overflown		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5004-8	Message	DPM access failed
Description	netx indicates a dpm hardware access failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with 	

	activating a certain feature.
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Code	5004-9	Message	RxPdo out of range
Description	Value from RxPdo is out of range		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check PLC program vs. parameter list min/ max values. 	

Code	5005-0	Message	General ethernet err
Description	General Ethernet error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the Ethernet/ EoE connection to the drive. The connection is probably no longer working.		<ul style="list-style-type: none"> • Please restart application (24V reset). • If the error occurs again, switch device to service mode. Try to save a device commissioning file with your settings. • Please re-view ethernet over EtherCAT (EoE) settings on the master. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5005-1	Message	Fail hardware init
Description	Initialization of hardware failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

An error occurred on the Ethernet/ EoE connection to the drive. The connection is probably no longer working.	<ul style="list-style-type: none"> • Please restart application (24V reset). • If the error occurs again, switch device to service mode. Try to save a device commissioning file with your settings. • Please re-view ethernet over EtherCAT (EoE) settings on the master.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5005-2	Message	Receive overflow err
Description	Receive queue overflow of ethernet controller		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the Ethernet/ EoE connection to the drive. The connection is probably no longer working.		<ul style="list-style-type: none"> • Please restart application (24V reset). • If the error occurs again, switch device to service mode. Try to save a device commissioning file with your settings. • Please re-view ethernet over EtherCAT (EoE) settings on the master. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5005-3	Message	Transmit overflow er
Description	Transmit queue overflow of ethernet controller		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the Ethernet/ EoE connection to the drive. The connection is probably no longer working.		<ul style="list-style-type: none"> • Please restart application (24V reset). • If the error occurs again, switch device to service mode. Try to save a device commissioning file with your settings. • Please re-view ethernet over EtherCAT (EoE) settings on the master. 	

This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module
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Code	5006-0	Message	Unknown fatal error	
Description	Unknown fatal error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5006-1	Message	Failed to load FW	
Description	Axis controller FW load failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5006-2	Message	Controller not start	
Description	Axis controller not started			
Monitoring	Periodically checking	Alarm Level	2	

Influence	Robot operation stopping, unable to both handle JOG and execute program	
	Causes	Measures
	This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
	This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5006-3	Message	Controller no respon	
Description	Axis controller not responding			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
	Causes	Measures		
	This issue is probably caused by an unsuitable parameter setting.	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		
	This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		
	This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5006-4	Message	Illegal computation	
Description	Illegal computation in axis controller			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
This issue is probably caused by an unsuitable parameter setting.	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5006-5	Message	Production data err
Description	Production data access error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
An unexpected error in the file system has occurred.	<ul style="list-style-type: none"> • Please report this error to your service partner. • Please check with your service partner how to generate an image file of the drive. • Please provide the DriveManager message log.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5006-6	Message	Not suitable variant
Description	Hardware revision or variant not suitable		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5006-7	Message	Supply unit error
Description	Supply unit fatal error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5006-8	Message	Production data err
Description	Production data access error (article number)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An unexpected error in the file system has occurred.		<ul style="list-style-type: none"> • Please report this error to your service partner. • Please check with your service partner how to generate an image file of the drive. • . Please provide the DriveManager message log. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module
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Code	5007-0	Message	Unknown initial err	
Description	Unknown error during initialization			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5007-1	Message	SYNC unit failed	
Description	Initialization of SYNC unit failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		

This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
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Code	5007-2	Message	Configuration failed
Description	Configuration of sigma/delta ADCs failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5007-3	Message	Control initial err
Description	Error during control initialization		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 	

This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
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Code	632007h	Message	Switch frequency err	
Description	Selected switching frequency is not possible			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Selected actual switching frequency is not allowed (see parameters CON_SwitchFreq and CON_SwitchFreqMask). Change setting. 		

Code	5007-5	Message	Current monitor err	
Description	Error during init current monitoring			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		

Code	5007-6	Message	I2t monitoring err	
Description	Error during init I2t monitoring			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

<p>This issue is probably caused by an unsuitable parameter setting.</p>	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.
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Code	5007-7	Message	Timeout control mode	
Description	Timeout during parameter control mode			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • This error may be caused by time-consuming operations in the PC software. Quit error and restart manual mode. • Please check your Ethernet/ EoE connection to the device. 		

Code	5007-8	Message	Init parameters err	
Description	Error while initializing the standardization parameters			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>This issue is probably caused by an unsuitable parameter setting.</p>		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		

Code	5007-9	Message	Math library error	
Description	Error in Math library			
Monitoring	Periodically checking	Alarm	2	

		Level	
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This issue is probably caused by an unsuitable parameter setting.		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5007-11	Message	Voltage levels error	
Description	Voltage levels too high			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5007-12	Message	Motor commutation err	
Description	Error in motor commutation			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Auto commutation might not be working properly.		<ul style="list-style-type: none"> • Please check the encoder speed and direction, and motor pole pairs. • Check auto commutation parameters. • Make a scope record with scope values 24, 25, 21, 1009. 		

Code	5007-13	Message	Inertia is zero	
Description	Error in observer method, inertia is zero			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • In Control/ Basic settings, run automatic detection of inertia. 		

Code	5007-14	Message	Power stage data err	
Description	Error in power stage data			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>This is probably a software issue.</p>		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5007-15	Message	Interpolation error	
Description	Interpolation cycle time not allowed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check field bus master configuration 		

Code	5007-16	Message	Autotunig error	
Description	Autotuning/ identification error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes		Measures	
		<ul style="list-style-type: none"> • Please view details (>>) and message log. • Please verify that the axis is ready to switch on before starting procedure. • Please try to use a different procedure 	

Code	5007-17	Message	Compensation 1 error	
Description	Compensation table 1 failed to initialize			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter data set for compensation table1. • Read online help. 		

Code	5007-18	Message	Compensation 2 error	
Description	Compensation table 2 failed to initialize			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter data set for compensation table2. • Read online help. 		

Code	5007-19	Message	Speed limit error	
Description	Speed limit of 600Hz exceeded			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • This device is limited to 600 Hz output frequency. Please reduce maximum speed. • Please contact service for a higher frequency device. 		

Code	5007-20	Message	VSU hardware error	
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Description	The VSU hardware variant does not support some selected features		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter SUPPLY_DcLinkCoupling. Please contact service for a different VSU device. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5007-21	Message	Modulo position err
Description	Error while initializing modulo position parameters		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check modulo position limits. 	

Code	5007-22	Message	Position encoder err
Description	Position encoder must not use MTBase and overflow compensation together		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Set ENC_CHx_Settings.MTBase back to default. • Please read online help. 	

Code	5008-0	Message	General encoder err	
Description	General encoder error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check encoder settings and connected encoders of this axis. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5008-11	Message	Encoder offset err	
Description	Encoder offset detection failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Auto commutation might not be working properly.		<ul style="list-style-type: none"> • Please check the encoder speed and direction, and motor pole pairs. • Check auto commutation parameters. • Make a scope record with scope values 24, 25, 21, 1009. 		

Code	5008-12	Message	Different motor type	
Description	Motor was replaced with different motor type			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, load new motor nameplate manually, and tune parameters for application • If motor change guarding is not intended, please see "encoder special function" 		

Code	5008-13	Message	Unknown motor type	
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Description	Motor was replaced with unknown motor type		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Execute a factory reset, and load motor parameter set • If motor change guarding is not intended, please see "encoder special function" 	

Code	5008-14	Message	Acquire position err
Description	Encoder #1: Cannot acquire position because motor is moving		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Stop motor mechanically and quit error 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5008-15	Message	Encoder no distance
Description	Position encoder has no distance-coded zero pulses, or wrong parameter setting.		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter setting of encoder. DistCodeA and DistCodeB must be set. • Use a different homing method. 	

Code	5008-20	Message	SSI error
Description	Encoder: SSI error		

모니터		Alarm Level	
Influence			
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5008-30	Message	ENDAT protocol error	
Description	Encoder: ENDAT protocol error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

Code	5008-42	Message	H-F protocol error	
Description	Encoder: Hiperface protocol error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length.

Code	5008-50	Message	Internal comm err #1	
Description	Encoder #1: Internal communication error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5008-51	Message	Internal comm err #2	
Description	Encoder #2: Internal communication error			
Monitoring	Periodically checking	Alarm Level	2	

Influence	Robot operation stopping, unable to both handle JOG and execute program	
	Causes	Measures
	The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
	This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
	This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
	This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5008-52	Message	Internal comm err #3	
Description	Encoder #3: Internal communication error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
	Causes	Measures		
	The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
	This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5008-53	Message	Internal comm err #4	
Description	Encoder #4: Internal communication error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5008-60	Message	A/B pattern error #1	
Description	Encoder #1: A/B pattern error, probably EMC problem			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5008-61	Message	A/B pattern error #2	
Description	Encoder #2: A/B pattern error, probably EMC problem			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5008-70	Message	Gearbox error #1	
Description	Encoder #1: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings

Code	5008-71	Message	Gearbox error #2	
Description	Encoder #2: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5008-72	Message	Gearbox error #3	
Description	Encoder #3: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5008-73	Message	Gearbox error #4	
Description	Encoder #4: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5008-74	Message	Gearbox error #1	
Description	EtherCAT enc. #1: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

	<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings
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Code	5008-75	Message	Gearbox error #2	
Description	EtherCAT enc. #2: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5008-76	Message	Gearbox error #3	
Description	EtherCAT enc. #3: Gearbox error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5008-80	Message	Position cal err #1	
Description	Encoder #1: (Absolute) position calculation error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 		

	<ul style="list-style-type: none"> • Try switching AbsInitMode to 1.
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5008-81	Message	Position cal err #2
Description	Encoder #2: (Absolute) position calculation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 	
		<ul style="list-style-type: none"> • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		

Code	5008-82	Message	Position cal err #3
Description	Encoder #3: (Absolute) position calculation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 	

	<ul style="list-style-type: none"> • Try switching AbsInitMode to 1.
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5008-83	Message	Position cal err #4
Description	Encoder #4: (Absolute) position calculation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 	
		<ul style="list-style-type: none"> • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		

Code	5008-84	Message	Position cal err #1
Description	EtherCAT enc. #1: (Absolute) position calculation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 	

	<ul style="list-style-type: none"> • Try switching AbsInitMode to 1.
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5008-85	Message	Position cal err #2	
Description	EtherCAT enc. #2: (Absolute) position calculation error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 		
		<ul style="list-style-type: none"> • Try switching AbsInitMode to 1. 		
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 			

Code	5008-86	Message	Position cal err #3	
Description	EtherCAT enc. #3: (Absolute) position calculation error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings 		

	<ul style="list-style-type: none"> • Try switching AbsInitMode to 1.
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5008-90	Message	Lost connection #1
Description	Encoder #1 lost connection		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5008-91	Message	Lost connection #2
Description	Encoder #2 lost connection		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
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	5008-92	Message	Lost connection #3	
Description	Encoder #3 lost connection			
Monitoring	Periodically checking		Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

	5008-94	Message	Status bit release#1	
Description	EtherCAT enc. #1: status bit released			
Monitoring	Periodically checking		Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings 		
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.

Code	5008-95	Message	Status bit release#2
Description	EtherCAT enc. #2: status bit released		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
<p>The encoder is not connected or not working properly.</p>	<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.

Code	5008-96	Message	Status bit release#3
Description	EtherCAT enc. #3: status bit released		
Monitoring	Periodically checking	Alarm Level	2

Influence	Robot operation stopping, unable to both handle JOG and execute program	
	Causes	Measures
		<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.

Code	5008-100	Message	TTL error #1	
Description	Encoder #1 TTL error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
	Causes	Measures		
		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
Code	5008-101	Message	TTL error #2	

Description	Encoder #2 TTL error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5008-110	Message	No support encoder#1
Description	Hardware does not support encoder #1		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5008-111	Message	No support encoder#2
Description	Hardware does not support encoder #2		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware.
This is possibly a hardware issue.	<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module

Code	5008-112	Message	No support encoder#3
Description	Hardware does not support encoder #3		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module 	

Code	5008-124	Message	Used another axis #1
Description	EtherCAT enc. #1 is in use by another axis		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 	

Code	5008-125	Message	Used another axis #2
Description	EtherCAT enc. #2 is in use by another axis		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis.
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Code	5008-126	Message	Used another axis #3
Description	EtherCAT enc. #3 is in use by another axis		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 	

Code	5008-134	Message	EtherCAT enc err #1
Description	EtherCAT enc. #1 error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin Check cabling. If available, please try another encoder and cable. See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> Please check the device cabling for proper connection. Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> Please check the EtherCAT connection. Try to replace the cables. Please try to reduce computational load on the master. Try to increase the master cycle time. 	

Code	5008-135	Message	EtherCAT enc err #2
Description	EtherCAT enc. #2 error		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5008-136	Message	EtherCAT enc err #3
Description	EtherCAT enc. #3 error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5008-140	Message	ABS encoder error #1
Description	Encoder #1: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-141	Message	ABS encoder error #2
Description	Encoder #2: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-142	Message	ABS encoder error #3
Description	Encoder #3: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5008-143	Message	ABS encoder error #4
Description	Encoder #4: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-144	Message	ABS encoder error #1
Description	EtherCAT enc. #1: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, 	

	please attach the current project file and message log.
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Code	5008-145	Message	ABS encoder error #2
Description	EtherCAT enc. #2: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-146	Message	ABS encoder error #3
Description	EtherCAT enc. #3: Absolute encoder simulation: Initialisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-150	Message	Backup inform err #1
Description	Encoder #1: Backup information not valid		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-151	Message	Backup inform err #2
Description	Encoder #2: Backup information not valid		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-152	Message	Backup inform err #3
Description	Encoder #3: Backup information not valid		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5008-153	Message	Backup inform err #4	
Description	Encoder #4: Backup position not valid			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-154	Message	Backup position er#1	
Description	EtherCAT enc. #1: Backup position not valid			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-155	Message	Backup position er#2	
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Description	EtherCAT enc. #2: Backup position not valid		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-156	Message	Backup position er#3
Description	EtherCAT enc. #3: Backup position not valid		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-160	Message	Position out range#1
Description	Encoder #1 position out of range, motor was moved		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Quit error, and repeat homing
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5008-161	Message	Position out range#2
Description	Encoder #2 position out of range, motor was moved		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-162	Message	Position out range#3
Description	Encoder #3 position out of range, motor was moved		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, 	

	please attach the current project file and message log.
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Code	5008-163	Message	Position out range#4
Description	Encoder #4 position out of range, motor was moved		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-164	Message	Position out range#1
Description	EtherCAT enc. #1 position out of range, motor was moved		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-165	Message	Position out range#2
Description	EtherCAT enc. #2 position out of range, motor was moved		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-166	Message	Position out range#3
Description	EtherCAT enc. #3 position out of range, motor was moved		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-170	Message	Serial num change #1
Description	Encoder #1 serial number changed, motor was replaced		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	

The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5008-171	Message	Serial num change #2	
Description	Encoder #2 serial number changed, motor was replaced			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-172	Message	Serial num change #3	
Description	Encoder #3 serial number changed, motor was replaced			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-173	Message	Serial num change #4	
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Description	Encoder #4 serial number changed, motor was replaced		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-174	Message	Serial num change #1
Description	EtherCAT enc. #1 serial number changed, motor was replaced.		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5008-175	Message	Serial num change #2
Description	EtherCAT enc. #2 serial number changed, motor was replaced.		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5008-176	Message	Serial num change #3	
Description	EtherCAT enc. #3 serial number changed, motor was replaced.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-180	Message	Hiperface DSL err #1	
Description	Encoder #1 Hiperface DSL error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
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Code	5008-182	Message	Hiperface DSL err #3	
Description	Encoder #3 Hiperface DSL error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
<p>The encoder is not connected or not working properly.</p>	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5008-210	Message	SD encoder error	
Description	Encoder: SD encoder error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
<p>The encoder is not connected or not working properly.</p>	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5008-220	Message	Multiturn pos lost#1
Description	Encoder #1: Battery low, multiturn position is lost		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5008-221	Message	Multiturn pos lost#2
Description	Encoder #2: Battery low, multiturn position is lost		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5008-222	Message	Multiturn pos lost#3
Description	Encoder #3: Battery low, multiturn position is lost		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5008-230	Message	SmartAbs encoder err	
Description	Encoder #1: SmartAbs encoder error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

Code	5008-240	Message	Encoder para err #1	
Description	Encoder #1 Parameter error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 		

Code	5008-241	Message	Encoder para err #2	
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Description	Encoder #2 Parameter error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5008-242	Message	Encoder para err #3
Description	Encoder #3 Parameter error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5008-243	Message	Encoder para err #4
Description	Encoder #4 Parameter error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5008-250	Message	BISS protocol error
Description	Encoder #1: BISS protocol error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

<p>The encoder is not connected or not working properly.</p>	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5008-260	Message	Power off op state#1	
Description	Encoder #1: Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-261	Message	Power off op state#2	
Description	Encoder #2: Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		

The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5008-262	Message	Power off op state#3	
Description	Encoder #3: Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-263	Message	Power off op state#4	
Description	Encoder #4: Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-264	Message	Power off op state#1	
Description	EtherCAT enc.: #1 Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-265	Message	Power off op state#2	
Description	EtherCAT enc. #2: Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5008-266	Message	Power off op state#3	
Description	EtherCAT enc. #3: Axis module was powered off in operation enabled state. Homing backup not available.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5009-0	Message	Unknown Timing Error
Description	Unknown Timing Error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
Computational load in time-critical task of axis module is too high.	<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control.
The device was probably disconnected from the master controller, or the master is overloaded.	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5009-1	Message	DMA timing error
Description	DMA timing error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes	Measures		

Computational load in time-critical task of axis module is too high.	<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control.
The device was probably disconnected from the master controller, or the master is overloaded.	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5009-2	Message	Task sequence error
Description	Task sequence timing error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
Computational load in time-critical task of axis module is too high.		<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5009-3	Message	Internal sync error
Description	Internal state synchronisation error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

Computational load in time-critical task of axis module is too high.	<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control.
The device was probably disconnected from the master controller, or the master is overloaded.	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5009-4	Message	Internal register er
Description	Internal register access error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
Computational load in time-critical task of axis module is too high.		<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5009-5	Message	Motion task time err
Description	Motion task timing error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

Computational load in time-critical task of axis module is too high.	<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5009-6	Message	Slow task timing err
Description	Slow task timing error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
Computational load in time-critical task of axis module is too high.		<ul style="list-style-type: none"> • Please reduce computational load by removing parameters from mapping. • De-activate features of control system or motion control. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5010-0	Message	General overcurrent
Description	General overcurrent		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. 	

	<ul style="list-style-type: none"> • Consider using an axis module with higher current rating.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5010-1	Message	Hardware overcurrent	
Description	Hardware overcurrent detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		
Code	5010-2	Message	Software overcurrent	

Description	Software overcurrent detected		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5010-3	Message	Inverter error
Description	Inverter error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. 	

	<ul style="list-style-type: none"> • Consider using an axis module with higher current rating.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5010-4	Message	DC overcurrent	
Description	DC overcurrent detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5010-6	Message	Poser stage overload	
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Description	Power stage high overload I2T limit exceeded		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5010-7	Message	Maximum current err
Description	Actual current exceeds motor maximum current		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. 	

	<ul style="list-style-type: none"> • Consider using an axis module with higher current rating.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5010-8	Message	Motor wirebreak err	
Description	Motor wirebreak detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • A motor wire-break was detected. Please check motor connection. 		
		<ul style="list-style-type: none"> • Please check parameter CON_MPCHK. Make a scope record with the motor's phase currents. 		

	<p>Caution is required for electric shock when checking the supply voltage due to the alarm above.</p>
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Code	5010-9	Message	Sum current too high	
Description	Sum current u+v+w too high, possible short circuit to ground			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current 		

	<ul style="list-style-type: none"> range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module



Caution is required for electric shock when checking the supply voltage due to the alarm above.

Code	5011-0	Message	I2T limit exceeded	
Description	I2T limit exceeded (device protection)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • The long-term r.m.s current is too high. Reduce load or consider using a larger device. 		
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 		

Code	5011-1	Message	I2T limit exceeded	
Description	I2T limit exceeded (device protection)			
Monitoring	Periodically checking	Alarm	2	

		Level
Influence	Robot operation stopping, unable to both handle JOG and execute program	
Causes		Measures
		<ul style="list-style-type: none"> • The long-term r.m.s current is too high. Reduce load or consider using a larger device.
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating.

Code	5012-0	Message	I2T limit exceeded
Description	I2T limit exceeded (device protection)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The long-term r.m.s current is too high. Reduce load or consider using a larger device. 	
		<ul style="list-style-type: none"> • Please check motor protection settings 	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. 	

	<ul style="list-style-type: none"> • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating.
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Code	5012-1	Message	I2T limit exceeded
Description	I2T limit exceeded (device protection)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • The long-term r.m.s current is too high. Reduce load or consider using a larger device. 	
		<ul style="list-style-type: none"> • Please check motor protection settings 	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	

Code	5013-0	Message	Motion control error
Description	General Motion control error		
Monitoring	Periodically checking	Alarm Level	1
Influence	Robot operation stopping		

Causes		Measures	
		<ul style="list-style-type: none"> • Quit error and start again 	

This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
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Code	5013-1	Message	To many point command	
Description	Set of set points: Stack overflow, to many set points commanded			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
		<ul style="list-style-type: none"> • Please re-view master PLC program. 		

Code	5013-2	Message	Software limit	
Description	Software limit switch would be violated by new profile mode command. Command is discarded.			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check position limitation and reference value 		

Code	5013-3	Message	Failed to move axis	
Description	Failed to move axis to TargetPosition: distance too large			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check auto-commutation settings. Consider using method with minimum movement. 		

			<ul style="list-style-type: none"> • Consider raising the position tracking error threshold, or changing EnOpOPC to FORCE.
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Code	5014-0	Message	Over voltage detect
Description	Over voltage detected		
Monitoring	Periodically checking	Alarm Level	3
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An over-voltage occurred.		<ul style="list-style-type: none"> • Please check if the actual grid voltage matches the supply setting (parameter PST_VoltageSupply) • Over-voltage may be caused by a decelerating axis, possibly with high inertia. Reduce deceleration ramp. • Consider using a braking resistor with higher power. If the supply unit has an internal braking resistor, please contact your service partner 	



Caution is required for electric shock when checking the supply voltage due to the alarm above.

Code	5014-1	Message	Over voltage detect
Description	Device monitoring: Over voltage detected		
Monitoring	Periodically checking	Alarm Level	3
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An over-voltage occurred.		<ul style="list-style-type: none"> • Please check if the actual grid voltage matches the supply setting (parameter PST_VoltageSupply) • Over-voltage may be caused by a decelerating axis, possibly with high inertia. Reduce deceleration ramp. • Consider using a braking resistor with higher power. If the supply unit has an internal braking resistor, please contact your service partner 	



Caution is required for electric shock when checking the supply voltage due to the alarm above.

Code	5014-2	Message	DC link out of range
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Description	DC link center out of range		
Monitoring	Periodically checking	Alarm Level	3
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • This axis module seems to be broken. Switch off power supply and replace it. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5015-0	Message	Under voltage detect
Description	Under voltage detected		
Monitoring	Periodically checking	Alarm Level	3
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An under-voltage occurred on the drive while this axis was switched on.		<ul style="list-style-type: none"> • Power supply was possibly switched off. • Please check if the actual grid voltage matches the supply setting (parameter PST_VoltageSupply) • Verify that the grid is stable under load condition. 	

Code	5015-1	Message	Under voltage detect
Description	Device monitoring: Under voltage detected		
Monitoring	Periodically checking	Alarm Level	3
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An under-voltage occurred on the drive while this axis was switched on.		<ul style="list-style-type: none"> • Power supply was possibly switched off. • Please check if the actual grid voltage matches the supply setting (parameter PST_VoltageSupply) • Verify that the grid is stable under load condition. 	

Code	5016-0	Message	Speed limit error
Description	Speed limit error		
Monitoring	Periodically checking	Alarm Level	1

Influence	Robot operation stopping	
	Causes	Measures
	The control system failed to track the reference value	<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced.
	The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
	This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5016-1	Message	Max speed detected	
Description	Max. speed difference detected			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
	Causes	Measures		
	The control system failed to track the reference value	<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced. 		
	The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation. 		

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
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Code	5016-2	Message	Max speed detected	
Description	Max. speed detected			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			

Causes	Measures
<p>The control system failed to track the reference value</p>	<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced.
<p>The speed control might run away, most likely due to a wrong encoder offset.</p>	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5016-3	Message	Speed difference err	
Description	Gantry mode: Speed difference between coupled axes is too high			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes	Measures			
	<ul style="list-style-type: none"> • Please check the gantry mode yaw control parameters. 			

	<ul style="list-style-type: none"> • Make sure there is no mechanical block in the gantry kinematics.
The control system failed to track the reference value	<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced.
The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5017-0	Message	Max pos difference	
Description	Max. position difference detected			
Monitoring	Periodically checking	Alarm Level	1	
Influence	Robot operation stopping			
Causes		Measures		
		<ul style="list-style-type: none"> • The position tracking error is too high. This limit is usually defined according to process requirements. 		
The control system failed to track the reference value		<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure 		

	external speed limitation, or increase speed control gain for stronger limitation.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5017-1	Message	Max pos difference
Description	Max. position difference detected		
Monitoring	Periodically checking	Alarm Level	1
Influence	Robot operation stopping		

Causes	Measures
	<ul style="list-style-type: none"> • The position tracking error is too high. This limit is usually defined according to process requirements.
The control system failed to track the reference value	<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced.
The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5017-2	Message	Pos difference error
Description	Gantry mode: Position difference between coupled axes is too high		
Monitoring	Periodically checking	Alarm Level	1

Influence	Robot operation stopping	
	Causes	Measures
		<ul style="list-style-type: none"> • Please check the gantry mode yaw control parameters. • Make sure there is no mechanical block in the gantry kinematics.
The control system failed to track the reference value		<ul style="list-style-type: none"> • Please check if the axis is blocked. • Try to reduce acceleration or deceleration. • If reference speed is higher than the motor rated speed, please check field weakening settings. In field-weakening range, the available torque per current is reduced.
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length.

Code	5018-0	Message	Over temperature	
Description	Overtemperature Detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
	Causes	Measures		
		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce output power or switching frequency. • This error may also be caused by other axes of this device. 		
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable 		

	<p>automatic frequency selection.</p> <ul style="list-style-type: none"> • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5018-1	Message	High in temperature
Description	Interior temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce output power or switching frequency. • This error may also be caused by other axes of this device. 	
		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5018-2	Message	High power temp
Description	Power stage temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce output power or switching frequency. • This error may also be caused by other axes of this device. 	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5019-0	Message	Cross comm error
Description	Cross communication: Error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the cross communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware 	

	<ul style="list-style-type: none"> • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross communication.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5019-1	Message	Cross comm error	
Description	Cross communication: Enumeration error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An error occurred on the cross communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross communication. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5019-2	Message	Cross comm error	
Description	Cross communication: Physical layer error			

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the cross communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross communication. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5019-3	Message	Firmware loader error	
Description	Supply unit firmware loader error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An error occurred on the cross communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross communication. 		

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
<p>This is possibly a hardware issue.</p>	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5020-0	Message	Unspecified I/O err	
Description	Unspecified I/O error occurred			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
<p>This is possibly a hardware issue.</p>		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5020-1	Message	Power controller err	
Description	Power stage controller framing error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check 24V supply for short-time power loss. 		
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5020-2	Message	Power controller err
Description	Power stage controller checksum error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check 24V supply for short-time power loss. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5020-3	Message	Power controller err
Description	Power stage controller I/O error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Please check 24V supply for short-time power loss.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5020-4	Message	Power controller err	
Description	Initialization of power stage parameters failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5020-5	Message	Supply para init err	
Description	Initialization of supply parameters failed			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5021-0	Message	Unspecified brake er	
Description	Unspecified motor brake error occurred			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5021-1	Message	Unspecified brake er	
Description	Motor brake wire break detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check the wiring of the motor brake. 		

Code	5021-2	Message	Brake not release	
Description	Motor brake not released though release requested			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

	<ul style="list-style-type: none"> • Please increase the motor brake lift time.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5021-3	Message	Brake current limit	
Description	Brake check: Current reached limit.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • If possible, increase the current limit. Consider using lower switching frequency. 		

Code	5021-4	Message	Brake torque limit	
Description	Brake check: Reached torque limit			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • if possible, increase the torque limit 		

Code	5021-5	Message	Brake interrupt user	
Description	Brake check interrupted by user.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • MPRO_BRK_CK_Control bit 15 was reset 		

Code	5021-6	Message	Brake wrong mode	
Description	Brake Check: wrong mode			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> Exactly one bit in Parameter MPRO_BRK_CK_Control/ MODE field can be set 		

Code	5021-7	Message	Brake no direction	
Description	Brake Check: no direction defined			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> Exactly one bit in Parameter MPRO_BRK_CK_Control/ Dir field can be set 		

Code	5021-8	Message	Brake grind timeout	
Description	Brake Check: Grind in timeout			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> Increase timeout setting in Parameter GrindTO 		

Code	5021-9	Message	Brake power off	
Description	Brake Check: power stage off			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

	• Enable control
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Code	5021-10	Message	Safe brake test fail
Description	Brake Check: Safe brake test failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		• Please check settings of the brake test, in both functional settings and SafePLC program	

	5021-5	Message	No rated trq define
Description	Brake Check: no rated torque defined		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		• Please check settings of the brake test, in both functional settings and SafePLC program	

Code	ServoHalt	Message	Error 22-TITLE
Description	Encoder error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

Code	5022-0	Message	General encoder err
Description	General encoder error (Encoder error during initialization)		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check encoder settings and connected encoders of this axis 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5022-11	Message	Encoder offset err
Description	Encoder offset detection failed (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check encoder settings and connected encoders of this axis 	
Auto commutation might not be working properly.		<ul style="list-style-type: none"> • Please check the encoder speed and direction, and motor pole pairs. • Check auto commutation parameters. • Make a scope record with scope values 24, 25, 21, 1009. 	

Code	5022-12	Message	Different motor type
Description	Motor was replaced with different motor type (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, load new motor nameplate manually, and tune parameters for application • If motor change guarding is not intended, please see "encoder special function" 	

Code	5022-13	Message	Unknown motor type	
Description	Motor was replaced with unknown motor type (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Execute a factory reset, and load motor parameter set • If motor change guarding is not intended, please see "encoder special function" 		

Code	5022-14	Message	Acquire position err	
Description	Encoder #1: Cannot acquire position because motor is moving (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Stop motor mechanically and quit error 		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description. 		

Code	5022-15	Message	Encoder no distance	
Description	Position encoder has no distance-coded zero pulses, or wrong parameter setting (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter setting of encoder. DistCodeA and DistCodeB must be set. • Use a different homing method 		

Code	5022-20	Message	SSI error	
Description	Encoder: SSI error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

Code	5022-30	Message	ENDAT protocol error	
Description	Encoder: ENDAT protocol error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

Code	5022-42	Message	H-F protocol error	
Description	Encoder: Hiperface protocol error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5022-50	Message	Internal comm err #1
Description	Encoder #1: Internal communication error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5022-51	Message	Internal comm err #2
Description	Encoder #2: Internal communication error (Encoder error during initialization)		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5022-52	Message	Internal comm err #3
Description	Encoder #3: Internal communication error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
<p>This is possibly a hardware issue.</p>	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5022-53	Message	Internal comm err #4
Description	Encoder #4: Internal communication error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is probably a software issue.</p>		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
<p>This is possibly a hardware issue.</p>		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5022-60	Message	A/B pattern error #1
Description	Encoder #1: A/B pattern error, probably EMC problem (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5022-61	Message	A/B pattern error #2
Description	Encoder #2: A/B pattern error, probably EMC problem (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5022-70	Message	Gearbox error #1
Description	Encoder #1: Gearbox error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes	Measures		

	<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings
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Code	5022-71	Message	Gearbox error #2	
Description	Encoder #2: Gearbox error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5022-72	Message	Gearbox error #3	
Description	Encoder #3: Gearbox error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5022-73	Message	Gearbox error #4	
Description	Encoder #4: Gearbox error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 		

Code	5022-74	Message	Gearbox error #1	
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Description	EtherCAT enc. #1: Gearbox error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 	

Code	5022-75	Message	Gearbox error #2
Description	EtherCAT enc. #2: Gearbox error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 	

Code	5022-76	Message	Gearbox error #3
Description	EtherCAT enc. #3: Gearbox error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings 	

Code	5022-80	Message	Position cal err #1
Description	Encoder #1: (Absolute) position calculation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1.
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5022-81	Message	Position cal err #2
Description	Encoder #2: (Absolute) position calculation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5022-82	Message	Position cal err #3
Description	Encoder #3: (Absolute) position calculation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more 	

	detailed description.
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Code	5022-83	Message	Position cal err #4
Description	Encoder #4: (Absolute) position calculation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5022-84	Message	Position cal err #1
Description	EtherCAT enc. #1: (Absolute) position calculation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5022-85	Message	Position cal err #2
Description	EtherCAT enc. #2: (Absolute) position calculation error (Encoder error during		

	initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description. 	

Code	5022-86	Message	Position cal err #3
Description	EtherCAT enc. #3: (Absolute) position calculation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description. 	

Code	5022-90	Message	Lost connection #1
Description	Encoder #1 lost connection (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

<p>The encoder is not connected or not working properly.</p>	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5022-91	Message	Lost connection #2
Description	Encoder #2 lost connection (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5022-92	Message	Lost connection #3
Description	Encoder #3 lost connection (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
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Code	5022-94	Message	Status bit release#1
Description	EtherCAT enc. #1: status bit released (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings 	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5022-95	Message	Status bit release#2
Description	EtherCAT enc. #2: status bit released (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
The device was probably disconnected from the master controller, or the master is overloaded.	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.

Code	5022-96	Message	Status bit release#3
Description	EtherCAT enc. #3: status bit released (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.
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Code	5022-100	Message	TTL error #1
Description	Encoder #1 TTL error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5022-101	Message	TTL error #2
Description	Encoder #2 TTL error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5022-110	Message	No support encoder#1	
Description	Hardware does not support encoder #1 (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module 		

Code	5022-111	Message	No support encoder#2	
Description	Hardware does not support encoder #2 (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module 		

Code	5022-112	Message	No support encoder#3	
Description	Hardware does not support encoder #3 (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware 		

This is possibly a hardware issue.	<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module
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Code	5022-124	Message	Used another axis #1
Description	EtherCAT enc. #1 is in use by another axis (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 	

Code	5022-125	Message	Used another axis #2
Description	EtherCAT enc. #2 is in use by another axis (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 	

Code	5022-126	Message	Used another axis #3
Description	EtherCAT enc. #3 is in use by another axis (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 	

Code	5022-134	Message	EtherCAT enc err #1
Description	EtherCAT enc. #1 error (Encoder error during initialization)		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5022-135	Message	EtherCAT enc err #2
Description	EtherCAT enc. #2 error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5022-136	Message	EtherCAT enc err #3	
Description	EtherCAT enc. #3 error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (◇◇) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length. 		
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 		

Code	5022-140	Message	ABS encoder error #1	
Description	Encoder #1: Absolute encoder simulation: Initialisation error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-141	Message	ABS encoder error #2
Description	Encoder #2: Absolute encoder simulation: Initialisation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-142	Message	ABS encoder error #3
Description	Encoder #3: Absolute encoder simulation: Initialisation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-143	Message	ABS encoder error #4
Description	Encoder #4: Absolute encoder simulation: Initialisation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-144	Message	ABS encoder error #1
Description	EtherCAT enc. #1: Absolute encoder simulation: Initialisation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-145	Message	ABS encoder error #2
Description	EtherCAT enc. #2: Absolute encoder simulation: Initialisation error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder.

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5022-146	Message	ABS encoder error #3	
Description	EtherCAT enc. #3: Absolute encoder simulation: Initialisation error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder. 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-150	Message	Backup inform err #1	
Description	Encoder #1: Backup information not valid (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-151	Message	Backup inform err #2
Description	Encoder #2: Backup information not valid (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-152	Message	Backup inform err #3
Description	Encoder #3: Backup information not valid (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-153	Message	Backup inform err #4
Description	Encoder #4: Backup information not valid (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Quit error, and repeat homing
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-154	Message	Backup position er#1
Description	EtherCAT enc. #1: Backup position not valid (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-155	Message	Backup position er#2
Description	EtherCAT enc. #2: Backup position not valid (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, 	

	please attach the current project file and message log.
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Code	5022-156	Message	Backup position er#3
Description	EtherCAT enc. #3: Backup position not valid (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-160	Message	Position out range#1
Description	Encoder #1 position out of range, motor was moved (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-161	Message	Position out range#2
Description	Encoder #2 position out of range, motor was moved (Encoder error during initialization)		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-162	Message	Position out range#3
Description	Encoder #3 position out of range, motor was moved (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-163	Message	Position out range#4
Description	Encoder #4 position out of range, motor was moved (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	

The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5022-164	Message	Position out range#1
Description	EtherCAT enc. #1 position out of range, motor was moved (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-165	Message	Position out range#2
Description	EtherCAT enc. #2 position out of range, motor was moved (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-166	Message	Position out range#3	
Description	EtherCAT enc. #3 position out of range, motor was moved (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-170	Message	Serial num change #1	
Description	Encoder #1 serial number changed, motor was replaced (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-171	Message	Serial num change #2	
Description	Encoder #2 serial number changed, motor was replaced (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-172	Message	Serial num change #3
Description	Encoder #3 serial number changed, motor was replaced (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-173	Message	Serial num change #4
Description	Encoder #4 serial number changed, motor was replaced (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5022-174	Message	Serial num change #1
Description	EtherCAT enc. #1 serial number changed, motor was replaced (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-175	Message	Serial num change #2
Description	EtherCAT enc. #2 serial number changed, motor was replaced (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-176	Message	Serial num change #3
Description	EtherCAT enc. #3 serial number changed, motor was replaced (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-180	Message	Hiperface DSL err #1
Description	Encoder #1 Hiperface DSL error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5022-182	Message	Hiperface DSL err #3
Description	Encoder #3 Hiperface DSL error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5022-210	Message	SD encoder error
Description	Encoder: SD encoder error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5022-220	Message	Multiturn pos lost#1
Description	Encoder #1: Battery low, multiturn position is lost (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing

The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
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Code	5022-221	Message	Multiturn pos lost#2
Description	Encoder #2: Battery low, multiturn position is lost (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5022-222	Message	Multiturn pos lost#3
Description	Encoder #3: Battery low, multiturn position is lost (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5022-230	Message	SmartAbs encoder err	
Description	Encoder #1: SmartAbs encoder error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		

Code	5022-240	Message	Encoder para err #1	
Description	Encoder #1 Parameter error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 		

Code	5022-241	Message	Encoder para err #2	
Description	Encoder #2 Parameter error (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 		

Code	5022-242	Message	Encoder para err #3
Description	Encoder #3 Parameter error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5022-243	Message	Encoder para err #4
Description	Encoder #4 Parameter error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5022-250	Message	BISS protocol error
Description	Encoder #1: BISS protocol error (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5022-260	Message	Power off op state#1	
Description	Encoder #1: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-261	Message	Power off op state#2	
Description	Encoder #2: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5022-262	Message	Power off op state#3	
Description	Encoder #3: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-263	Message	Power off op state#4
Description	Encoder #4: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5022-264	Message	Power off op state#1
Description	EtherCAT enc.: #1 Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing.

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5022-265	Message	Power off op state#2
Description	EtherCAT enc.: #2 Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5022-266	Message	Power off op state#3
Description	EtherCAT enc.: #3 Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error during initialization)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5023-0	Message	Unspecified homing	
Description	Unspecified homing error occurred			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
There is a problem with the digital inputs		<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
Code	5023-1	Message	Limit switch changed	
Description	Homing error: Limit switches interchanged			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check limit switches 		
There is a problem with the digital inputs		<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 		
Code	5023-2	Message	Unexpect home switch	
Description	Homing error: Unexpected home switch event			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Please check home switch.
There is a problem with the digital inputs	<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5023-3	Message	Limit switch event
Description	Homing error: Error limit switch event		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Please check limit switches.
There is a problem with the digital inputs	<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5023-4	Message	Unknown homing rules
Description	Homing error: Unknown homing method		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes	Measures		

	<ul style="list-style-type: none"> • Please use a different homing method.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5023-5	Message	Not defined method	
Description	Homing error: Method is not defined in motionprofile			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please use a different homing method. 		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5023-6	Message	Drive not ready	
Description	Homing error: Drive not ready, missing motor standstill			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please set motor to standstill. Please check standstill window (position limitation topic) 		

Code	5023-7	Message	Drive not ready	
Description	Homing error: Drive not ready, missing operational or motor standstill			
Monitoring	Periodically checking	Alarm Level	2	

Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please set motor to standstill and operational. Please check standstill window (position limitation topic). 	

Code	5023-8	Message	Drive not ready
Description	Homing error: Drive not ready, wrong control mode		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Homing is only supported in position control mode. 	

Code	5023-9	Message	Encoder init failed
Description	Homing error: Encoder initialisation failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The homing function during start-up failed due to an internal error 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5023-10	Message	Max distance overrun
Description	Homing error: Homing distance control, maximum distance overrun		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • The index pulse was not reached within the given distance. Please check the encoder's index pulse configuration and max. distance parameter. • Please check if the encoder is working correctly.
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Code	5023-11	Message	Bakup position fail
Description	Homing error: Restore position with backup position failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Reset error, save setting, and repeat homing. 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5023-12	Message	Bakup position fail
Description	Homing error: Backup position not valid		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Reset error, save setting, and repeat homing. 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5023-13	Message	Encoder not init
Description	Homing error: Encoder not initialised with changed data set		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Initialise encoder first 	

Code	5024-0	Message	Unspecified error
Description	Supply unit: Unspecified error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the cross-communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware. • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross-communication. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5024-1	Message	Fast error signal
Description	Supply error, from fast error signal		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the cross-communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector 	

	(whichever applies) must remain open. <ul style="list-style-type: none"> • All axis modules on a cross communication should run the same firmware. • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross-communication.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5024-2	Message	Above chopper limit
Description	Supply unit: Line voltage above chopper limit		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Nominal voltage in para 602.0 is lower than detected grid voltage. Check nominal voltage and grid connection 	

Code	5024-5	Message	Cross comm failed
Description	Supply unit: Cross communication failed		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the cross-communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware. • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross-communication. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to 	

connecting DC link power supply.	a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	• If other measures fail to solve the problem, please replace the axis module

Code	5024-7	Message	24V Power supply err	
Description	Supply unit: Error in 24V power supply unit			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes		Measures	
		<ul style="list-style-type: none"> • Communication to the 24V supply print is missing. Check if the supply unit features a 24V supply. • Check parameter 702-5. 	
<p>An error occurred on the cross-communication line.</p>		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware. • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross-communication. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
<p>This is possibly a hardware issue,</p>		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5024-14	Message	DC link symmetry er	
Description	Supply unit: DC link symmetry error from an inverter module			
Monitoring	Periodically checking	Alarm	2	

		Level	
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check the axis modules for errors. 	
This is possibly a hardware issue,		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5024-15	Message	Internal error
Description	Supply unit: Internal error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please contact your service partner and report the values of parameter 704.1, 28, 29 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly a hardware issue,		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5024-16	Message	DC link overvoltage
Description	Supply unit: DC link overvoltage		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • DC link voltage higher than defined in parameter 613.2. Check nominal voltage in para 602.0. Check brake resistor 	

An over-voltage occurred.	<ul style="list-style-type: none"> • Please check if the actual grid voltage matches the supply setting (parameter PST_VoltageSupply) • Over-voltage may be caused by a decelerating axis, possibly with high inertia. Reduce deceleration ramp. • Consider using a braking resistor with higher power. If the supply unit has an internal braking resistor, please contact your service partner
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	Caution is required for electric shock when checking the supply voltage due to the alarm above.
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Code	5024-24	Message	Brake resistor over
Description	Supply unit: Brake resistor overcurrent		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check brake resistor. Use chopper with higher resistance. 	

Code	5024-25	Message	L1, L3 lost
Description	Supply unit: Grid phase L1 or L3 lost longer than 20ms during startup		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check power switch. All 3 phases must be connected during preload. 	

Code	5024-27	Message	Undervoltage grid
Description	Supply unit: Undervoltage grid		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Grid voltage too low. Check grid connection and nominal voltage in para 602.0. This check is only performed once at the end of the preload phase.
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Code	5024-28	Message	Rectifier overload
Description	Supply unit: Rectifier Overload		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The calculated rectifier temperature exceeds the limit. Reduce peak current. 	

	<p>Caution is required for burning accident by over-heating in case of the alarm above.</p>
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Code	5024-29	Message	DC link balance err
Description	Supply unit: DC link voltage balance out of range		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The supply unit seems to be broken. Switch off power supply and replace it 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5024-30	Message	Short circuit detect
Description	Supply unit: Brake transistor or DC link short circuit detected		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Check DC link load. • Check DC link connection for short circuit.
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	Caution is required for electric shock when checking the supply voltage due to the alarm above.
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Code	5024-31	Message	Short ground detect	
Description	Supply unit: Short circuit to ground detected.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check DC link connection. • Check motor connection of all axes. 		

	Caution is required for electric shock when checking the supply voltage due to the alarm above.
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Code	5024-32	Message	IGBT short circuit	
Description	Supply unit: Load IGBT short circuit detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check brake resistor. Use lower resistance. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5024-33	Message	Brake resistor error	
Description	Supply unit: Brake resistor not connected			

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check brake resistor. Use lower resistance. 	

Code	5024-34	Message	Interior temp high
Description	Supply unit: Interior temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce output power of whole assemblage. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5024-35	Message	Cooler temp too high
Description	Supply unit: Cooler temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce output power of whole assemblage. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5024-36	Message	Protection trigger	
Description	Supply unit: Brake resistor P*t protection triggered			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Reduce deceleration in whole assemblage, esp. Axes with large mass. • Please check brake resistor protection settings. 		

Code	5024-37	Message	Interior temp high	
Description	Supply unit: 24V supply: interior temperature too high			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce 24V power consumption. • Reduce output power of whole assemblage. 		



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5024-41	Message	24V supply overload	
Description	Supply unit: 24V supply: overload			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check 24V power consumption for peaks. 		

Code	5024-44	Message	Cooler temp too high	
Description	Supply unit: 24V supply: cooler temperature too high			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check outside temperature and air flow. • Reduce 24V power consumption. • Reduce output power of whole assemblage. 		



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5024-45	Message	Brake resistor err	
Description	Supply unit: Brake resistor temperature switch triggered			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Reduce deceleration in whole assemblage, esp. Axes with large mass. • Please check brake resistor protection settings. 		

Code	5024-49	Message	DC link overload	
Description	Supply unit: DC link supply overload			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The DC line current on whole system was too high.		<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes. 		

Code	5024-52	Message	Emergency shutdown	
Description	Supply unit: Emergency shutdown detected			

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error is reported on the quick shutdown line.		<ul style="list-style-type: none"> • Please check the emergency line requirements in the instruction manual • Check errors on other modules connected to the emergency line • Check if any axis module in the system reports a critical error 	

Code	5024-53	Message	Chopper current low
Description	Supply unit: Chopper current too low		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The system needs a chopper resistor connected to the supply unit. Please check manual for allowable resistance range. • Check cabling of chopper resistor 	

Code	5024-54	Message	Chopper error
Description	Supply unit: Chopper current too low		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The system needs a chopper resistor connected to the supply unit. Please check manual for allowable resistance range. • Check cabling of chopper resistor 	

Code	5024-55	Message	Grid choke temp err
Description	Supply unit: grid choke temperature		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Temperature protection switch for grit choke has triggered. Check cabling of chopper resistor • If protection switch is not needed, please check parameter P717.0
The DC line current on whole system was too high.	<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes.

Code	5025-0	Message	Motor temp too high
Description	Motor temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
The motor temperature is too high.		<ul style="list-style-type: none"> • Please let the motor cool down. • Please check motor temperature and motor temperature resistance (PTC sensors do not report the motor temperature). If the values are not plausible, check cables and sensor type. • If you are not using a system motor, please check with the motor manufacturer if the motor can stand a higher temperature 	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5025-1	Message	Max motor temp
Description	Motor temperature reached TMax value		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The motor temperature is too high.		<ul style="list-style-type: none"> • Please let the motor cool down. • Please check motor temperature and motor temperature resistance (PTC sensors do not report the motor temperature). If the values are not plausible, check cables and sensor type. • If you are not using a system motor, please check with the motor manufacturer if the motor can stand a higher temperature 	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5025-2	Message	Motor temp too high
Description	Motor temperature too high (PTC/ TSS)		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The motor temperature is too high.		<ul style="list-style-type: none"> • Please let the motor cool down. • Please check motor temperature and motor temperature resistance (PTC sensors do not report the motor temperature). If the values are not plausible, check cables and sensor type. • If you are not using a system motor, please check with the motor manufacturer if the motor can stand a higher temperature 	
An overcurrent was detected.		<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

	Caution is required for burning accident by over-heating in case of the alarm above.
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Code	5025-3	Message	PTC/TSS short	
Description	PTC/TSS short circuit detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

	<ul style="list-style-type: none"> • Please check cabling. • Consider using 'PTC without short circuit detection'
The motor temperature is too high.	<ul style="list-style-type: none"> • Please let the motor cool down. • Please check motor temperature and motor temperature resistance (PTC sensors do not report the motor temperature). If the values are not plausible, check cables and sensor type. • If you are not using a system motor, please check with the motor manufacturer if the motor can stand a higher temperature
An overcurrent was detected.	<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5025-4	Message	Encoder temp high	
Description	Encoder temperature too high			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The motor temperature is too high.		<ul style="list-style-type: none"> • Please let the motor cool down. • Please check motor temperature and motor temperature resistance (PTC sensors do not report the 		

	<p>motor temperature). If the values are not plausible, check cables and sensor type.</p> <ul style="list-style-type: none"> • If you are not using a system motor, please check with the motor manufacturer if the motor can stand a higher temperature
<p>An overcurrent was detected.</p>	<ul style="list-style-type: none"> • Please check current control settings and step response. • Check the motor's saturation settings (parameter MOT_LSigDiff). If the error occurred in high-current range, lower saturation values manually. • If possible, reduce the needed current, especially in low-frequency range. • If possible, lower the switching frequency or enable automatic frequency selection. • Check if the encoder offset is set properly. • Consider using an axis module with higher current rating.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length.

	<p>Caution is required for burning accident by over-heating in case of the alarm above.</p>
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Code	5025-5	Message	Motor temp inactive	
Description	Motor temperature source is not available or inactive			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check parameter setting of motor protection. 		

Code	5026-0	Message	Calibration error	
Description	Error during calibration. This error should not appear during normal operation.			
Monitoring	Periodically checking	Alarm Level	2	

Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5026-1	Message	Calibration error	
Description	Error during AFE calibration. This error should not appear during normal operation.			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 		

Code	5027-0	Message	Unspecified hardware	
Description	Unspecified hardware limit switch error occurred			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
There is a problem with the digital inputs		<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation. 		

Code	5027-1	Message	Unspecified hardware	
Description	Hardware limit switches interchanged			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check direction of movement and limit switch assignment 		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
There is a problem with the digital inputs		<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation. 		

Code	5027-2	Message	Unspecified hardware	
Description	Positive hardware limit switch (LSW_P) detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
There is a problem with the digital inputs		<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter. 		

The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
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Code	5027-3	Message	Unspecified hardware	
Description	Negative hardware limit switch (LSW_N) detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
There is a problem with the digital inputs		<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation. 		

Code	5028-0	Message	Unknown position err	
Description	Unknown position limit error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		

There is a problem with the digital inputs	<ul style="list-style-type: none"> • Please check the 24V I/O wiring, function assignment and inversion parameters. • Please check connected switches for chattering. Consider using the input filter.
The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.

Code	5028-1	Message	Negative limit err	
Description	Negative software limit switch is exceeded (negative position limit)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation. 		

Code	5028-2	Message	Positive limit err	
Description	Positive software limit switch is exceeded (positive position limit)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		

The speed control might run away, most likely due to a wrong encoder offset.	<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation.
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Code	5028-3	Message	Software limit err	
Description	Software limit switch overtravel detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control gain for stronger limitation. 		

Code	5028-4	Message	Position ref error	
Description	Position reference value out of range			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
Position was limited internally		<ul style="list-style-type: none"> • Please check factor group setting and position command. • Take a scope record to determine if the position control overshoots. 		
The speed control might run away, most likely due to a wrong encoder offset.		<ul style="list-style-type: none"> • Please check that the encoder offset is set properly. • If auto commutation is used, re-view the auto commutation setting and test under all possible conditions. • If torque mode is used, reduce torque, ensure external speed limitation, or increase speed control 		

	gain for stronger limitation.
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Code	5029-0	Message	Unknown lock error	
Description	Unknown lock violate error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The reference value violates a lock or limit switch.		<ul style="list-style-type: none"> • Please check reference values. If this axis is working in cyclic synchronous mode, make a scope record. • Check factor group settings. • Check mode of operation. 		

Code	5029-1	Message	New ref value lock	
Description	New reference value violates lock or limit switch			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The reference value violates a lock or limit switch.		<ul style="list-style-type: none"> • Please check reference values. If this axis is working in cyclic synchronous mode, make a scope record. • Check factor group settings. • Check mode of operation. 		

Code	5029-2	Message	Lock in positive	
Description	Lock in positive and(!) negative direction active			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check plausibility of limit switches and/or software limits 		
The reference value violates a lock or limit switch.		<ul style="list-style-type: none"> • Please check reference values. If this axis is working in cyclic synchronous mode, make a scope record. • Check factor group settings. • Check mode of operation. 		

Code	5029-3	Message	New ref value error	
Description	New reference value violates torque limit			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check plausibility of limit switches and/or software limits 		
The reference value violates a lock or limit switch.		<ul style="list-style-type: none"> • Please check reference values. If this axis is working in cyclic synchronous mode, make a scope record. • Check factor group settings. • Check mode of operation. 		

Code	5029-4	Message	New ref value error	
Description	New reference value violates position limits			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check plausibility of limit switches and/or software limits 		
The reference value violates a lock or limit switch.		<ul style="list-style-type: none"> • Please check reference values. If this axis is working in cyclic synchronous mode, make a scope record. • Check factor group settings. • Check mode of operation. 		

Code	5029-5	Message	New ref value error	
Description	New reference value violates speed limit or direction lock			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check plausibility of limit switches and/or software limits 		

The reference value violates a lock or limit switch.	<ul style="list-style-type: none"> • Please check reference values. If this axis is working in cyclic synchronous mode, make a scope record. • Check factor group settings. • Check mode of operation.
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Code	5030-0	Message	Unknown error	
Description	Unknown error reported by encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An error or warning was reported by the digital protocol encoder.		<ul style="list-style-type: none"> • Please check message log for further information. • Restart application (24V reset) and see if the error occurs again. • Please view encoder documentation or contact motor manufacturer. • If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'. 		

Code	5030-10	Message	Unknown error	
Description	Unknown error reported by ENDAT encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An error or warning was reported by the digital protocol encoder.		<ul style="list-style-type: none"> • Please check message log for further information. • Restart application (24V reset) and see if the error occurs again. • Please view encoder documentation or contact motor manufacturer. • If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'. 		

Code	5030-15	Message	Unknown error	
Description	Unknown error reported by SD encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

<p>An error or warning was reported by the digital protocol encoder.</p>	<ul style="list-style-type: none"> Please check message log for further information. Restart application (24V reset) and see if the error occurs again. Please view encoder documentation or contact motor manufacturer. If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'.
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Code	5030-20	Message	OVS by SD encoder	
Description	Overspeed reported by SD encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>An error or warning was reported by the digital protocol encoder.</p>		<ul style="list-style-type: none"> Please check message log for further information. Restart application (24V reset) and see if the error occurs again. Please view encoder documentation or contact motor manufacturer. If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'. 		

Code	5030-25	Message	Singleturn error	
Description	Singleturn position error (STERR) reported by SD encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>An error or warning was reported by the digital protocol encoder.</p>		<ul style="list-style-type: none"> Please check message log for further information. Restart application (24V reset) and see if the error occurs again. Please view encoder documentation or contact motor manufacturer. If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'. 		

Code	5030-30	Message	Multiturn error	
Description	Multiturn position error (PSERR) reported by SD encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
An error or warning was reported by the digital protocol encoder.	<ul style="list-style-type: none"> • Please check message log for further information. • Restart application (24V reset) and see if the error occurs again. • Please view encoder documentation or contact motor manufacturer. • If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'.

Code	5030-35	Message	Overtemperautre err	
Description	Overtemperature reported by SD encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An error or warning was reported by the digital protocol encoder.		<ul style="list-style-type: none"> • Please check message log for further information. • Restart application (24V reset) and see if the error occurs again. • Please view encoder documentation or contact motor manufacturer. • If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'. 		

	Caution is required for burning accident by over-heating in case of the alarm above.
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Code	5030-40	Message	Hardware err by BISS	
Description	Hardware error reported by BISS encoder			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An error or warning was reported by the digital protocol encoder.		<ul style="list-style-type: none"> • Please check message log for further information. • Restart application (24V reset) and see if the error occurs again. • Please view encoder documentation or contact motor manufacturer. • If encoder message guarding is not intended, please set the corresponding reaction parameter to 'Ignore'. 		

Code	5031-0	Message	Unknown tracking err	
Description	Unknown tracking error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The tracking function of the compensation table has triggered. This function is used to guard processspecific requirements.		<ul style="list-style-type: none"> • Please check axis for mechanical problems • Please check setting of the tracking function. 		

Code	5031-1	Message	Tracking error	
Description	Table #0 tracking error too large			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The tracking function of the compensation table has triggered. This function is used to guard processspecific requirements.		<ul style="list-style-type: none"> • Please check axis for mechanical problems • Please check setting of the tracking function. 		

Code	5031-2	Message	Tracking error	
Description	Table #1 tracking error too large			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The tracking function of the compensation table has triggered. This function is used to guard processspecific requirements.		<ul style="list-style-type: none"> • Please check axis for mechanical problems • Please check setting of the tracking function. 		

Code	5032-0	Message	Unknown control err	
Description	Unknown control initialization error			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		

<p>This issue is probably caused by an unsuitable parameter setting.</p>	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.
<p>This is probably a software issue.</p>	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.

Code	5032-1	Message	Field weakening err	
Description	Error of field weakening initialization			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		
<p>This issue is probably caused by an unsuitable parameter setting.</p>		<ul style="list-style-type: none"> • Check field weakening parameters 		
<p>This issue is probably caused by an unsuitable parameter setting.</p>		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 		

Code	5032-2	Message	Motor parameter err	
Description	Error in motor parameters/ asynchronous motor			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Causes		Measures		

	<ul style="list-style-type: none"> • Check motor electrical parameters
<p>This issue is probably caused by an unsuitable parameter setting.</p>	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.

Code	5032-3	Message	Motor parameter err
Description	Error in motor parameters		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		

Causes		Measures	
			<ul style="list-style-type: none"> • Check motor electrical parameters
<p>This issue is probably caused by an unsuitable parameter setting.</p>			<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.

Code	5032-4	Message	No motor type
Description	No motor type was specified		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		
Causes		Measures	

	<ul style="list-style-type: none"> • Check motor parameters
<p>This issue is probably caused by an unsuitable parameter setting.</p>	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.

Code	5032-5	Message	Motor simulation err
Description	Error initializing motor simulation		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		

Causes		Measures	
			<ul style="list-style-type: none"> • Check motor parameters
<p>This issue is probably caused by an unsuitable parameter setting.</p>			<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.

Code	5032-7	Message	Motor parameter err
Description	Error in motor parameters/ synchronous motor		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		
Causes		Measures	

	<ul style="list-style-type: none"> • Check motor electrical parameters
<p>This issue is probably caused by an unsuitable parameter setting.</p>	<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting.

Code	5032-8	Message	Motor parameter err
Description	Error in motor parameters/ asynchronous motor		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		

Causes		Measures	
		<ul style="list-style-type: none"> • Parameter IMag has to be set for asynchronous motor 	
<p>This issue is probably caused by an unsuitable parameter setting.</p>		<ul style="list-style-type: none"> • Save your parameter set for a later restore. • See 'history of parameter changes' and undo the latest change. • Please check your parameter set for implausible settings. • Please set device to factory setting, restart, and see if the error occurs again. • When reporting this error to your service partner, please include your device's parameter setting. 	

Code	5034-0	Message	Unspecified error
Description	STO: Unspecified error occurred		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

A diagnostic error occurred in the safety module.	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5034-1	Message	STO input sequence	
Description	STO input sequence, turn off both inputs			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5035-0	Message	Safety unknown fail	
Description	SD0 Safety unknown failure			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master 		

	configuration. <ul style="list-style-type: none"> • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-1	Message	Safety unknown fail
Description	SD0 Safety unknown failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-2	Message	Status data timeout
Description	SD0 Status data timeout		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	

This is possibly a hardware issue.	• If other measures fail to solve the problem, please replace the axis module
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Code	5035-3	Message	SF diagnostic error
Description	STO SF diagnostic error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		• If other measures fail to solve the problem, please replace the axis module	

Code	5035-4	Message	EFO diagnostic error
Description	STO EFO diagnostic error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		• The switch-on time of the external test pulses may be too short	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	

This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module
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Code	5035-5	Message	EF1 diagnostic error
Description	STO EF1 diagnostic error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Check safety master switch for chattering.
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A diagnostic error occurred in the safety module.	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
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This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module
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Code	5035-6	Message	STO diagnostic error
Description	STO diagnostic error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

A diagnostic error occurred in the safety module.	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
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This is possibly a hardware issue.	• If other measures fail to solve the problem, please replace the axis module
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Code	5035-7	Message	STO_TPI test failure	
Description	STO_TPI internal test pulse failure			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 		
This is possibly a hardware issue.		• If other measures fail to solve the problem, please replace the axis module		

Code	5035-8	Message	STO_TPX test failure	
Description	STO_TPX external test pulse failure			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 		
This is possibly a hardware issue.		• If other measures fail to solve the problem, please replace the axis module		

Code	5035-9	Message	STO_TIME failure
Description	STO_TIME internal failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-10	Message	STO SF OV
Description	STO SF OV: internal supply out of range		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-11	Message	STO_TPE frequency
Description	STO_TPF external signature frequency to high		
Monitoring	Periodically checking	Alarm Level	2

Influence	Robot operation stopping, unable to both handle JOG and execute program	
	Causes	Measures
		<ul style="list-style-type: none"> • Please check external test pulse frequency.
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-12	Message	STO input sequence	
Description	STO input sequence wrong			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
	Causes	Measures		
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5035-13	Message	STO EF OV failure	
Description	STO EF OV failure			
Monitoring	Periodically checking	Alarm Level	2	

Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-14	Message	SBC Master switch	
Description	SBC Master switch failure			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	5035-15	Message	SBC Master switch	
Description	SBC Master switch off			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

<p>A diagnostic error occurred in the safety module.</p>	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
<p>An error concerning 24V supply was reported</p>	<ul style="list-style-type: none"> • Check the source of the 24V supply. • Measure the exact voltage, and check limits in the instruction manual. • Check the supply voltage when switching on the system. • Check the supply voltage in special situations, esp. when the motor brakes are opening.
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length.
<p>This is possibly a hardware issue.</p>	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-16	Message	SBC Brake 1 failure	
Description	SBC Brake 1 failure			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check motor brake cabling for short circuit • The brake supply voltage might be too low. 		
<p>A diagnostic error occurred in the safety module.</p>	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 			

An error concerning 24V supply was reported	<ul style="list-style-type: none"> • Check the source of the 24V supply. • Measure the exact voltage, and check limits in the instruction manual. • Check the supply voltage when switching on the system. • Check the supply voltage in special situations, esp. when the motor brakes are opening.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-17	Message	SBC Brake 2 failure	
Description	SBC Brake 2 failure			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes		Measures	
		<ul style="list-style-type: none"> • Please check motor brake cabling for short circuit • The brake supply voltage might be too low. 	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-18	Message	SBC Brake 3 failure	
Description	SBC Brake 3 failure			
Monitoring	Periodically checking	Alarm	2	

		Level
Influence	Robot operation stopping, unable to both handle JOG and execute program	
Causes		Measures
		<ul style="list-style-type: none"> • Please check motor brake cabling for short circuit • The brake supply voltage might be too low.
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-19	Message	SBC Brake 1 off
Description	SBC Brake 1 off		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check motor brake cabling for short circuit • The brake supply voltage might be too low. 	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-20	Message	SBC Brake 2 off
Description	SBC Brake 2 off		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check motor brake cabling for short circuit • The brake supply voltage might be too low. 	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-21	Message	SBC Brake 3 off
Description	SBC Brake 3 off		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check motor brake cabling for short circuit • The brake supply voltage might be too low. 	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	

This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module
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Code	5035-22	Message	Internal pulse1 fail
Description	SBC internal pulse 1 failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check the motor brake and cabling. 	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-23	Message	Internal pulse2 fail
Description	SBC internal pulse 2 failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check the motor brake and cabling. 	
A diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. 	

	<ul style="list-style-type: none"> • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-24	Message	Internal pulse3 fail
Description	SBC internal pulse 3 failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check the motor brake and cabling. 	
<p>A diagnostic error occurred in the safety module.</p>		<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5035-25	Message	Input sequence1 fail
Description	SBC input sequence 1 failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check the motor brake and cabling. 	

A diagnostic error occurred in the safety module.	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5035-26	Message	Input sequence2 fail
Description	SBC input sequence 2 failure		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Please check the motor brake and cabling. 	
A diagnostic error occurred in the safety module.	<ul style="list-style-type: none"> • To quit this error, it is necessary to restart the application (24V reset). • Please check the DIP switch setting. • Check the external STO cabling and safety master configuration. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. 		
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 		

Code	ServoHalt	Message	Error 36-TITLE
Description	Encoder error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

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Code	5036-0	Message	General encoder err
Description	General encoder error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check encoder settings and connected encoders of this axis. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	

Code	5036-11	Message	Encoder offset err
Description	Encoder offset detection failed (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
Auto commutation might not be working properly.		<ul style="list-style-type: none"> • Please check the encoder speed and direction, and motor pole pairs. • Check auto commutation parameters. • Make a scope record with scope values 24, 25, 21, 1009. 	

Code	5036-12	Message	Different motor type
Description	Motor was replaced with different motor type (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Quit error, load new motor nameplate manually, and tune parameters for application • If motor change guarding is not intended, please see "encoder special function"
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Code	5036-13	Message	Unknown motor type
Description	Motor was replaced with unknown motor type (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Execute a factory reset, and load motor parameter set • If motor change guarding is not intended, please see "encoder special function" 	

Code	5036-14	Message	Acquire position err
Description	Encoder #1: Cannot acquire position because motor is moving (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Stop motor mechanically and quit error 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5036-15	Message	Encoder no distance
Description	Position encoder has no distance-coded zero pulses, or wrong parameter setting (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Please check parameter setting of encoder. DistCodeA and DistCodeB must be set. • Use a different homing method
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Code	5036-20	Message	SSI error
Description	Encoder: SSI error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-30	Message	ENDAT protocol error
Description	Encoder: ENDAT protocol error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-42	Message	H-F protocol error
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Description	Encoder: Hiperface protocol error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-50	Message	Internal comm err #1
Description	Encoder #1: Internal communication error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5036-51	Message	Internal comm err #2
Description	Encoder #2: Internal communication error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5036-52	Message	Internal comm err #3
Description	Encoder #3: Internal communication error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5036-53	Message	Internal comm err #4
Description	Encoder #4: Internal communication error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is probably a software issue.	<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module

Code	5036-60	Message	A/B pattern error #1
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Description	Encoder #1: A/B pattern error, probably EMC problem (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-61	Message	A/B pattern error #2
Description	Encoder #2: A/B pattern error, probably EMC problem (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-70	Message	Gearbox error #1
Description	Encoder #1: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-71	Message	Gearbox error #2
Description	Encoder #2: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-72	Message	Gearbox error #3
Description	Encoder #3: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-73	Message	Gearbox error #4
Description	Encoder #4: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-74	Message	Gearbox error #1
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Description	EtherCAT #1: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-75	Message	Gearbox error #2
Description	EtherCAT #2: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-76	Message	Gearbox error #3
Description	EtherCAT #3: Gearbox error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check this encoder's gear ratio settings. 	

Code	5036-80	Message	Position cal err #1
Description	Encoder #1: (Absolute) position calculation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbslnitMode to 1.
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.

Code	5036-81	Message	Position cal err #2
Description	Encoder #2: (Absolute) position calculation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbslnitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5036-82	Message	Position cal err #3
Description	Encoder #3: (Absolute) position calculation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbslnitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more 	

	detailed description.
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Code	5036-83	Message	Position cal err #4
Description	Encoder #4: (Absolute) position calculation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5036-84	Message	Position cal err #1
Description	EtherCAT enc. #1: (Absolute) position calculation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5036-85	Message	Position cal err #2
Description	EtherCAT enc. #2: (Absolute) position calculation error (Encoder error while switched		

	off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

Code	5036-86	Message	Position cal err #3	
Description	EtherCAT enc. #3: (Absolute) position calculation error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Check line count and encoder gear ratio settings. • Try switching AbsInitMode to 1. 		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		

Code	5036-90	Message	Lost connection #1	
Description	Encoder #1 lost connection (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		

The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5036-91	Message	Lost connection #2
Description	Encoder #2 lost connection (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-92	Message	Lost connection #3
Description	Encoder #3 lost connection (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	

<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
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Code	5036-94	Message	Status bit release#1
Description	EtherCAT enc. #1: status bit released (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings 	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5036-95	Message	Status bit release#2
Description	EtherCAT enc. #2: status bit released (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.
The device was probably disconnected from the master controller, or the master is overloaded.	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.

Code	5036-96	Message	Status bit release#3
Description	EtherCAT enc. #3: status bit released (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Please check encoder wiring, field bus system, and master settings
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

<p>The device was probably disconnected from the master controller, or the master is overloaded.</p>	<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time.
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Code	5036-100	Message	TTL error #1
Description	Encoder #1 TTL error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-101	Message	TTL error #2
Description	Encoder #2 TTL error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder is not connected or not working properly.</p>		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
<p>This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.</p>		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-110	Message	No support encoder#1	
Description	Hardware does not support encoder #1 (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module 		

Code	5036-111	Message	No support encoder#2	
Description	Hardware does not support encoder #2 (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware. 		
This is possibly a hardware issue.		<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module 		

Code	5036-112	Message	No support encoder#3	
Description	Hardware does not support encoder #3 (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This axis module's hardware variant does not support the selected encoder channel/ type. Use a different encoder or contact your service partner for a different hardware. 		

This is possibly a hardware issue.	<ul style="list-style-type: none"> If other measures fail to solve the problem, please replace the axis module
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Code	5036-124	Message	Used another axis #1	
Description	EtherCAT enc. #1 is in use by another axis (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 		

Code	5036-125	Message	Used another axis #2	
Description	EtherCAT enc. #2 is in use by another axis (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 		

Code	5036-126	Message	Used another axis #3	
Description	EtherCAT enc. #3 is in use by another axis (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> This EtherCAT encoder channel was selected by two or three axes. Use a different channel for each axis. 		

Code	5036-134	Message	EtherCAT enc err #1	
Description	EtherCAT enc. #1 error (Encoder error while switched off)			

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5036-135	Message	EtherCAT enc err #2
Description	EtherCAT enc. #2 error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 	

Code	5036-136	Message	EtherCAT enc err #3	
Description	EtherCAT enc. #3 error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 		
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • Check motor grounding and motor cable length. 		
The device was probably disconnected from the master controller, or the master is overloaded.		<ul style="list-style-type: none"> • Please check the EtherCAT connection. Try to replace the cables. • Please try to reduce computational load on the master. • Try to increase the master cycle time. 		

Code	5036-140	Message	ABS encoder error #1	
Description	Encoder #1: Absolute encoder simulation: Initialisation error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-141	Message	ABS encoder error #2	
Description	Encoder #2: Absolute encoder simulation: Initialisation error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-142	Message	ABS encoder error #3	
Description	Encoder #3: Absolute encoder simulation: Initialisation error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> Absolute encoder simulation is not usable for this encoder. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> Please check the 'encoder special function' dialog and the message log for current state. Please read documentation of 'encoder special function'. When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-143	Message	ABS encoder error #4	
Description	Encoder #4: Absolute encoder simulation: Initialisation error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-144	Message	ABS encoder error #1
Description	EtherCAT enc. #1: Absolute encoder simulation: Initialisation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-145	Message	ABS encoder error #2
Description	EtherCAT enc. #2: Absolute encoder simulation: Initialisation error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder.

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5036-146	Message	ABS encoder error #3	
Description	EtherCAT enc. #3: Absolute encoder simulation: Initialisation error (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Absolute encoder simulation is not usable for this encoder. 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-150	Message	Backup inform err #1	
Description	Encoder #1: Backup information not valid (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-151	Message	Backup inform err #2
Description	Encoder #2: Backup information not valid (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-152	Message	Backup inform err #3
Description	Encoder #3: Backup information not valid (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-153	Message	Backup inform err #4
Description	Encoder #4: Backup information not valid (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-154	Message	Backup position er#1
Description	EtherCAT enc. #1: Backup position not valid (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
			<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error			<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-155	Message	Backup position er#2
Description	EtherCAT enc. #2: Backup position not valid (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes		Measures	
			<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error			<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner,

	please attach the current project file and message log.
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Code	5036-156	Message	Backup position er#3
Description	EtherCAT enc. #3: Backup position not valid (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-160	Message	Position out range#1
Description	Encoder #1 position out of range, motor was moved (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-161	Message	Position out range#2
Description	Encoder #2 position out of range, motor was moved (Encoder error while switched off)		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-162	Message	Position out range#3
Description	Encoder #3 position out of range, motor was moved (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-163	Message	Position out range#4
Description	Encoder #4 position out of range, motor was moved (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 	

The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5036-164	Message	Position out range#1	
Description	EtherCAT enc. #1 position out of range, motor was moved (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-165	Message	Position out range#2	
Description	EtherCAT enc. #2 position out of range, motor was moved (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Quit error, and repeat homing.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-166	Message	Position out range#3	
Description	EtherCAT enc. #3 position out of range, motor was moved (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-170	Message	Serial num change #1	
Description	Encoder #1 serial number changed, motor was replaced (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-171	Message	Serial num change #2	
Description	Encoder #2 serial number changed, motor was replaced (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-172	Message	Serial num change #3
Description	Encoder #3 serial number changed, motor was replaced (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-173	Message	Serial num change #4
Description	Encoder #4 serial number changed, motor was replaced (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available.

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5036-174	Message	Serial num change #1	
Description	EtherCAT enc. #1 serial number changed, motor was replaced (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-175	Message	Serial num change #2	
Description	EtherCAT enc. #2 serial number changed, motor was replaced (Encoder error while switched off)			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 		
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 		

Code	5036-176	Message	Serial num change #3
Description	EtherCAT enc. #3 serial number changed, motor was replaced (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing. Piece-specific parts of motor nameplate will be loaded automatically, if available. 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-180	Message	Hiperface DSL err #1
Description	Encoder #1 Hiperface DSL error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-182	Message	Hiperface DSL err #3
Description	Encoder #3 Hiperface DSL error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5036-210	Message	SD encoder error
Description	Encoder: SD encoder error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.

Code	5036-220	Message	Multiturn pos lost#1
Description	Encoder #1: Battery low, multiturn position is lost (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing

The encoder is not connected or not working properly.	<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (⟷) for a more detailed description.
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Code	5036-221	Message	Multiturn pos lost#2
Description	Encoder #2: Battery low, multiturn position is lost (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (⟷) for a more detailed description. 	

Code	5036-222	Message	Multiturn pos lost#3
Description	Encoder #3: Battery low, multiturn position is lost (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check voltage and cabling of encoder backup battery. Replace battery, quit error and repeat homing 	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (⟷) for a more detailed description. 	

Code	5036-230	Message	SmartAbs encoder err
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Description	Encoder #1: SmartAbs encoder error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-240	Message	Encoder para err #1
Description	Encoder #1 Parameter error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5036-241	Message	Encoder para err #2
Description	Encoder #2 Parameter error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5036-242	Message	Encoder para err #3
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Description	Encoder #3 Parameter error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5036-243	Message	Encoder para err #4
Description	Encoder #4 Parameter error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check parameter data set. Expand error window and see detailed information. 	

Code	5036-250	Message	BISS protocol error
Description	Encoder #1: BISS protocol error (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
The encoder is not connected or not working properly.		<ul style="list-style-type: none"> • If this is encoder has analogue signals, please check the signal amplitude vs. parameter EncObsMin • Check cabling. If available, please try another encoder and cable. • See detailed error information (>>) for a more detailed description. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5036-260	Message	Power off op state#1
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Description	Encoder #1: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-261	Message	Power off op state#2
Description	Encoder #2: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-262	Message	Power off op state#3
Description	Encoder #3: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

	<ul style="list-style-type: none"> • Quit error, and repeat homing
The encoder special function (persistent homing and multiturn simulation) has reported an error	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.

Code	5036-263	Message	Power off op state#4
Description	Encoder #4: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
The encoder special function (persistent homing and multiturn simulation) has reported an error		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-264	Message	Power off op state#1
Description	EtherCAT enc.: #1 Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Quit error, and repeat homing 	

<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>	<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log.
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Code	5036-265	Message	Power off op state#2
Description	EtherCAT enc.: #2: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5036-266	Message	Power off op state#3
Description	EtherCAT enc.: #3: Axis module was powered off in operation enabled state. Homing backup not available. (Encoder error while switched off)		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
<p>The encoder special function (persistent homing and multiturn simulation) has reported an error</p>		<ul style="list-style-type: none"> • Quit error, and repeat homing 	
		<ul style="list-style-type: none"> • Please check the 'encoder special function' dialog and the message log for current state. • Please read documentation of 'encoder special function'. • When reporting this error to your service partner, please attach the current project file and message log. 	

Code	5038-0	Message	Safety SR1 detected	
Description	Fatal error on Safety IO expander SR1 detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An internal diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring of the device. • If this error occurs in a SDC application, check for errors on SDC system and try to solve this errors first. • To quit this error, it is necessary to restart the application (24V reset). • If error still applies after restart, it's probably a hardware issue. Please replace the axis module and contact your service partner. 		

Code	5038-1	Message	Safety SR2 detected	
Description	Fatal error on Safety IO expander SR2 detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An internal diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring of the device. • If this error occurs in a SDC application, check for errors on SDC system and try to solve this errors first. • To quit this error, it is necessary to restart the application (24V reset). • If error still applies after restart, it's probably a hardware issue. Please replace the axis module and contact your service partner. 		

Code	5038-2	Message	Safety IO comm error	
Description	Error in communication to Safety IO expander			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
		<ul style="list-style-type: none"> • Please check that the version of functional firmware is compatible with the version of safety firmware 		

This is possibly a hardware issue.	<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module
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Code	5038-3	Message	Safety invaded FW
Description	No valid firmware found on Safety IO expander		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • If error applies after firmware update, please retry the update process. 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5038-4	Message	Safety SR1 alarm on
Description	Alarm on Safety IO expander SR1		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An external diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring the safe inputs. • Please check the DIP switch setting. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. • Please check the wiring of the motor brake. • If this error occurs in a SDC application, check for errors on SDC system and try to solve these errors first. 	

Code	5038-5	Message	Safety SR2 alarm on
Description	Alarm on Safety IO expander SR2		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	

<p>An external diagnostic error occurred in the safety module.</p>	<ul style="list-style-type: none"> • Please check the wiring the safe inputs. • Please check the DIP switch setting. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. • Please check the wiring of the motor brake. • If this error occurs in a SDC application, check for errors on SDC system and try to solve these errors first.
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Code	5038-6	Message	Safety SR1 BIOS err	
Description	Fatal error in BIOS on Safety IO expander SR1			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>An internal diagnostic error occurred in the safety module.</p>		<ul style="list-style-type: none"> • Please check the wiring of the device. • If this error occurs in a SDC application, check for errors on SDC system and try to solve this errors first. • To quit this error, it is necessary to restart the application (24V reset). • If error still applies after restart, it's probably a hardware issue. Please replace the axis module and contact your service partner. 		

Code	5038-7	Message	Safety SR2 BIOS err	
Description	Fatal error in BIOS on Safety IO expander SR2			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
<p>An internal diagnostic error occurred in the safety module.</p>		<ul style="list-style-type: none"> • Please check the wiring of the device. • If this error occurs in a SDC application, check for errors on SDC system and try to solve this errors first. • To quit this error, it is necessary to restart the application (24V reset). • If error still applies after restart, it's probably a hardware issue. Please replace the axis module and contact your service partner. 		

Code	5038-8	Message	Safety invailed data	
Description	No valid production data found on Safety IO expander			

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please restart the device (24V reset) • If error still applies after restart, please contact your service partner 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5038-9	Message	Fatal error SBC	
Description	Fatal error SBC on Safety IO expander detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An internal diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring of the device. • If this error occurs in a SDC application, check for errors on SDC system and try to solve this errors first. • To quit this error, it is necessary to restart the application (24V reset). • If error still applies after restart, it's probably a hardware issue. Please replace the axis module and contact your service partner. 		

Code	5038-10	Message	Safety SBC detected	
Description	Alarm SBC on Safety IO expander detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An external diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring the safe inputs. • Please check the DIP switch setting. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. • Please check the wiring of the motor brake. • If this error occurs in a SDC application, check for errors on SDC system and try to solve these errors first. 		

Code	5038-11	Message	Testpulse detected	
Description	Alarm - External testpulse on Safety IO expander detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An external diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring the safe inputs. • Please check the DIP switch setting. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. • Please check the wiring of the motor brake. • If this error occurs in a SDC application, check for errors on SDC system and try to solve these errors first. 		

Code	5038-12	Message	Invalid dipswitch	
Description	Alarm - Invalid DipSwitch settings on Safety IO expander detected			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
An external diagnostic error occurred in the safety module.		<ul style="list-style-type: none"> • Please check the wiring the safe inputs. • Please check the DIP switch setting. • Especially check if the test pulses of the external master matches the axis module's DIP switch setting. • An external relay in the safety circuit might chatter. • Please check the wiring of the motor brake. • If this error occurs in a SDC application, check for errors on SDC system and try to solve these errors first. 		

Code	5041-0	Message	Unspecified error	
Description	ExpansionModule: Unspecified error			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory 		

	setting. See if the error persists, or if it comes with activating a certain feature.
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Code	5041-3	Message	Emergency line short
Description	Emergency line is disconnected or short circuit		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Check errors on other modules connected to the emergency line. • Check if any axis module reports a critical error 	
An error is reported on the quick shutdown line		<ul style="list-style-type: none"> • Please check the emergency line requirements in the instruction manual. • Check errors on other modules connected to the emergency line. • Check if any axis module in the system reports a critical error. 	

Code	5041-4	Message	Emergency shutdown
Description	ExpansionModule: Emergency shutdown circuit not connected to supply unit.		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The emergency line is not connected to the supply unit. Please check circuit • If emergency line is not needed, please check parameter P732.6 EmcyLine 	
An error is reported on the quick shutdown line		<ul style="list-style-type: none"> • Please check the emergency line requirements in the instruction manual. • Check errors on other modules connected to the emergency line. • Check if any axis module in the system reports a critical error. 	

Code	5041-5	Message	Cross comm error
Description	ExpansionModule: Cross communication		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
An error occurred on the cross-communication line.		<ul style="list-style-type: none"> • Please check cross communication cabling (X3/X4 or X40A/X40B, whichever applies). • Cross communication must not be connected across different power supplies. • The last axis module's X4 or X40B connector (whichever applies) must remain open. • All axis modules on a cross communication should run the same firmware. • Though this error is displayed by all axis modules, the cause is often a single device or cable. Try to locate the fault by excluding devices from cross-communication. 	

Code	5041-11	Message	Fuse 401 has trigger
Description	ExpansionModule: Fuse 401 has triggered		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is possibly an expansion module hardware issue		<ul style="list-style-type: none"> • If other measures fail, please try to replace the expansion module hardware. 	
The DC line current on the expansion module was too high.		<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes. 	

Code	5041-12	Message	Fuse 400 has trigger
Description	ExpansionModule: Fuse 400 has triggered		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
This is possibly an expansion module hardware issue		<ul style="list-style-type: none"> • If other measures fail, please try to replace the expansion module hardware. 	

The DC line current on the expansion module was too high.	<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes.
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Code	5041-14	Message	Axis module symmetry
Description	ExpansionModule: Axis module symmetry		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please check the axis modules for errors 	
This is possibly a hardware issue.		<ul style="list-style-type: none"> • If other measures fail to solve the problem, please replace the axis module 	

Code	5041-15	Message	Internal error
Description	ExpansionModule: Internal error		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please contact your service partner and report the values of parameter 731.16,17 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
This is possibly an expansion module hardware issue		<ul style="list-style-type: none"> • If other measures fail, please try to replace the expansion module hardware. 	

Code	5041-17	Message	DC link overcurrent
Description	ExpansionModule: DC link overcurrent detected		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please contact your service partner and report the values of parameter 731.16,17 	
This is probably a software issue.		<ul style="list-style-type: none"> • Please try to switch to a different version of device firmware. • Save your dataset and reset the axis module to factory setting. See if the error persists, or if it comes with activating a certain feature. 	
The DC line current on the expansion module was too high.		<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes. 	

Code	5041-35	Message	Internal temp high
Description	ExpansionModule: Internal temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • Please let expansion module cool down 	
The DC line current on the expansion module was too high.		<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes. 	



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5041-36	Message	Heatsink temp high
Description	ExpansionModule: Heatsink temperature too high		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • Please let expansion module cool down
The DC line current on the expansion module was too high.	<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes.



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5041-43	Message	24V overvoltage
Description	ExpansionModule: 24V overvoltage		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		

Causes	Measures
	<ul style="list-style-type: none"> • The 24V supply voltage is probably out of allowed range. Please check the external 24V supply.
An error concerning 24V supply was reported	<ul style="list-style-type: none"> • Check the source of the 24V supply. • Measure the exact voltage, and check limits in the instruction manual. • Check the supply voltage when switching on the system. • Check the supply voltage in special situations, esp. when the motor brakes are opening.
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.	<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length.



Caution is required for electric shock when checking the supply voltage due to the alarm above.

Code	5041-44	Message	24V undervoltage
Description	ExpansionModule: 24V undervoltage		

Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The 24V supply voltage is probably out of allowed range. Please check the external 24V supply. 	
An error concerning 24V supply was reported		<ul style="list-style-type: none"> • Check the source of the 24V supply. • Measure the exact voltage, and check limits in the instruction manual. • Check the supply voltage when switching on the system. • Check the supply voltage in special situations, esp. when the motor brakes are opening. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	
Code	5041-45	Message	24V undervoltage
Description	ExpansionModule 24V undervoltage		
Monitoring	Periodically checking	Alarm Level	2
Influence	Robot operation stopping, unable to both handle JOG and execute program		
Causes		Measures	
		<ul style="list-style-type: none"> • The 24V supply voltage is probably out of allowed range. Please check the external 24V supply. 	
An error concerning 24V supply was reported		<ul style="list-style-type: none"> • Check the source of the 24V supply. • Measure the exact voltage, and check limits in the instruction manual. • Check the supply voltage when switching on the system. • Check the supply voltage in special situations, esp. when the motor brakes are opening. 	
This is possibly an EMC issue. This is very likely if the problem occurs when switching on motor control and/ or when connecting DC link power supply.		<ul style="list-style-type: none"> • Please check the device cabling for proper connection. • Please check device grounding, i. e. the connection to a metal backplane and cabinet connection to earth. • .Check motor grounding and motor cable length. 	

Code	5041-49	Message	I2t monitoring error	
Description	ExpansionModule: I2t monitoring of DC link current detected overload			
Monitoring	Periodically checking	Alarm Level	2	
Influence	Robot operation stopping, unable to both handle JOG and execute program			
Causes		Measures		
The DC line current on the expansion module was too high.		<ul style="list-style-type: none"> • If possible, reduce the needed current on the relevant axes, especially those with high power rating. • Try to use sequential movement of the relevant axes. 		

10.2 KeDrive Warning

Code	5100-0	Message	Under voltage	
Description	Undervoltage detected			
Monitoring	Periodically checking	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Device		<ul style="list-style-type: none"> • P 1002 0 Undervoltage_ON, • P 1002 1 Undervoltage_OFF 		

Code	5100-1	Message	Over voltage	
Description	Overvoltage detected			
Monitoring	Periodically checking	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Device		<ul style="list-style-type: none"> • P 1002 2 Overvoltage_ON, • P 1002 3 Overvoltage_OFF 		



Caution is required for electric shock when checking the supply voltage due to the alarm above.

Code	5100-2	Message	Over current
Description	Motor current greater than threshold		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis	<ul style="list-style-type: none"> • P 3071 0 I_ON • P 3071 1 I_OFF 		

Code	5100-3	Message	Device Overload
Description	Overload KeDrive D3DA 3xx detected		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis	<ul style="list-style-type: none"> • P 3071 2 DeviceI2t_ON • P 3071 3 DeviceI2T_OFF 		

Code	5100-4	Message	Motor overload
Description	Motor overload detected		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis	<ul style="list-style-type: none"> • P 3071 4 MotorI2t_ON • P 3071 5 MotorI2t_OFF 		

Code	5100-5	Message	Speed limit active
Description	Speed limitation active		
Monitoring	When transmitting driver parameter	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	

Axis	<ul style="list-style-type: none"> • P 3071 8 Speed_ON • P 3071 9 Speed_OFF
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Code	5100-6	Message	Torque limit active	
Description	Torque limitation active			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Axis	<ul style="list-style-type: none"> • P 3071 6 Torque_ON • P 3071 7 Torque_OFF 			

Code	5100-7	Message	Speed setpoint limit	
Description	Speed setpoint limitation active			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Axis				

Code	5100-8	Message	Trq setpoint limit	
Description	Current setpoint limitation active			
Monitoring	When transmitting driver parameter	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Axis				

Code	5100-9	Message	Over temperature	
Description	Overtemperature detected			

Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Device/ Axis	<ul style="list-style-type: none"> • P 1002 4 Tint_ONT • P 1002 5 Tint_OFF (Device temperature) • P 3071 10 TC_ON • P 3071 11 TC_OFF (Power stage module temperature) 		

	Caution is required for burning accident by over-heating in case of the alarm above.
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Code	5100-10	Message	PSTLoad
Description	reserved		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	

Code	5100-11	Message	Supply
Description	reserved		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
KeDrive D3-DP 3xx	<ul style="list-style-type: none"> • Details of the cause of a warning are provided by the KeDrive D3DP 3xx status parameters. The following status bits can lead to a warning: • P 703[3] bit 5 • P 703[4] bit 0, 2, 3 • P 703[5] bit 4 - 9, 12, 14 • However, these bits only lead to a warning if they were activated for this purpose with mask parameters • P 705[2] as a mask for P 703[3] • P 705[5] as a mask for P 703[4] 		

	• P 705[8] as a mask for P 703[5]
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Code	5100-12	Message	Critical stack load	
Description	Warning : critical stack load			
Monitoring	Periodically checking	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Device				

Code	5100-13	Message	Hardware limit(+)	
Description	Positive hardware limit switch reached			
Monitoring	Periodically checking	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Axis				

Code	5100-14	Message	Hardware limit(-)	
Description	Negative hardware limit switch reached			
Monitoring	Periodically checking	Alarm Level	0	
Influence	None			
Reference		Parameter for thresholds(s)		
Axis				

Code	5100-15	Message	Position limit(+)	
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Description	Positive position limit reached		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis		• P 24701 1 PosLim_Max	

Code	5100-16	Message	Position limit(-)
Description	Negative position limit reached		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis		• P 24701 0 PosLim_Min	

Code	5100-17	Message	Ethernet RX overflow
Description	Ethernet RX queue overflow		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Device			

Code	5100-18	Message	Motor over temp
Description	Motor overtemperature		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	

Axis	<ul style="list-style-type: none"> • P 3071 12 MotorTemp_On • P 3071 13 MotorTemp_Off
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Caution is required for burning accident by over-heating in case of the alarm above.

Code	5100-19	Message	Encoder over temp
Description	Ovetemperature encoder (on this axis)		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis	<ul style="list-style-type: none"> • P 2874 31 TemperatureWarning 		



Caution is required for burning accident by over-heating in case of the alarm above.

Code	5100-20	Message	Brake test required
Description	A brake test is required.		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		
Reference		Parameter for thresholds(s)	
Axis	<ul style="list-style-type: none"> • See also section “Cyclical brake test” on page 250 		

Code	5100-21	Message	Emergency stop
Description	Allowed emergency stops exceeded		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		

Reference	Parameter for thresholds(s)
Axis	<ul style="list-style-type: none"> • See also section “Emergency stop counter” on page 251.

Code	5100-22	Message	Encoder battery low
Description	Encoder battery low		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		

Reference	Parameter for thresholds(s)
Axis	<ul style="list-style-type: none"> • The voltage of the supply battery is low

Code	5100-23	Message	ZKSYM
Description	Zk asymetrie in four capacity systems (BG3_ 4) detected		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		

Reference	Parameter for thresholds(s)
Axis	

Code	5100-24	Message	Safe brake test
Description	Safe brake test is required		
Monitoring	Periodically checking	Alarm Level	0
Influence	None		

Reference	Parameter for thresholds(s)

Chapter 4 Revision

Revision	Date	Revision Detail
1	2019-01-10	Initial Distribution
3	2026-01-09	Add KEBA Alarm

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A. Literature Reference

All the literature, which are required for performing services, repair or installation of all robot system that uses this product, are specified in this chapter.

In the ID of all literature, the very first word indicates the Controller name and the second word means the abbreviation of corresponding literature. The last indicates language and its version.

Language is marked according to the rules below.

- Korean: K
- English: E
- Chinese: C
- Japanese: J
- Vietnam: V

The document IDs listed in the table below always indicate the most recent version.

Document ID	Description
N2-IM-E01	Installation and handling manual This explains the Controller structure and installation as well as the methods to interface with external devices.
N2-BM-E01	Beginner's guide This provides brief description and method to use for the first time users.
N2-OM-E01	Operation manual This explains the method to use the Controller and Teach Pendant, parameter setting, JOB program editing and additional functions.
N2-PM-E03	Programming manual This explains the method to create RRL (Robostar robot language) that is the Robostar Robot program and describes the commands.
N2-HM-E01	Unihost manual This explains about Unihost that is Robostar on-line PC program.
N2-AM-E01	Alarm and maintenance manual This explains the information on problems occurred in the Controller-based Robot system as well as solutions and procedure for the problems.

ROBOSTAR

N2 Series Controller

Alarm and Maintenance Manual
First edition, January 2019

ROBOSTAR CO., LTD.
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