Faults and alarms

4

Content

4.1 Overview of faults and alarms

4.1.1 General

Fault and alarm displays (messages)

In the case of a fault, the drive signals the corresponding fault(s) and/or alarm(s).

For example, the following methods for displaying faults and alarms are available:

- Display via the fault and alarm buffer with PROFIBUS/PROFINET
- Display online via the commissioning software
- Display and operating unit (e.g. BOP, AOP)

Differences between faults and alarms

The differences between faults and alarms are as follows:

Table 4-1 Differences between faults and alarms

Type	Description
Faults	What happens when a fault occurs? • The appropriate fault response is triggered. • Status bit ZSW1.3 is set. • The fault is entered in the fault buffer. How are faults eliminated? • Remove the original cause of the fault. • Acknowledge the fault.
Alarms	What happens when an alarm occurs? • Status signal ZSW1.7 is set. • The alarm is entered into the alarm buffer. How are alarms eliminated? • Alarms acknowledge themselves. If the cause of the alarm is no longer present, they automatically reset themselves.

Fault reactions

The following fault reactions are defined:

Table 4-2 Fault reactions

List	PROFIdrive	Reaction	Description
NONE	-	None	No response when a fault occurs. **Note:** With "Basic positioner" (r0108.4 = 1), the following applies: When a fault occurs with fault reaction "NONE", an active traversing task is interrupted and the system switches to tracking mode until the fault has been rectified and acknowledged.
OFF1	ON/ OFF	Brake along the ramp-function generator down ramp followed by pulse inhibit	**Closed loop speed control (p1300 = 20, 21)** • n_set = 0 is input immediately to brake the drive along the ramp-function generator ramp down (p1121). • When zero speed is detected, the motor holding brake (if parameterized) is closed (p1215). The pulses are suppressed when the brake application time (p1217) expires. Zero speed is detected if the actual speed drops below the threshold in p1226 or if the monitoring time (p1227) started when speed setpoint <= speed threshold (p1226) has expired. **Torque control (p1300 = 22, 23)** • The following applies for closed-loop torque control: Reaction as for OFF2. • When the system switches to closed-loop torque control with p1501, the following applies: No separate braking reaction. If the actual speed value drops below the speed threshold (p1226) or the timer stage (p1227) has expired, the motor holding brake (if one is being used) is closed. The pulses are suppressed when the brake application time (p1217) expires.
OFF1_ DELAYED	-	As for OFF1, however delayed	Faults with this fault response only become effective after the delay time in p3136 has expired. The remaining time up to OFF1 is displayed in r3137.
OFF2	COAST STOP	Internal/external pulse disable	**Speed and torque control** • Instantaneous pulse suppression, the drive “coasts” to a standstill. • The motor holding brake (if one is being used) is closed immediately. • Switching-on inhibited is activated.

Table 4-2 Fault reactions, continued

List	PROFIdrive	Reaction	Description
OFF3	QUICK STOP	Brake along the OFF3 down ramp followed by pulse disable	**Closed loop speed control (p1300 = 20, 21)** • n_set = 0 is input immediately to brake the drive along the OFF3 ramp down (p1135). • When zero speed is detected, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the holding brake's closing time (p1217) expires. Zero speed is detected if the actual speed drops below the threshold in p1226 or if the monitoring time (p1227) started when speed setpoint <= speed threshold (p1226) has expired. • Switching-on inhibited is activated. **Torque control (p1300 = 22, 23)** • Changeover to speed-controlled operation and other reactions as described for speed-controlled operation.
STOP2	-	n_set = 0	• n_set = 0 is input immediately to brake the drive along the OFF3 ramp down (p1135). • The drive remains in closed-loop speed control.
IASC/DCBRK	-	-	• For synchronous motors, the following applies: If a fault occurs with this fault reaction, an internal armature short-circuit is triggered. The conditions for p1231 = 4 must be observed. • For induction motors, the following applies: If a fault occurs with this fault reaction, DC braking is triggered. DC braking must have been commissioned (p1230 to p1239).
ENCODER	-	Internal/external pulse disable (p0491)	The fault reaction ENCODER is applied as a function of the setting in p0491. Factory setting: p0491 = 0 --> Encoder fault causes OFF2 **Notice:** When changing p0491, it is imperative that the information in the description of this parameter is carefully observed.

Acknowledging faults

The list of faults and alarms specifies how to acknowledge each fault after the cause has been eliminated.

Table 4-3 Acknowledging faults

Acknowledgment	Description
POWER ON	The fault is acknowledged via a POWER ON (switch Control Unit off and on again). **Note:** If this action has not removed the fault cause, the fault is displayed again immediately after power up.
IMMEDIATELY	Faults can be acknowledged as follows: 1 Set acknowledgment by parameter: p3981 = 0 --> 1 2 Acknowledging via binector inputs: p2103 BI: 1. Acknowledge faults p2104 BI: 2. Acknowledge faults p2105 BI: 3. Acknowledge faults 3 Acknowledging using a PROFIBUS control signal: STW1.7 = 0 --> 1 (edge) **Note:** • These faults can also be acknowledged by a POWER ON operation. • If this action has not eliminated the fault cause, the fault will continue to be displayed after acknowledgment. • Safety Integrated faults The "Safe Torque Off" (STO) function must be deselected before these faults are acknowledged.
PULSE SUPPRESSION	The fault can only be acknowledged when the pulses are inhibited (r0899.11 = 0). The same options are available for acknowledging as described under IMMEDIATE acknowledgment.

4.1.2 Explanation of the list of faults and alarms

The data in the following example have been chosen at random. The information listed below is the maximum amount of information that a description can contain. Some of the information is optional.

The "List of faults and alarms" (Page 988) has the following layout:

- - - - - - - - - - - - **Start of example** -

Axxxxx (F, N)	**Fault location (optional): Name**
Message class:	Text of the message class (number according to PROFIdrive)
Reaction:	NONE
Acknowledgement:	NONE
Cause:	Description of possible causes. Fault value (r0949, interpret format): or alarm value (r2124, interpret format): (optional) Information about fault or alarm values (optional).
Remedy:	Description of possible remedies.

- - - - - - - - - - - - **End of example** -

Axxxxx	**Alarm xxxxx**
Axxxxx (F, N)	**Alarm xxxxx (message type can be changed to F or N)**
Fxxxxx	**Fault xxxxx**
Fxxxxx (A, N)	**Fault xxxxx (report type can be changed to A or N)**
Nxxxxx	**No message**
Nxxxxx (A)	**No message (message type can be changed to A)**
Cxxxxx	**Safety message (separate message buffer)**

A message comprises a letter followed by the relevant number.

The meaning of the letters is as follows:

- A means "Alarm"
- F means "Fault"
- N means "No message" or "Internal message"
- C means "Safety message"

The optional brackets indicate whether the type specified for this message can be changed and which message types can be adjusted via parameters (p2118, p2119).

Information on reaction and acknowledgment is specified independently for a message with an adjustable message type (e.g. reaction to F, acknowledgment for F).

Note

You can change the default properties of a fault or alarm by setting parameters.

References: /BA13/ SINAMICS G120 Operating Instructions, Frequency Inverter with CU250S-2 Control Units (Vector),
Section "Alarms, faults, and system messages"

The "List of faults and alarms" (Page 988) supplies information referred to the properties of a message set as default. If the properties of a specific message are changed, the corresponding information may have to be modified in this list.

Fault location (optional): Name

The fault location (optional), the name of the fault or alarm and the message number are all used to identify the message (e.g. with the commissioning software).

Message value:

The information provided under the message value informs you about the composition of the fault/alarm value.

Example:

Message value: Component number: %1, fault cause: %2

This message value contains information about the component number and cause of the fault. The entries %1 and %2 are placeholders, which are filled appropriately in online operation (e.g. with the commissioning software).

Message class:

For each message, specifies the associated message class with the following structure:

Text of the message class (number according to PROFIdrive)

The message classes are transferred at different interfaces to higher-level control systems and their associated display and operating units.

The message classes that are available are shown in Table "Message classes and coding of various diagnostic interfaces" (Page 982). In addition to the text of the message class and their number according to PROFIdrive – as well as a brief help text regarding the cause and remedy – they also include information about the various diagnostic interfaces:

- PN (hex)

  Specifies the "Channel error type" of the PROFINET channel diagnostics.

  When activating the channel diagnostics, using the GSDML file, the texts listed in the table can be displayed.

- DS1 (dec)

  Specifies the bit number in date set DS1 of the diagnostic alarm for SIMATIC S7.

  When the diagnostic alarms are activated, the texts listed in the table can be displayed.

- DP (dec)

  Specifies the "Error type" of the channel-related diagnostics for PROFIBUS.

  When the channel diagnostics are activated, the texts listed in the standard and the GSD file can be displayed.

- ET 200 (dec)

  Specifies the "Error type" of the channel-related diagnostics for the SIMATIC ET 200pro FC-2 device.

  When the channel diagnostics are activated, the texts listed in the standard and the GSD file of the ET 200pro can be displayed.

- NAMUR (r3113.x)

  Specifies the bit number in parameter r3113.

For the interfaces DP, ET 200, NAMUR, in some instances, the message classes are combined.

Table 4-4 Message classes and coding of various diagnostic interfaces

Text of the message class (number according to PROFIdrive) Cause and remedy.	**Diagnostics interface**				
	PN (hex)	**DS1 (dec)**	**DP (dec)**	**ET 200 (dec)**	**NAMUR (r3113.x)**
Hardware/software errors (1) A hardware or software malfunction was detected. Carry out a POWER ON for the relevant component. If it occurs again, contact the hotline.	9000	0	16	9	0
Line fault (2) A line supply fault has occurred (phase failure, voltage level ...). Check the line supply and fuses. Check the supply voltage. Check the wiring.	9001	1	17	24	1
Supply voltage fault (3) An electronics supply voltage fault (48 V, 24 V, 5 V …) was detected. Check the wiring. Check the voltage level.	9002	2	2 [1] 3 [2]	2 [1] 3 [2]	15
DC-link overvoltage (4) The DC-link voltage has assumed an inadmissibly high value. Check the dimensioning of the system (line supply, reactor, voltages). Check the infeed settings.	9003	3	18	24	2
Power electronics fault (5) An impermissible operating state of the power electronics was detected (overcurrent, overtemperature, IGBT failure …). Check compliance with the permissible load cycles. Check the ambient temperatures (fan).	9004	4	19	24	3
Overtemperature of the electronic component (6) The temperature in the component has exceeded the highest permissible limit. Check the ambient temperature / control cabinet ventilation.	9005	5	20	5	4
Ground fault / inter-phase short-circuit detected (7) A ground fault / inter-phase short-circuit was detected in the power cables or in the motor windings. Check the power cables (connection). Check the motor.	9006	6	21	20	5
Motor overload (8) The motor was operated outside the permissible limits (temperature, current, torque …). Check the load cycles and set limits. Check the ambient temperature / motor cooling.	9007	7	22	24	6
Communication to the higher-level controller faulted (9) The communication to the higher-level controller (internal coupling, PROFIBUS, PROFINET …) is faulted or interrupted. Check the state of the higher-level controller. Check the communication connection/-wiring. Check the bus configuration/cycles.	9008	8	23	19	7
Safety monitoring channel has detected an error (10) A safe operation monitoring function has detected an error.	9009	9	24	25	8

Table 4-4 Message classes and coding of various diagnostic interfaces, continued

Text of the message class (number according to PROFIdrive) Cause and remedy.	**Diagnostics interface**				
	PN (hex)	**DS1 (dec)**	**DP (dec)**	**ET 200 (dec)**	**NAMUR (r3113.x)**
Actual position/speed value incorrect or not available (11) An illegal signal state was detected while evaluating the encoder signals (track signals, zero marks, absolute values …). Check the encoder / state of the encoder signals. Observe the maximum permissible frequencies.	900A	10	25	29	9
Internal (DRIVE-CLiQ) communication faulted (12) The internal communication between the SINAMICS components is faulted or interrupted. Check the DRIVE-CLiQ wiring. Ensure an EMC-compliant installation. Observe the maximum permissible quantity structures / cycles.	900B	11	26	31	10
Infeed fault (13) The infeed is faulty or has failed. Check the infeed and its environment (line supply, filters, reactors, fuses …). Check the infeed control.	900C	12	27	24	11
Braking controller / Braking Module faulted (14) The internal or external Braking Module is faulted or overloaded (temperature). Check the connection/state of the Braking Module. Comply with the permissible number of braking operations and their duration.	900D	13	28	24	15
Line filter fault (15) The line filter monitoring has detected an excessively high temperature or another impermissible state. Check the temperature / temperature monitoring. Check the configuration to ensure that it is permissible (filter type, infeed, thresholds).	900E	14	17	24	15
External measured value / signal state outside of the permissible range (16) A measured value / signal state read in via the input area (digital/analog/temperature) has assumed an impermissible value/state. Identify and check the relevant signal. Check the set thresholds.	900F	15	29	26	15
Application / technological function faulty (17) The application / technological function has exceeded a (set) limit (position, velocity, torque …). Identify and check the relevant limit. Check the setpoint specification of the higher-level controller.	9010	16	30	9	15
Error in the parameterization/configuration/commissioning procedure (18) An error was identified in the parameterization or in a commissioning procedure, or the parameterization does not match the actual device configuration. Determine the precise cause of the fault using the commissioning tool. Adapt the parameterization or device configuration.	9011	17	31	16	15

Table 4-4 Message classes and coding of various diagnostic interfaces, continued

Text of the message class (number according to PROFIdrive) Cause and remedy.	Diagnostics interface				
	PN (hex)	DS1 (dec)	DP (dec)	ET 200 (dec)	NAMUR (r3113.x)
General drive fault (19) Group fault. Determine the precise cause of the fault using the commissioning tool.	9012	18	9	9	15
Auxiliary unit fault (20) The monitoring of an auxiliary unit (incoming transformer, cooling unit …) has detected an illegal state. Determine the exact cause of the fault and check the relevant device.	9013	19	29	26	15

1. Undervoltage condition of the electronics power supply

2. Overvoltage condition of the electronics power supply

Drive object:

Each message (fault/alarm) specifies the control mode (CU-variant) in which it can be found.

A message can belong to one, several, or all CU -variants.

Reaction: Default fault reaction (adjustable fault reaction)

Specifies the default reaction in the event of a fault.

The optional parentheses indicate whether the default fault reactions can be changed and which fault reactions can be adjusted via parameters (p2100, p2101).

Note

See Table "Fault reactions" (Page 977)

Acknowledgment: Default acknowledgment (adjustable acknowledgment)

Specifies the default method of acknowledging faults after the cause has been eliminated.

The optional parentheses indicate whether the default acknowledgment can be changed and which acknowledgment can be adjusted via parameters (p2126, p2127).

Note

See Table "Acknowledging faults" (Page 979)

Cause:

Describes the possible causes of the fault or alarm. A fault or alarm value can also be specified (optional).

Fault value (r0949, format):

The fault value is entered in the fault buffer in r0949[0...63] and specifies additional, more precise information about a fault.

Alarm value (r2124, format):

The alarm value specifies additional, more precise information about an alarm.

The alarm value is entered in the alarm buffer in r2124[0...63] and specifies additional, more precise information about an alarm.

Remedy:

Describes the methods available for eliminating the cause of the active fault or alarm.

⚠ **WARNING**
On a case for case basis, service and maintenance personnel are responsible for choosing a suitable method for eliminating the cause of faults.

4.1.3 Number ranges of faults and alarms

Note

The following number ranges represent an overview of all faults and alarms used in the SINAMICS drive family.

The faults and alarms for the product described in this List Manual are described in detail in "List of faults and alarms" (Page 988).

Faults and alarms are organized into the following number ranges:

Table 4-5 Number ranges of faults and alarms

of	To	Area
1000	3999	Control Unit
4000	4999	Reserved
5000	5999	Power section
6000	6899	Infeed
6900	6999	Braking Module
7000	7999	Drive
8000	8999	Option Board
9000	12999	Reserved
13000	13020	Licensing
13021	13099	Reserved
13100	13102	Know-how protection
13103	19999	Reserved
20000	29999	OEM
30000	30999	DRIVE-CLiQ component power unit
31000	31999	DRIVE-CLiQ component encoder 1
32000	32999	DRIVE-CLiQ component encoder 2 **Note** Faults that occur are automatically output as an alarm if the encoder is parameterized as a direct measuring system and does not intervene in the motor control.
33000	33999	DRIVE-CLiQ component encoder 3 **Note** Faults that occur are automatically output as an alarm if the encoder is parameterized as a direct measuring system and does not intervene in the motor control.
34000	34999	Voltage Sensing Module (VSM)
35000	35199	Terminal Module 54F (TM54F)
35200	35999	Terminal Module 31 (TM31)
36000	36999	DRIVE-CLiQ Hub Module
37000	37999	HF Damping Module

Table 4-5 Number ranges of faults and alarms, continued

of	To	Area
40000	40999	Controller Extension 32 (CX32)
41000	48999	Reserved
49000	49999	SINAMICS GM/SM/GL
50000	50499	Communication Board (COMM BOARD)
50500	59999	OEM Siemens
60000	65535	SINAMICS DC MASTER (closed-loop DC current control)

4.2 List of faults and alarms

Product: SINAMICS G120S, Version: 4707900, Language: eng
Objects: CU250S_V, CU250S_V_CAN, CU250S_V_DP, CU250S_V_PN

F01000 Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - evaluate fault buffer (r0945).
- carry out a POWER ON (switch-off/switch-on) for all components.
- if required, check the data on the non-volatile memory (e.g. memory card).
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

F01001 FloatingPoint exception

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An exception occurred during an operation with the FloatingPoint data type.
The error may be caused by the basic system or an OA application (e.g., FBLOCKS, DCC).
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Note:
Refer to r9999 for further information about this fault.
r9999[0]: Fault number.
r9999[1]: Program counter at the time when the exception occurred.
r9999[2]: Cause of the FloatingPoint exception.
Bit 0 = 1: Operation invalid
Bit 1 = 1: Division by zero
Bit 2 = 1: Overflow
Bit 3 = 1: Underflow
Bit 4 = 1: Inaccurate result
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- check configuration and signals of the blocks in FBLOCKS.
- check configuration and signals of DCC charts.
- upgrade firmware to later version.
- contact Technical Support.

F01002 Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

F01003 Acknowledgment delay when accessing the memory

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A memory area was accessed that does not return a "READY".
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- contact Technical Support.

N01004 (F, A) Internal software error

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: An internal software error has occurred.
Fault value (r0949, hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - read out diagnostics parameter (r9999).
- contact Technical Support.
See also: r9999 (Software error internal supplementary diagnostics)

F01005 File upload/download error

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The upload or download of EEPROM data was unsuccessful.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = component number, xxxx = fault cause
xxxx = 000B hex = 11 dec:
Power unit component has detected a checksum error.
xxxx = 000F hex = 15 dec:
The selected power unit will not accept the content of the EEPROM file.
xxxx = 0011 hex = 17 dec:
Power unit component has detected an internal access error.
xxxx = 0012 hex = 18 dec:
After several communication attempts, no response from the power unit component.
xxxx = 008B hex = 140 dec:
EEPROM file for the power unit component not available on the memory card.
xxxx = 008D hex = 141 dec:
An inconsistent length of the firmware file was signaled. It is possible that the download/upload has been interrupted.
xxxx = 0090 hex = 144 dec:
When checking the file that was loaded, the component detected a fault (checksum). It is possible that the file on the memory card is defective.
xxxx = 0092 hex = 146 dec:
This SW or HW does not support the selected function.
xxxx = 009C hex = 156 dec:
Component with the specified component number is not available (p7828).
xxxx = Additional values:
Only for internal Siemens troubleshooting.
Remedy: Save a suitable firmware file or EEPROM file for upload or download in folder "/ee_sac/" on the memory card.

A01006 Firmware update for DRIVE-CLiQ component required

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: The firmware of a DRIVE-CLiQ component must be updated as there is no suitable firmware or firmware version in the component for operation with the Control Unit.
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component.

Remedy: Firmware update using the commissioning software:
The firmware version of all of the components on the "Version overview" page can be read in the Project Navigator under "Configuration" of the associated drive unit and an appropriate firmware update can be carried out.
Firmware update via parameter:
- take the component number from the alarm value and enter into p7828.
- start the firmware download with p7829 = 1.

A01007 POWER ON for DRIVE-CLiQ component required

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: A DRIVE-CLiQ component must be switched on again (POWER ON) (e.g. due to a firmware update).
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component.
Note:
For a component number = 1, a POWER ON of the Control Unit is required.

Remedy: - Switch off the power supply of the specified DRIVE-CLiQ component and switch it on again.
- For SINUMERIK, auto commissioning is prevented. In this case, a POWER ON is required for all components and the auto commissioning must be restarted.

A01009 (N) CU: Control module overtemperature

Message class: Overtemperature of the electronic components (6)

Reaction: NONE

Acknowledge: NONE

Cause: The temperature (r0037[0]) of the control module (Control Unit) has exceeded the specified limit value.

Remedy: - check the air intake for the Control Unit.
- check the Control Unit fan.
Note:
The alarm is automatically withdrawn once the limit value has been fallen below.

F01010 Drive type unknown

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: An unknown drive type was found.

Remedy: - replace Power Module.
- carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.

F01015 Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

A01016 (F) Firmware changed

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: At least one firmware file in the directory was illegally changed on the non-volatile memory (memory card/device memory) with respect to the version when shipped from the factory.
Alarm value (r2124, interpret decimal):
0: Checksum of one file is incorrect.
1: File missing.
2: Too many files.
3: Incorrect firmware version.
4: Incorrect checksum of the back-up file.
Remedy: For the non-volatile memory for the firmware (memory card/device memory), restore the delivery condition.
Note:
The file involved can be read out using parameter r9925.
The status of the firmware check is displayed using r9926.
See also: r9925 (Firmware file incorrect), r9926 (Firmware check status)

A01017 Component lists changed

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: On the memory card, one file in the directory /SIEMENS/SINAMICS/DATA or /ADDON/SINAMICS/DATA has been illegally changed with respect to that supplied from the factory. No changes are permitted in this directory.
Alarm value (r2124, interpret decimal):
zyx dec: x = Problem, y = Directory, z = File name
x = 1: File does not exist.
x = 2: Firmware version of the file does not match the software version.
x = 3: File checksum is incorrect.
y = 0: Directory /SIEMENS/SINAMICS/DATA/
y = 1: Directory /ADDON/SINAMICS/DATA/
z = 0: File MOTARM.ACX
z = 1: File MOTSRM.ACX
z = 2: File MOTSLM.ACX
z = 3: File ENCDATA.ACX
z = 4: File FILTDATA.ACX
z = 5: File BRKDATA.ACX
z = 6: File DAT_BEAR.ACX
z = 7: File CFG_BEAR.ACX
Remedy: For the file on the memory card involved, restore the status originally supplied from the factory.

F01018 Booting has been interrupted several times

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: POWER ON

Cause: Module booting was interrupted several times. As a consequence, the module boots with the factory setting.
Possible reasons for booting being interrupted:
- power supply interrupted.
- CPU crashed.
- parameterization invalid.

Remedy: - carry out a POWER ON (switch-off/switch-on). After switching on, the module reboots from the valid parameterization (if available).
- restore the valid parameterization.
Examples:
a) Carry out a first commissioning, save, carry out a POWER ON (switch-off/switch-on).
b) Load another valid parameter backup (e.g. from the memory card), save, carry out a POWER ON (switch-off/switch-on).
Note:
If the fault situation is repeated, then this fault is again output after several interrupted boots.

A01019 Writing to the removable data medium unsuccessful

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: NONE

Cause: The write access to the removable data medium was unsuccessful.

Remedy: Remove and check the removable data medium. Then run the data backup again.

A01020 Writing to RAM disk unsuccessful

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: NONE

Cause: A write access to the internal RAM disk was unsuccessful.

Remedy: Adapt the file size for the system logbook to the internal RAM disk (p9930).
See also: p9930 (System logbook activation)

A01021 Removable data medium as USB data storage medium from the PC used

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: The removable data medium is used as USB data storage medium from a PC
As a consequence, the drive cannot access the removable data medium. When backing up, the configuration data cannot be saved on the removable data medium.
Alarm value (r2124, interpret decimal):
1: The know-how protection as well as the copy protection for the removable data medium is active. Backup is inhibited.
2: The configuration data are only backed up in the Control Unit.
See also: r7760 (Write protection/know-how protection status), r9401 (Safely remove memory card status)

Remedy: De-activate the USB connection to the PC and back up the configuration data.
Note:
The alarm is automatically canceled when disconnecting the USB connection or when removing the removable data medium.
See also: r9401 (Safely remove memory card status)

F01023 Software timeout (internal)

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: An internal software timeout has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

A01028 (F) Configuration error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The parameterization that was downloaded was generated with a different module type (Order No., MLFB).
Remedy: Save parameters in a non-volatile fashion (p0971 = 1).

F01030 Sign-of-life failure for master control

Message class: Communication error to the higher-level control system (9)
Reaction: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Acknowledge: IMMEDIATELY
Cause: For active PC master control, no sign-of-life was received within the monitoring time.
The master control was returned to the active BICO interconnection.
Remedy: Set the monitoring time higher at the PC or, if required, completely disable the monitoring function.
For the commissioning software, the monitoring time is set as follows:
<Drive> -> Commissioning -> Control panel -> Button "Fetch master control" -> A window is displayed to set the monitoring time in milliseconds.
Notice:
The monitoring time should be set as short as possible. A long monitoring time means a late response when the communication fails!

F01033 Units changeover: Reference parameter value invalid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: When changing over the units to the referred representation type, it is not permissible for any of the required reference parameters to be equal to 0.0
Fault value (r0949, parameter):
Reference parameter whose value is 0.0.
See also: p0505 (Selecting the system of units), p0595 (Technological unit selection)
Remedy: Set the value of the reference parameter to a number different than 0.0.
See also: p0304, p0305, p0310, p0596, p2000, p2001, p2002, p2003, r2004

F01034 Units changeover: Calculation parameter values after reference value change unsuccessful

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The change of a reference parameter meant that for an involved parameter the selected value was not able to be re-calculated in the per unit representation. The change was rejected and the original parameter value restored.
Fault value (r0949, parameter):
Parameter whose value was not able to be re-calculated.
See also: p0304, p0305, p0310, p0596, p2000, p2001, p2002, p2003, r2004

Remedy: - Select the value of the reference parameter such that the parameter involved can be calculated in the per unit representation.
- Technology unit selection (p0595) before changing the reference parameter p0596, set p0595 = 1.

A01035 (F) ACX: Parameter back-up file corrupted

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: NONE

Cause: When the Control Unit is booted, no complete data set was found from the parameter back-up files. The last time that the parameterization was saved, it was not completely carried out.
It is possible that the backup was interrupted by switching off or withdrawing the memory card.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
aa = 01 hex:
Power up was realized without data backup. The drive is in the factory setting.
aa = 02 hex:
The last available internal backup data record was loaded. The parameterization must be checked. It is recommended that the parameterization is downloaded again.
aa = 03 hex:
The last available data record from the memory card was loaded. The parameterization must be checked.
aa = 04 hex:
An invalid data backup was loaded from the memory card into the drive. The drive is in the factory setting.
dd, cc, bb:
Only for internal Siemens troubleshooting.
See also: p0971 (Save parameters)

Remedy: - Download the project again with the commissioning software.
- save all parameters (p0971 = 1 or "copy RAM to ROM").

F01036 (A) ACX: Parameter back-up file missing

Message class: Hardware/software error (1)

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When downloading the device parameterization, a parameter back-up file PSxxxyyy.ACX associated with a drive object cannot be found.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.ACX
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2, 3, 4:
Only for internal Siemens troubleshooting.

Remedy: If you have saved the project data using the commissioning software, carry out a new download for your project.
Save using the function "Copy RAM to ROM" or with p0971 = 1.
This means that the parameter files are again completely written into the non-volatile memory.
Note:
If the project data have not been backed up, then a new first commissioning is required.

F01038 (A) ACX: Loading the parameter back-up file unsuccessful

Message class: Hardware/software error (1)

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: An error has occurred when downloading PSxxxyyy.ACX or PTxxxyyy.ACX files from the non-volatile memory.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.ACX
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2:
255: Incorrect drive object type.
254: Topology comparison unsuccessful -> drive object type was not able to be identified.
Reasons could be:
- incorrect component type in the actual topology
- Component does not exist in the actual topology.
- Component not active.
Additional values:
Only for internal Siemens troubleshooting.
Byte 4, 3:
Only for internal Siemens troubleshooting.

Remedy: - if you have saved the project data using the commissioning software, download the project again. Save using the function "Copy RAM to ROM" or with p0971 = 1. This means that the parameter files are again completely written to the non-volatile memory.
- replace the memory card or Control Unit.

F01039 (A) ACX: Writing to the parameter back-up file was unsuccessful

Message class: Hardware/software error (1)

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Writing to at least one parameter back-up file PSxxxyyy.*** in the non-volatile memory was unsuccessful.
- in the directory /USER/SINAMICS/DATA/ at least one parameter back-up file PSxxxyyy.*** has the "read only" file attribute and cannot be overwritten.
- there is not sufficient free memory space available.
- the non-volatile memory is defective and cannot be written to.
Fault value (r0949, interpret hexadecimal):
dcba hex
a = yyy in the file names PSxxxyyy.***
a = 000 --> consistency back-up file
a = 001 ... 062 --> drive object number
a = 099 --> PROFIBUS parameter back-up file
b = xxx in the file names PSxxxyyy.***
b = 000 --> data save started with p0971 = 1
b = 010 --> data save started with p0971 = 10
b = 011 --> data save started with p0971 = 11
b = 012 --> data save started with p0971 = 12
d, c:
Only for internal Siemens troubleshooting.

Remedy: - check the file attribute of the files (PSxxxyyy.***, CAxxxyyy.***, CCxxxyyy.***) and, if required, change from "read only" to "writeable".
- check the free memory space in the non-volatile memory. Approx. 80 kbyte of free memory space is required for every drive object in the system.
- replace the memory card or Control Unit.

F01040 Save parameter settings and carry out a POWER ON

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: POWER ON

Cause: A parameter has been changed that requires the parameters to be backed up and the Control Unit to be switched OFF and ON again.

Remedy: - Save parameters (p0971).
- carry out a POWER ON (switch-off/switch-on) for the Control Unit.

F01042 Parameter error during project download

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: An error was detected when downloading a project using the commissioning software (e.g. incorrect parameter value).
For the specified parameter, it was detected that dynamic limits were exceeded that may possibly depend on other parameters.
Fault value (r0949, interpret hexadecimal):
ccbbaaaa hex
aaaa = Parameter
bb = Index
cc = fault cause
0: Parameter number illegal.
1: Parameter value cannot be changed.
2: Lower or upper value limit exceeded.
3: Sub-index incorrect.
4: No array, no sub-index.
5: Data type incorrect.
6: Setting not permitted (only resetting).
7: Descriptive element cannot be changed.
9: Descriptive data not available.
11: No master control.
15: No text array available.
17: Task cannot be executed due to operating state.
20: Illegal value.
21: Response too long.
22: Parameter address illegal.
23: Format illegal.
24: Number of values not consistent.
108: Unit unknown.
Additional values:
Only for internal Siemens troubleshooting.

Remedy: - enter the correct value in the specified parameter.
- identify the parameter that restricts the limits of the specified parameter.

F01043 Fatal error at project download

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: A fatal error was detected when downloading a project using the commissioning software.
Fault value (r0949, interpret decimal):
1: Device status cannot be changed to Device Download (drive object ON?).
2: Incorrect drive object number.
8: Maximum number of drive objects that can be generated exceeded.
11: Error while generating a drive object (global component).

12: Error while generating a drive object (drive component).
13: Unknown drive object type.
14: Drive status cannot be changed to "ready for operation" (r0947 and r0949).
15: Drive status cannot be changed to drive download.
16: Device status cannot be changed to "ready for operation".
18: A new download is only possible if the factory settings are restored for the drive unit.
20: The configuration is inconsistent.
21: Error when accepting the download parameters.
22: SW-internal download error.
100: The download was canceled, because no write requests were received from the commissioning client (e.g. for communication error).
Additional values:
Only for internal Siemens troubleshooting.

Remedy: - use the current version of the commissioning software.
- modify the offline project and download again (e.g. compare the motor and Power Module in the offline project and on the drive).
- change the drive state (is a drive rotating or is there a message/signal?).
- carefully note any other messages/signals and remove their cause.
- boot from previously saved files (switch-off/switch-on or p0970).

F01044 CU: Descriptive data error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An error was detected when loading the descriptive data saved in the non-volatile memory.
Remedy: Replace the memory card or Control Unit.

A01045 Configuring data invalid

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: An error was detected when evaluating the parameter files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX, or CCxxxyyy.ACX saved in the non-volatile memory. Because of this, under certain circumstances, several of the saved parameter values were not able to be accepted. Also see r9406 up to r9408.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - check the parameters displayed in r9406 up to r9408, and correct these if required.
- Restore the factory setting using (p0970 = 1) and re-load the project into the drive unit.
Then save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0971 = 1. This overwrites the incorrect parameter files in the non-volatile memory – and the alarm is withdrawn.
See also: r9406 (PS file parameter number parameter not transferred), r9407 (PS file parameter index parameter not transferred), r9408 (PS file fault code parameter not transferred)

A01049 It is not possible to write to file

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: It is not possible to write into a write-protected file (PSxxxxxx.acx). The write request was interrupted.
Alarm value (r2124, interpret decimal):
Drive object number.

Remedy: Check whether the "write protected" attribute has been set for the files in the non-volatile memory under .../USER/SINAMICS/DATA/... When required, remove write protection and save again (e.g. set p0971 to 1).

F01054 CU: System limit exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A system overload was identified as a result of too many functions requiring a lot of computation time.
At least one of the following rules was not complied with:
- it is not permissible to activate function module "Position control" (r0108.3) in conjunction with "Free function blocks" (r0108.18).
- it is not permissible to activate function module "Basic positioner" (r0108.4) in conjunction with "Free function blocks" (r0108.18).
- when the function module "Free function blocks" is activated (r0108.18), only 1 speed encoder must be operated.

Remedy: Configure the drive device corresponding to the rules listed under cause.

A01064 (F) CU: Internal error (CRC)

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: NONE

Cause: A checksum error (CRC error) has occurred in the Control Unit program memory

Remedy:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

A01066 Buffer memory: 70% fill level reached or exceeded

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: The non-volatile buffer memory for parameter changes is filled to at least 70%.
This can also occur if the buffer memory is active (p0014 = 1) and parameters are continually changed via a fieldbus system.

Remedy: If required, de-activate and clear the buffer memory (p0014 = 0).
If required, clear the buffer memory (p0014 = 2).
In the following cases, the entries in the buffer memory are transferred into the ROM and then the buffer memory is cleared:
- p0971 = 1
- switch off/switch on the Control Unit

See also: p0014 (Buffer memory mode)

A01067 Buffer memory: 100 % fill level reached

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: The non-volatile buffer memory for parameter changes is filled to 100%.
All additional parameter changes will no longer be taken into account in the non-volatile buffer memory. However, parameter changes can still be made in the volatile memory (RAM).
This can also occur if the buffer memory is active (p0014 = 1) and parameters are continually changed via a fieldbus system.

Remedy: If required, de-activate and clear the buffer memory (p0014 = 0).
If required, clear the buffer memory (p0014 = 2).
In the following cases, the entries in the buffer memory are transferred into the ROM and then the buffer memory is cleared:
- p0971 = 1
- switch off/switch on the Control Unit

See also: p0014 (Buffer memory mode)

F01068 CU: Data memory memory overflow

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The utilization for a data memory area is too large.
Fault value (r0949, interpret binary):
Bit 0 = 1: High-speed data memory 1 overloaded
Bit 1 = 1: High-speed data memory 2 overloaded
Bit 2 = 1: High-speed data memory 3 overloaded
Bit 3 = 1: High-speed data memory 4 overloaded

Remedy: - de-activate the function module.
- de-activate drive object.
- remove the drive object from the target topology.

A01069 Parameter backup and device incompatible

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The parameter backup (on the memory card or in the drive unit) and the drive device do not match. The module boots with the factory settings.
Example:
Devices A and B. are not compatible and a memory card with the parameter backup for device A is inserted in device B.

Remedy: - insert a memory card with compatible parameter backup and carry out a POWER ON.
- insert a memory card without parameter backup and carry out a POWER ON.
- if required, withdraw the memory card and carry out POWER ON.
- carry out a hardware reset (p0972 = 1).
- save the parameters (p0971 = 1).

F01072 Memory card restored from the backup copy

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The Control Unit was switched-off while writing to the memory card. This is why the visible partition became defective.
After switching on, the data from the non-visible partition (backup copy) were written to the visible partition.

Remedy: Check that the firmware and parameterization is up-to-date.

A01073 (N) POWER ON required for backup copy on memory card

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: The parameter assignment on the visible partition of the memory card has changed.
In order that the backup copy on the memory card is updated on the non-visible partition, it is necessary to carry out a POWER ON or hardware reset (p0972) of the Control Unit.
Note:
It is possible that a new POWER ON is requested via this alarm (e.g. after saving with p0971 = 1).

Remedy: - carry out a POWER ON (switch-off/switch-on) for the Control Unit.
- carry out a hardware reset (RESET button, p0972).

F01105 (A)	CU: Insufficient memory
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	OFF1
Acknowledge:	POWER ON
Cause:	Too many data sets are configured on this Control Unit. Fault value (r0949, interpret decimal): Only for internal Siemens troubleshooting.
Remedy:	- reduce the number of data sets.

F01107	Save to memory card unsuccessful
Message class:	Hardware/software error (1)
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	A data save to the memory card was not able to be successfully carried out. - Memory card is defective. - insufficient space on memory card. Fault value (r0949, interpret decimal): 1: The file on the RAM was not able to be opened. 2: The file on the RAM was not able to be read. 3: A new directory could not be created on the memory card. 4: A new file could not be created on the memory card. 5: A new file could not be written on the memory card.
Remedy:	- try to save again. - replace the memory card or Control Unit.

F01110	CU: More than one SINAMICS G on one Control Unit
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	More than one SINAMICS G type power unit is being operated from the Control Unit. Fault value (r0949, interpret decimal): Number of the second drive with a SINAMICS G type power unit.
Remedy:	Only one SINAMICS G drive type is permitted.

F01111	CU: Mixed operation of drive units illegal
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	Illegal operation of various drive units on one Control Unit: - SINAMICS S together with SINAMICS G - SINAMICS S together with SINAMICS S Value or Combi Fault value (r0949, interpret decimal): Number of the first drive object with a different power unit type.
Remedy:	Only power units of one particular drive type may be operated with one Control Unit.

F01112	CU: Power unit not permissible
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	The connected power unit cannot be used together with this Control Unit. Fault value (r0949, interpret decimal): 1: Power unit is not supported (e.g. PM340).
Remedy:	Replace the power unit that is not permissible by a component that is permissible.

F01120 (A) Terminal initialization has failed

Message class: Hardware/software error (1)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An internal software error occurred while the terminal functions were being initialized.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

F01122 (A) Frequency at the measuring probe input too high

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: The frequency of the pulses at the measuring probe input is too high.
Fault value (r0949, interpret decimal):
1: DI/DO 9 (X122.8)
2: DI/DO 10 (X122.10)
4: DI/DO 11 (X122.11)
8: DI/DO 13 (X132.8)
16: DI/DO 14 (X132.10)
32: DI/DO 15 (X132.11)
64: DI/DO 8 (X122.7)
128: DI/DO 12 (X132.7)
Remedy: Reduce the frequency of the pulses at the measuring probe input.

F01150 CU: Number of instances of a drive object type exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The maximum permissible number of instances of a drive object type was exceeded.
Drive object type:
Drive object type (p0107), for which the maximum permissible number of instances was exceeded.
Number permitted:
Max. permissible number of instances for this drive object type.
Actual number:
Current number of instances for this drive object type.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
ddccbbaa hex: aa = drive object type, bb = number limited, cc = actual number, dd = no significance
Remedy: - switch off the unit.
- suitably restrict the number of instances of a drive object type by reducing the number of inserted components.
- re-commission the unit.

F01151 CU: Number of drive objects of a category exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The maximum permissible number of drive objects of a category was exceeded.
Drive object category:
Drive object category, for which the maximum permissible number of drive objects was exceeded.
Number permitted:
Max. permissible number for this drive object category.
Actual number:
Actual number for this drive object category.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
ddccbbaa hex: aa = drive object category, bb = number limited, cc = actual number, dd = no significance
Remedy: - switch off the unit.
- suitably restrict the number of drive objects of the specified category by reducing the number of inserted components.
- re-commission the unit.

F01205 CU: Time slice overflow

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: Insufficient computation time.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: Contact Technical Support.

F01221 CU: Bas clk cyc too low

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The closed-loop control / monitoring cannot maintain the envisaged clock cycle.
The runtime of the closed-loop control/monitoring is too long for the particular clock cycle or the computing time remaining in the system is not sufficient for the closed-loop control/monitoring.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: Increase the basic clock cycle of DRIVE-CLiQ communication.

F01250 CU: CU-EEPROM incorrect read-only data

Message class: Hardware/software error (1)
Reaction: NONE (OFF2)
Acknowledge: POWER ON
Cause: Error when reading the read-only data of the EEPROM in the Control Unit.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON.
- replace the Control Unit.

A01251 CU: CU-EEPROM incorrect read-write data

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: Error when reading the read-write data of the EEPROM in the Control Unit.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: For alarm value r2124 < 256, the following applies:
- carry out a POWER ON.
- replace the Control Unit.
For alarm value r2124 >= 256, the following applies:
- clear the fault memory (p0952 = 0).
- replace the Control Unit.

F01303 Component does not support the required function

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A function requested by the Control Unit is not supported by a DRIVE-CLiQ component.
Fault value (r0949, interpret decimal):
205: The Sensor Module does not support the selected temperature evaluation (r0458, r0459).
Remedy: Upgrade the firmware of the DRIVE-CLiQ component involved.

A01304 (F) Firmware version of DRIVE-CLiQ component is not up-to-date

Message class: General drive fault (19)
Reaction: NONE
Acknowledge: NONE
Cause: The non-volatile memory has a more recent firmware version than the one in the connected DRIVE-CLiQ component.
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component involved.
Remedy: Update the firmware (p7828, p7829 and commissioning software).

A01306 Firmware of the DRIVE-CLiQ component being updated

Message class: General drive fault (19)
Reaction: NONE
Acknowledge: NONE
Cause: Firmware update is active for at least one DRIVE-CLiQ component.
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component.
Remedy: Not necessary.
This alarm automatically disappears after the firmware has been updated.

A01314 Topology: Component must not be present

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: For a component, "de-activate and not present" is set but this component is still in the topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
aa = component number
bb = component class of the component
cc = connection number
Note:
Component class and connection number are described in F01375.

Remedy: - remove the corresponding component.
- change the setting "de-activate and not present".
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01315 Drive object not ready for operation

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: For the active drive object involved, at least one activated component is missing.
Note:
All other active and operational drive objects can be in the "RUN" state.
Remedy: The alarm automatically disappears after the following action has been taken:
Re-insert the component involved.

A01316 Drive object inactive and again ready for operation

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: If, when inserting a component of the target topology, an inactive, non-operational drive object becomes operational again.
Note:
This is the only message that is displayed for a de-activated drive object.
Remedy: The alarm automatically disappears after the following action has been taken:
Again withdraw the component involved.

A01317 (N) De-activated component again present

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: If a component of the target topology is inserted when a drive object is active.
Note:
This is the only message that is displayed for a de-activated component.
Remedy: The alarm automatically disappears after the following action has been taken:
Again withdraw the component involved.

A01318 BICO: De-activated interconnections present

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: This alarm is used in the following cases:
- if an inactive/non-operational drive object is active again/ready for operation
- if there are items in the list of BI/CI parameters (r9498[0...29], r9499[0...29])
- if the BICO interconnections saved in the list of BI/CI parameters (r9498[0...29], r9499[0...29]) have actually been changed

Remedy: Reset alarm:
- set p9496 to 1 or 2
or
- de-activate the drive object again.

A01319 Inserted component not initialized

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Initialization is required for at least one inserted component.
This is only possible if the pulses are inhibited for all the drive objects.
Remedy: Activate pulse inhibit for all drive objects.

A01321 Topology: Drive object number does not exist in configuration

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: p0978 contains a drive object number that does not exist.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the drive object number can be determined.
Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01322 Topology: Drive object number present twice in configuration

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: A drive object number is present more than once in p0978.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the involved drive object number is located.
Remedy: Set parameter p0009 = 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01323 Topology: More than two partial lists created

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Partial lists are available more than twice in p0978. After the second 0, all must be 0.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the illegal value is located.
Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

A01324 Topology: Dummy drive object number incorrectly created

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In p0978, dummy drive object numbers (255) are only permitted in the first partial list.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the illegal value is located.
Remedy: Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

F01325 Topology: Component number not present in target topology

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The component configured in a parameter (e.g. p0121, p0131, etc.) is not present in the target topology.
Fault value (r0949, interpret decimal):
Configured component number that is not present in target topology.
Remedy: Establish topology and DO configuration consistency.

A01330 Topology: Quick commissioning not possible

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Unable to carry out a quick commissioning. The existing actual topology does not fulfill the requirements.
Alarm value (r2124, interpret hexadecimal):
ccccbbaa hex: cccc = preliminary component number, bb = supplementary information, aa = fault cause
aa = 01 hex = 1 dec:
On one component illegal connections were detected.
- bb = 01 hex = 1 dec: For a Motor Module, more than one motor with DRIVE-CLiQ was detected.
- bb = 02 hex = 2 dec: For a motor with DRIVE-CLiQ, the DRIVE-CLiQ cable is not connected to a Motor Module.
aa = 02 hex = 2 dec:
The topology contains too many components of a particular type.
- bb = 01 hex = 1 dec: There is more than one master Control Unit.
- bb = 02 hex = 2 dec: There is more than 1 infeed (8 for a parallel circuit configuration).
- bb = 03 hex = 3 dec: There are more than 10 Motor Modules (8 for a parallel circuit configuration).
- bb = 04 hex = 4 dec: There are more than 9 encoders.
- bb = 05 hex = 5 dec: There are more than 8 Terminal Modules.
- bb = 07 hex = 7 dec: Unknown component type
- bb = 08 hex = 8 dec: There are more than 6 drive slaves.
- bb = 09 hex = 9 dec: Connection of a drive slave not permitted.
- bb = 0a hex = 10 dec: There is no drive master.
- bb = 0b hex = 11 dec: There is more than one motor with DRIVE-CLiQ for a parallel circuit.
- bb = 0c hex = 12 dec: Different power units are being used in a parallel connection.
- cccc: Not used.
aa = 03 hex = 3 dec:
More than 16 components are connected at a DRIVE-CLiQ socket of the Control Unit.
- bb = 0, 1, 2, 3 means e.g. detected at the DRIVE-CLiQ socket X100, X101, X102, X103.
- cccc: Not used.

aa = 04 hex = 4 dec:
The number of components connected one after the other is greater than 125.
- bb: Not used.
- cccc = preliminary component number of the first component and component that resulted in the fault.
aa = 05 hex = 5 dec:
The component is not permissible.
- bb = 01 hex = 1 dec: SINAMICS G available.
- bb = 02 hex = 2 dec: Chassis available.
- cccc = preliminary component number of the first component and component that resulted in the fault.
aa = 06 hex = 6 dec:
On one component illegal EEPROM data was detected. These must be corrected before the system continues to boot.
- bb = 01 hex = 1 dec: The Order No. [MLFB] of the power unit that was replaced includes a space retainer. The space retainer (*) must be replaced by a correct character.
- cccc = preliminary component number of the component with illegal EEPROM data.
aa = 07 hex = 7 dec:
The actual topology contains an illegal combination of components.
- bb = 01 hex = 1 dec: Active Line Module (ALM) and Basic Line Module (BLM).
- bb = 02 hex = 2 dec: Active Line Module (ALM) and Smart Line Module (SLM).
- bb = 03 hex = 3 dec: SIMOTION control (e.g. SIMOTION D445) and SINUMERIK component (e.g. NX15).
- bb = 04 hex = 4 dec: SINUMERIK control (e.g. SINUMERIK 730.net) and SIMOTION component (e.g. CX32).
- cccc: Not used.
Note:
Connection type and connection number are described in F01375.

Remedy:
- adapt the output topology to the permissible requirements.
- carry out commissioning using the commissioning software.
- for motors with DRIVE-CLiQ, connect the power and DRIVE-CLiQ cable to the same Motor Module (Single Motor Module: DRIVE-CLiQ at X202, Double Motor Module: DRIVE-CLiQ from motor 1 (X1) to X202, from motor 2 (X2) to X203).

For aa = 06 hex = 6 dec and bb = 01 hex = 1 dec:
Correct the order number when commissioning using the commissioning software.

A01331 Topology: At least one component not assigned to a drive object

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: At least one component is not assigned to a drive object.
- when commissioning, a component was not able to be automatically assigned to a drive object.
- the parameters for the data sets are not correctly set.

Alarm value (r2124, interpret decimal):
Component number of the unassigned component.

Remedy: This component is assigned to a drive object.
Check the parameters for the data sets.
Examples:
- encoder interface (p0140, p0141, p0187 ... p0189).
- encoder (p0140, p0142, p0187 ... p0189).
- Terminal Module (p0151).
- option board (p0161).

F01340 Topology: Too many components on one line

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: For the selected communications clock cycle, too many DRIVE-CLiQ components are connected to one line of the Control Unit.

Fault value (r0949, interpret hexadecimal):

xyy hex: x = fault cause, yy = component number or connection number.

1yy:

The communications clock cycle of the DRIVE-CLiQ connection on the Control Unit is not sufficient for all read transfers.

2yy:

The communications clock cycle of the DRIVE-CLiQ connection on the Control Unit is not sufficient for all write transfers.

3yy:

Cyclic communication is fully utilized.

4yy:

The DRIVE-CLiQ cycle starts before the earliest end of the application. An additional dead time must be added to the control. Sign-of-life errors can be expected.

The conditions of operation with a current controller sampling time of 31.25 µs have not been maintained.

5yy:

Internal buffer overflow for net data of a DRIVE-CLiQ connection.

6yy:

Internal buffer overflow for receive data of a DRIVE-CLiQ connection.

7yy:

Internal buffer overflow for send data of a DRIVE-CLiQ connection.

8yy:

The component clock cycles cannot be combined with one another

900:

The lowest common multiple of the clock cycles in the system is too high to be determined.

901:

The lowest common multiple of the clock cycles in the system cannot be generated with the hardware.

Remedy: - check the DRIVE-CLiQ wiring.

- reduce the number of components on the DRIVE-CLiQ line involved and distribute these to other DRIVE-CLiQ sockets of the Control Unit. This means that communication is uniformly distributed over several lines.

For fault value = 1yy - 4yy in addition:

- increase the sampling times (p0112, p0115, p4099). If necessary, for DCC or FBLOCKS, change the assignment of the run-time group (p21000, p20000) so that the sampling time (r21001, r20001) is increased.

- if necessary, reduce the number of cyclically calculated blocks (DCC) and/or function blocks (FBLOCKS).

- reduce the function modules (r0108).

- establish the conditions for operation with a current controller sampling time of 31.25 µs (at the DRIVE-CLiQ line, only operate Motor Modules and Sensor Modules with this sampling time and only use a permitted Sensor Module (e.g. SMC20, this means a 3 at the last position of the order number)).

- For an NX, the corresponding Sensor Module for a possibly existing second measuring system should be connected to a free DRIVE-CLiQ socket of the NX.

For fault value = 8yy in addition:

- check the clock cycles settings (p0112, p0115, p4099). Clock cycles on a DRIVE-CLiQ line must be perfect integer multiples of one another. As clock cycle on a line, all clock cycles of all drive objects in the previously mentioned parameters apply, which have components on the line involved.

For fault value = 9yy in addition:

- check the clock cycles settings (p0112, p0115, p4099). The lower the numerical value difference between two clock cycles, the higher the lowest common multiple. This behavior has a significantly stronger influence, the higher the numerical values of the clock cycles.

F01341 **Topology: Maximum number of DRIVE-CLiQ components exceeded**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Too many DRIVE-CLiQ components were defined in the actual topology.
Note:
Pulse enable is withdrawn and prevented.
Remedy: - check the DRIVE-CLiQ wiring.
- reduce the number components on the DRIVE-CLiQ line involved in order to maintain the maximum quantity structure.

F01354 **Topology: Actual topology indicates an illegal component**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The actual topology indicates at least one illegal component.
Fault value (r0949, interpret hexadecimal):
yyxx hex: yy = component number, xx = cause.
xx = 1: Component at this Control Unit not permissible.
xx = 2: Component in combination with another component not permissible.
Note:
Pulse enable is prevented.
Remedy: Remove the illegal components and restart the system.

F01356 **Topology: There is a defective DRIVE-CLiQ component**

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The actual topology indicates at least one defective DRIVE-CLiQ component.
Fault value (r0949, interpret hexadecimal):
zzyyxx hex:
zz = connection number of the component at which the defective component is connected
yy = component number of the component at which the defective component is connected
xx = fault cause
xx = 1: Component at this Control Unit not permissible.
xx = 2: component with communication defect.
Note:
Pulse enable is withdrawn and prevented.
Remedy: Replace the defective component and restart the system.

F01357 **Topology: Two Control Units identified on the DRIVE-CLiQ line**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: In the actual topology, 2 Control Units are connected with one another through DRIVE-CLiQ.
As standard, this is not permitted.
It is only permitted, if the OA application OALINK is already installed on both Control Units.
Fault value (r0949, interpret hexadecimal):
yyxx hex:
yy = connection number of the Control Unit at which the second Control Unit is connected
xx = component number of the Control Unit at which the second Control Unit is connected
Note:
Pulse enable is withdrawn and prevented.

Remedy: - remove the DRIVE-CLiQ connection, restart the systems, install OALINK on both Control Units and commission.
- remove the connection to the second Control Unit and restart.
- for the S120M component DRIVE-CLiQ extension, interchange the hybrid cable (IN/OUT).

A01358 Topology: Line termination not available

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: At least one line with distributed drives is not terminated. The last participant on the line must be terminated with a line termination connector.
This therefore ensures the degree of protection of the distributed drives.
Alarm value (r2124, interpret hexadecimal):
zzyyxx hex:
zz = connection number of the distributed drive where there is no terminating connector
yy = component number
xx = CU connection number
Remedy: Install the line terminating connector for the last distributed drive.

F01359 Topology: DRIVE-CLiQ performance not sufficient

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The DRIVE-CLiQ performance is not sufficient at one line in order to identify an inserted component.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on).
- Distribute components across several DRIVE-CLiQ lines.
Note:
For this topology, do not withdraw and insert components in operation.

F01360 Topology: Actual topology not permissible

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The detected actual topology is not permissible.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex:
cccc = preliminary component number, bb = no significance, aa = fault cause
aa = 01 hex = 1 dec:
Too many components were detected at the Control Unit. A maximum of 199 components is permissible.
aa = 02 hex = 2 dec:
The component type of a component is not known.
aa = 03 hex = 3 dec:
It is illegal to combine ALM and BLM.
aa = 04 hex = 4 dec:
It is illegal to combine ALM and SLM.
aa = 05 hex = 5 dec:
It is illegal to combine BLM and SLM.
aa = 06 hex = 6 dec:
A CX32 was not directly connected to a permitted Control Unit.
aa = 07 hex = 7 dec:
An NX10 or NX15 was not directly connected to a permitted Control Unit.
aa = 08 hex = 8 dec:
A component was connected to a Control Unit that is not permitted for this purpose.
aa = 09 hex = 9 dec:
A component was connected to a Control Unit with out-of-date firmware.

aa = 0A hex = 10 dec:
Too many components of a particular type detected.
aa = 0B hex = 11 dec:
Too many components of a particular type detected on a single line.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: For fault cause = 1:
Change the configuration. Connect less than 199 components to the Control Unit.
For fault cause = 2:
Remove the component with unknown component type.
For fault cause = 3, 4, 5:
Establish a valid combination.
For fault cause = 6, 7:
Connect the expansion module directly to a permitted Control Unit.
For fault cause = 8:
Remove component or use a permissible component.
For fault cause = 9:
Upgrade the firmware of the Control Unit to a later version.
For fault cause = 10, 11:
Reduce the number of components.

A01361 Topology: Actual topology contains SINUMERIK and SIMOTION components

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The detected actual topology contains SINUMERIK and SIMOTION components.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex: cc = fault cause, bb = component class of the actual topology, aa = component number of the component
cc = 01 hex = 1 dec:
An NX10 or NX15 was connected to a SIMOTION control.
cc = 02 hex = 2 dec:
A CX32 was connected to a SINUMERIK control.

Remedy: For alarm value = 1:
Replace all NX10 or NX15 by a CX32.
For alarm value = 2:
Replace all CX32 by an NX10 or NX15.

A01362 Topology: Topology rule(s) broken

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: At least one topology rule for the SINAMICS S120 Combi has been broken.
In the event of a fault, the ramping up of the drive system is aborted and closed-loop drive control is not enabled.
Alarm value (r2124, interpret decimal):
The alarm value indicates which rule has been violated.
1: The S120 Combi may only be wired via DRIVE-CLiQ socket X200 to X100 on the NCU.
2: Only one Single Motor Module (SMM) or one Double Motor Module (DMM) may be connected via X200 to the DRIVE-CLiQ socket X101 on the NCU.
3: Only one Terminal Module 54F (TM54F) or one DRIVE-CLiQ Hub Module (hub) may be connected via X500 to the DRIVE-CLiQ socket X102 on the NCU.
4: Only Sensor Modules may be connected to DRIVE-CLiQ sockets X201 up to X203 (3-axis) or X204 (4-axis) on the S120 Combi.
5: Only one Sensor Module, type SMC20 or SME20 may be connected to DRIVE-CLiQ socket X205 (X204 is not available for 3-axis).

6: If a Single Motor Module is being used as the first expansion axis, only one more Single Motor Module may be connected (via X200 to X201 on the first Single Motor Module).
7: Only Sensor Modules may be connected to the corresponding DRIVE-CLiQ socket X202 on any Single Motor Modules which may be present.
8: For a second Single Motor Module or for a Double Motor Module, it is not permissible to connect anything at X201.
9: If a Double Motor Module is used as an expansion axis, only Sensor Modules may be connected to X202 and X203.
10: If a Terminal Module 54F (TM54F) is configured, only one DRIVE-CLiQ Hub Module (DMC20, DME20) may be connected to X501 of the TM54F module via DRIVE-CLiQ socket X500.
11: On the DRIVE-CLiQ Hub Module, only Sensor Modules Cabinet (SMC) and Sensor Modules External (SME) may be connected to X501 through X505.
12: Only certain Motor Modules may be used for expansion axes.
13: For an S120 Combi with 3 axes, nothing must be connected at the DRIVE-CLiQ Hub Module at X503.

Remedy: Evaluate the alarm value and ensure compliance with the corresponding topology rule(s).

F01375 Topology: Connection duplicated between two components

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When checking the actual topology, a ring-type connection was detected.
The fault value describes a component contained in the ring.
Fault value (r0949, interpret hexadecimal):
ccbbaaaa hex:
cc = connection number (%3)
bb = component class (% 2)
aaaa = preliminary component number (%1)
Component class:
0: Component unknown.
1: Control Unit
2: Motor Module
3: Line Module
4: Sensor Module
5: Voltage Sensing Module
6: Terminal Module
7: DRIVE-CLiQ Hub Module
8: Controller Extension
9: Filter Module
10: Hydraulic Module.
49: DRIVE-CLiQ component
50: Option slot
60: Encoder
70: DRIVE-CLiQ motor
71: Hydraulic cylinder
72: Hydraulic valve
80: Motor
Connection number:
0: Port 0, 1: Port 1, 2: Port 2, 3: Port 3, 4: Port 4, 5: Port 5
10: X100, 11: X101, 12: X102, 13: X103, 14: X104, 15: X105
20: X200, 21: X201, 22: X202, 23: X203
50: X500, 51: X501, 52: X502, 53: X503, 54: X504, 55: X505

Remedy: Output the fault value and remove the specified connection.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

F01380 Topology: Actual topology EEPROM defective

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: POWER ON

Cause: When detecting the actual topology, a component with a defective EEPROM was detected.
Fault value (r0949, interpret hexadecimal):
bbbbaaaa hex:
bbbb = reserved
aaaa = preliminary component number of the defective components

Remedy: Output the fault value and remove the defected component.

A01381 Topology: power unit incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a power unit in the actual topology that has been incorrectly inserted.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01382 Topology: Sensor Module incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Sensor Module in the actual topology that has been incorrectly inserted with respect to the target technology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01383 Topology: Terminal Module incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Terminal Module in the actual topology that has been incorrectly inserted with respect to the target technology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01384 Topology: DRIVE-CLiQ Hub Module incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ Hub Module in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01385 Topology: Controller Extension incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a controller extension 32 (CX32) in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01386 Topology: DRIVE-CLiQ component incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ component in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01389 Topology: Motor with DRIVE-CLiQ incorrectly inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a motor with DRIVE-CLiQ in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01416 Topology: Component additionally inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: A component that has not been configured has been identified.

Remedy: Adapting topologies:
- remove the additional component in the actual topology.
- download the target topology that matches the actual topology (commissioning software).

A01420 DRIVE-CLiQ component different

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The component connected at the DRIVE-CLiQ socket does not correspond to the DRIVE-CLiQ component that was previously connected.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - insert the correct component.
- restore the factory setting.
- download an appropriate project.

A01425 Topology: Serial number different

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component. The serial number is different.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = reserved
cc = number of differences (%3)
bb = component class (% 2)
aa = component number (%1)
Note:
The component class is described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
For byte cc:
cc = 1 --> can be acknowledged using p9904 or p9905.
cc > 1 --> can be acknowledged using p9905 and can be de-activated using p9906 or p9907/p9908.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).
See also: p9904 (Topology comparison acknowledge differences), p9905 (Device specialization)

A01428 Topology: Incorrect connection used

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component. For a component, another connection was used.
The different connections of a component are described in the alarm value.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number of the target topology (%4)
cc = connection number of the actual topology (%3)
bb = component class (% 2)
aa = component number (%1)
Note:
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting topologies:
- reinsert the DRIVE-CLiQ cable to the component (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).
See also: p9904 (Topology comparison acknowledge differences)

F01451 Topology: Target topology is invalid

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: An error was detected in the target topology.
The target topology is invalid.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex: cccc = index error, bb = component number, aa = fault cause
aa = 1B hex = 27 dec: Error not specified.
aa = 1C hex = 28 dec: Value illegal.
aa = 1D hex = 29 dec: Incorrect ID.
aa = 1E hex = 30 dec: Incorrect ID length.
aa = 1F hex = 31 dec: Too few indices left.
aa = 20 hex = 32 dec: component not connected to Control Unit.

Remedy: Reload the target topology using the commissioning software.

A01481 (N) Topology: power unit not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a power unit that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01482 DRIVE-CLiQ component Sensor Module missing

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: No DRIVE-CLiQ component is connected at the DRIVE-CLiQ socket, even though one is parameterized.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: - connect DRIVE-CLiQ component
- appropriately parameterize the drive unit.

A01483 Topology: Terminal Module not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Terminal Module that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01484 Topology: DRIVE-CLiQ Hub Module not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ Hub Module missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01485 Topology: Controller Extension not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Control Extension (CX32) missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01486 Topology: DRIVE-CLiQ component not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ component missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01487 Topology: Option slot component not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected an option slot component missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

A01489 Topology: Motor with DRIVE-CLiQ not inserted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a motor with DRIVE-CLiQ missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

Remedy: Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

F01505 (A) BICO: Interconnection cannot be established

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A PROFIdrive telegram has been set (p0922).
An interconnection contained in the telegram was not able to be established.
Fault value (r0949, interpret decimal):
Parameter receiver that should be changed.
Remedy: Establish another interconnection.

A01507 (F, N) BICO: Interconnections to inactive objects present

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: There are BICO interconnections to an inactive/inoperable drive object.
The BI/CI parameters involved are listed in r9498.
The associated BO/CO parameters are listed in r9499.
The list of the BICO interconnections to other drive objects is displayed in r9491 and r9492 of the de-activated drive object.
Note:
r9498 and r9499 are only written to, if p9495 is not set to 0.
Alarm value (r2124, interpret decimal):
Number of BICO interconnections found to inactive drive objects.
Remedy: - set all open BICO interconnections centrally to the factory setting with p9495 = 2.
- make the non-operational drive object active/operational again (re-insert or activate components).

A01508 BICO: Interconnections to inactive objects exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The maximum number of BICO interconnections (signal sinks) when de-activating a drive object was exceeded.
When de-activating a drive object, all BICO interconnections (signal sinks) are listed in the following parameters:
- r9498[0...29]: List of the BI/CI parameters involved.
- r9499[0...29]: List of the associated BO/CO parameters.
Remedy: The alarm automatically disappears as soon as no BICO interconnection (value = 0) is entered in r9498[29] and r9499[29].
Notice:
When re-activating the drive object, all BICO interconnections should be checked and if required, re-established.

F01510 BICO: Signal source is not float type

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The requested connector output does not have the correct data type. This interconnection is not established.
Fault value (r0949, interpret decimal):
Parameter number to which an interconnection should be made (connector output).
Remedy: Interconnect this connector input with a connector output having a float data type.

F01511 (A) BICO: Interconnection with different scalings

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The requested BICO interconnection was established. However, a conversion is made between the BICO output and BICO input using the reference values.
- the BICO output has different normalized units than the BICO input.
- message only for interconnections within a drive object.

Example:
The BICO output has, as normalized unit, voltage and the BICO input has current.
This means that the factor p2002/p2001 is calculated between the BICO output and the BICO input.
p2002: contains the reference value for current
p2001: contains the reference value for voltage
Fault value (r0949, interpret decimal):
Parameter number of the BICO input (signal sink).

Remedy: Not necessary.

F01512 BICO: No scaling available

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An attempt was made to determine a conversion factor for a scaling that does not exist.
Fault value (r0949, interpret decimal):
Unit (e.g. corresponding to SPEED) for which an attempt was made to determine a factor.
Remedy: Apply scaling or check the transfer value.

F01513 (N, A) BICO: Interconnection cross DO with different scalings

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The requested BICO interconnection was established. However, a conversion is made between the BICO output and BICO input using the reference values.
An interconnection is made between different drive objects and the BICO output has different normalized units than the BICO input or the normalized units are the same but the reference values are different.
Example 1:
BICO output with voltage normalized unit, BICO input with current normalized unit, BICO output and BICO input lie in different drive objects. This means that the factor p2002/p2001 is calculated between the BICO output and the BICO input.
p2002: contains the reference value for current
p2001: contains the reference value for voltage
Example 2:
BICO output with voltage normalized unit in drive object 1 (DO1), BICO input with voltage normalized unit in drive object 2 (DO2). The reference values for voltage (p2001) of the two drive objects have different values. This means that the factor p2001(DO1)/p2001(DO2) is calculated between the BICO output and the BICO input.
p2001: contains the reference value for voltage, drive objects 1, 2
Fault value (r0949, interpret decimal):
Parameter number of the BICO input (signal sink).
Remedy: Not necessary.

A01514 (F) BICO: Error when writing during a reconnect

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: During a reconnect operation (e.g. while booting or downloading - but can also occur in normal operation) a parameter was not able to be written to.
Example:
When writing to BICO input with double word format (DWORD), in the second index, the memory areas overlap (e.g. p8861). The parameter is then reset to the factory setting.
Alarm value (r2124, interpret decimal):
Parameter number of the BICO input (signal sink).
Remedy: Not necessary.

F01515 (A)	BICO: Writing to parameter not permitted as the master control is active
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	When changing the number of CDS or when copying from CDS, the master control is active.
Remedy:	If required, return the master control and repeat the operation.

A01590 (F)	Drive: Motor maintenance interval expired
Message class:	General drive fault (19)
Reaction:	NONE
Acknowledge:	NONE
Cause:	The selected service/maintenance interval for this motor was reached. Alarm value (r2124, interpret decimal): Motor data set number. See also: p0650 (Actual motor operating hours), p0651 (Motor operating hours maintenance interval)
Remedy:	carry out service/maintenance and reset the service/maintenance interval (p0651).

F01600	SI P1 (CU): STOP A initiated
Message class:	Safety monitoring channel has identified an error (10)
Reaction:	OFF2
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	The drive-integrated "Safety Integrated" function on processor 1 has detected an error and initiated a STOP A. - forced checking procedure (test stop) of the safety switch-off signal path on processor 1 unsuccessful. - subsequent response to fault F01611 (defect in a monitoring channel). Fault value (r0949, interpret decimal): 0: Stop request from processor 2. 1005: - Pulses suppressed although STO not selected and there is no internal STOP A present. - For a Power Module with "STO via terminals at the Power Module" (STO_A/STO_B), these terminals are active (DIP switch to "ON"). However, the "STO via terminals at the Power Module" function has not been enabled (p9601.7 = p9801.7 = 0). 1010: Pulses enabled although STO is selected or an internal STOP A is present. 1011: Internal fault for the pulse enable in the Power Module. 1030: Feedback signal of the safety switch-off signal paths for the "STO via terminals at the Power Module" function different. 9999: Subsequent response to fault F01611.
Remedy:	- select Safe Torque Off and de-select again. - carry out a POWER ON (switch-off/switch-on) for all components. - replace Power Module involved. For fault value = 1005: - de-activate terminals STO_A/STO_B on the Power Module (set both DIP-switches to "OFF") or enable the "STO via terminals at the Power Module" function. For fault value = 1030: - check the discrepancy time, and if required, increase the value (p9650/p9850). - check the STO terminal at the Power Module (contact problems). For fault value = 9999: - carry out diagnostics for fault F01611. Note: PM: Power Module STO: Safe Torque Off

F01611 (A) SI P1 (CU): Defect in a monitoring channel

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-integrated "Safety Integrated" function on processor 1 has detected a fault in the crosswise data comparison between the two monitoring channels and has initiated a STOP F.

Fault F01600 (SI P1: STOP A initiated) is output as a consequence of this fault.

Fault value (r0949, interpret decimal):

0: Stop request from the other monitoring channel.

1 ... 999:

Number of the cross-compared data that resulted in this fault. This number is also displayed in r9795.

2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.

3: SI F-DI changeover discrepancy time (p9650, p9850).

8: SI PROFIsafe address (p9610, p9810).

9: SI debounce time for STO (p9651, p9851).

1000: Watchdog timer has expired.

Within the time of approx. 5 x p9650, alternatively, the following was defined:

- the signal at F-DI continually changed with time intervals less than or equal to the discrepancy time (p9650/p9850).
- via PROFIsafe, STO (also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

1001, 1002: Initialization error, change timer / check timer.

1950: Module temperature outside the permissible temperature range.

1951: Module temperature not plausible.

2000: Status of the STO selection for both monitoring channels different.

2001: Feedback signal of safe pulse suppression for both monitoring channels different.

2002: Status of the delay timer SS1 for both monitoring channels different (status of the timer in p9650/p9850).

2003: Status of the STO terminal for both monitoring channels different.

6000 ... 6166:

PROFIsafe fault values (PROFIsafe driver for PROFIBUS DP V1/V2 and PROFINET).

For these fault values, the failsafe control signals (failsafe values) are transferred to the safety functions.

6000: An internal software error has occurred (only for internal Siemens troubleshooting).

6064 ... 6071: error when evaluating the F parameter. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.

6064: Destination address and PROFIsafe address are different (F_Dest_Add).

6065: Destination address not valid (F_Dest_Add).

6066: Source address not valid (F_Source_Add).

6067: Watchdog time not valid (F_WD_Time).

6068: Incorrect SIL level (F_SIL).

6069: Incorrect F-CRC length (F_CRC_Length).

6070: Incorrect F parameter version (F_Par_Version).

6071: CRC error for the F parameters (CRC1). The transferred CRC value of the F parameters does not match the value calculated in the PROFIsafe driver.

6072: F parameterization is inconsistent.

6165: A communications error was identified when receiving the PROFIsafe telegram. The fault may also occur if an inconsistent or out-of-date PROFIsafe telegram has been received after switching the Control Unit off and on or after plugging in the PROFIBUS/PROFINET cable.

6166: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.

Remedy: For fault values 1 ... 999 described in "Cause":

- check the cross data comparison that resulted in a STOP F.
- carry out a POWER ON (switch-off/switch-on).

For fault value = 1000:

- check the wiring of the F-DI (contact problems).
- PROFIsafe: Remove contact problems/faults at the PROFIBUS master/PROFINET controller.
- check the discrepancy time, and if required, increase the value (p9650/p9850).

For fault value = 1001, 1002:

- carry out a POWER ON (switch-off/switch-on).

For fault value = 1950, 1951:

- Operate the Control Unit in the permissible temperature range.
- replace Control Unit.

For fault value = 2000, 2001, 2002, 2003:

- check the discrepancy time, and if required, increase the value (p9650/p9850).
- check the wiring of the F-DI (contact problems).
- check the causes of the STO selection in r9772. When the SI Motion functions are active (p9501 = 1), STO can also be selected using these functions.

For fault value = 6000:

- carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.
- replace Control Unit.

For fault value = 6064:

- check the setting of the value in the F parameter F_Dest_Add at the PROFIsafe slave.
- check the setting of the PROFIsafe address on processor 1 (p9610) and on processor 2 (p9810).

For fault value = 6065:

- check the setting of the value in the F parameter F_Dest_Add at the PROFIsafe slave. It is not permissible for the destination address to be either 0 or FFFF!

For fault value = 6066:

- check the setting of the value in the F parameter F_Source_Add at the PROFIsafe slave. It is not permissible for the source address to be either 0 or FFFF!

For fault value = 6067:

- check the setting of the value in the F parameter F_WD_Time at the PROFIsafe slave. It is not permissible for the watch time to be 0!

For fault value = 6068:

- check the setting of the value in the F parameter F_SIL at the PROFIsafe slave. The SIL level must correspond to SIL2!

For fault value = 6069:

- check the setting of the value in the F parameter F_CRC_Length at the PROFIsafe slave. The setting of the CRC2 length is 2-byte CRC in the V1 mode and 3-byte CRC in the V2 mode!

For fault value = 6070:

- check the setting of the value in the F parameter F_Par_Version at the PROFIsafe slave. The value for the F parameter version is 0 in the V1 mode and 1 in the V2 mode!

For fault value = 6071:

- check the settings of the values of the F parameters and the F parameter CRC (CRC1) calculated from these at the PROFIsafe slave and, if required, update.

For fault value = 6072:

- check the settings of the values for the F parameters and, if required, correct.

The following combinations are permissible for F parameters F_CRC_Length and F_Par_Version:

F_CRC_Length = 2-byte CRC and F_Par_Version = 0

F_CRC_Length = 3-byte CRC and F_Par_Version = 1

For fault value = 6165:

- if the fault occurs after powering up or after inserting the PROFIBUS/PROFINET cable, acknowledge the fault.
- check the configuration and communication at the PROFIsafe slave.
- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.
- check whether all F parameters of the drive match the F parameters of the F host.

For fault value = 6166:

- check the configuration and communication at the PROFIsafe slave.
- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.
- evaluate diagnostic information in the F host.
- check PROFIsafe connection.
- check whether all F parameters of the drive match the F parameters of the F host.

For fault values that are described in "Cause":
- carry out a POWER ON (switch-off/switch-on).
- contact Technical Support.
- replace Control Unit.

Note:
F-DI: Failsafe Digital Input
STO: Safe Torque Off

N01620 (F, A) SI P1 (CU): Safe Torque Off active

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The "Safe Torque Off" (STO) function has been selected on processor 1 using the input terminal and is active.

Note:
This message does not result in a safety stop response.

Remedy: Not necessary.

Note:
STO: Safe Torque Off

N01621 (F, A) SI P1 (CU): Safe Stop 1 active

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The "Safe Stop 1" function (SS1) was selected on processor 1 (P1) and is active.

Note:
This message does not result in a safety stop response.

Remedy: Not necessary.

Note:
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

F01625 SI P1 (CU): Sign-of-life error in safety data

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-integrated "Safety Integrated" function on processor 1 has detected an error in the sign-of-life of the safety data and initiated a STOP A.
- there is a communication error between processor 1 and processor 2 or communication has failed.
- a time slice overflow of the safety software has occurred.

Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy:
- select Safe Torque Off and de-select again.
- carry out a POWER ON (switch-off/switch-on).
- check whether additional faults are present and if required, perform diagnostics.
- check the electrical cabinet design and cable routing for EMC compliance

F01630 SI P1 (CU): Brake control error

Message class: Safety monitoring channel has identified an error (10)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The "Safety Integrated" function integrated in the drive on processor 1 (P1) has detected a brake control error and initiated a STOP A.
- motor cable is not shielded correctly.
- defect in the Safe Brake Module, in the Power Module or in the Control Unit.

Fault value (r0949, interpret decimal):
10, 11:
Fault in "open holding brake" operation.
- parameter p1278 incorrectly set.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC de-activated)).
- ground fault in brake cable.
20:
Fault in "brake open" state.
- short-circuit in brake winding.
30, 31:
Fault in "close holding brake" operation.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC de-activated)).
- short-circuit in brake winding.
40:
Fault in "brake closed" state.
50:
Fault in the brake control circuit of the Control Unit or communication fault between the Control Unit and Motor Module (brake control).

Remedy:
- check parameter p1278 (for SBC, only p1278 = 0 is permissible).
- select Safe Torque Off and de-select again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check the Safe Brake Module connection.
- check that the electrical cabinet design and cable routing are in compliance with EMC regulations (e.g. shield of the motor cable and brake conductors are connected with the shield connecting plate and the motor connectors are tightly screwed to the housing).
- replace the Safe Brake Module.
- replace Power Module.
- replace the Control Unit.

Note:
SBC: Safe Brake Control
SI: Safety Integrated

A01631 (F, N) SI P1 (CU): motor holding brake/SBC configuration not practical

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: A configuration of motor holding brake and SBC was detected that is not practical.
The following configurations can result in this message:
- "No motor holding brake available" (p1215 = 0) and "SBC" enabled (p9602 = 1).
- "Motor holding brake just like the sequence control, connection via BICO" (p1215 = 3) and "SBC" enabled (p9602 = 1).

Note:
SBC: Safe Brake Control

Remedy: Check the parameterization of the motor holding brake and SBC and correct.
See also: p1215 (Motor holding brake configuration), p9602 (SI enable Safe Brake Control (processor 1)), p9802 (SI enable Safe Brake Control (processor 2))

F01640 SI P1 (CU): component replacement identified and acknowledgment/save required

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The "Safety Integrated" function integrated in the drive has identified that a component has been replaced.
It is no longer possible to operate the drive.
When safety functions are active, after a component has been replaced it is necessary to carry out a partial acceptance test.
Fault value (r0949, interpret binary):
Bit 0 = 1:
It has been identified that the Control Unit has been replaced.
Bit 1 = 1:
It has been identified that the Motor Module/Hydraulic Module has been replaced.
Bit 2 = 1:
It has been identified that the Power Module has been replaced.
Bit 3 = 1:
It has been identified that the Sensor Module channel 1 has been replaced.
Bit 4 = 1:
It has been identified that the Sensor Module channel 2 has been replaced.
Bit 5 = 1:
It has been identified that the sensor channel 1 has been replaced.
Bit 6 = 1:
It has been identified that the sensor channel 2 has been replaced.

Remedy: - acknowledge component replacement (p9702 = 29).
- save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").
- acknowledge fault (e.g. BI: p2103).
Note:
In addition to the fault, diagnostics bits r9776.2 and r9776.3 are set.
See also: r9776 (SI diagnostics)

F01641 SI P1 (CU): component replacement identified and save required

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The "Safety Integrated" function integrated in the drive has identified that a component has been replaced.
No additional fault response is initiated, therefore operation of the particular drive is not restricted.
When safety functions are active, after a component has been replaced it is necessary to carry out a partial acceptance test.
Fault value (r0949, interpret binary):
Bit 0 = 1:
It has been identified that the Control Unit has been replaced.
Bit 1 = 1:
It has been identified that the Motor Module/Hydraulic Module has been replaced.
Bit 2 = 1:
It has been identified that the Power Module has been replaced.
Bit 3 = 1:
It has been identified that the Sensor Module channel 1 has been replaced.
Bit 4 = 1:
It has been identified that the Sensor Module channel 2 has been replaced.
Bit 5 = 1:
It has been identified that the sensor channel 1 has been replaced.
Bit 6 = 1:
It has been identified that the sensor channel 2 has been replaced.

Remedy: - save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").
- acknowledge fault (e.g. BI: p2103).
See also: r9776 (SI diagnostics)

F01649 SI P1 (CU): Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An internal error in the Safety Integrated software on processor 1 has occurred.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on).
- re-commission the "Safety Integrated" function and carry out a POWER ON.
- contact Technical Support.
- replace Control Unit.

F01650 SI P1 (CU): Acceptance test required

Message class: Safety monitoring channel has identified an error (10)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-integrated "Safety Integrated" function on processor 1 requires an acceptance test.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
130: Safety parameters for processor 2 not available.
Note:
This fault value is always output when Safety Integrated is commissioned for the first time.
1000: Reference and actual checksum on processor 1 are not identical (booting).
- at least one checksum-checked piece of data is defective.
- safety parameters set offline and loaded into the Control Unit.
2000: Reference and actual checksum on processor 1 are not identical (commissioning mode).
- reference checksum incorrectly entered on processor 1 (p9799 not equal to r9798).
- when de-activating the safety functions, p9501 was not deleted.
2001: Reference and actual checksum on processor 2 are not identical (commissioning mode).
- reference checksum incorrectly entered on processor 2 (p9899 not equal to r9898).
- when de-activating the safety functions, p9501 was not deleted.
2002: Enable of safety-related functions between the processor 1 and processor 2 differ (p9601 not equal to p9801).
2003: Acceptance test is required as a safety parameter has been changed.
2004: An acceptance test is required because a project with enabled safety-functions has been downloaded.
2005: The Safety logbook has identified that a functional safety checksum has changed. An acceptance test is required.
2010: Enable of safety-related brake control between the two monitoring channels differ (p9602 not equal to p9802).
2020: Error when saving the safety parameters for the processor 2.
9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.
Remedy: For fault value = 130:
- carry out safety commissioning routine.
For fault value = 1000:
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.
- Using STARTER, activate the safety parameters for the drive involved (change settings, copy parameters, activate settings).
For fault value = 2000:
- check the safety parameters on processor 1 and adapt the reference checksum (p9799).

For fault value = 2001:
- check the safety parameters on processor 2 and adapt the reference checksum (p9899).
For fault value = 2002:
- enable the safety-related functions on processor 1 and check processor 2 (p9601 = p9801).
For fault value = 2003, 2004, 2005:
- carry out an acceptance test and generate an acceptance report.
The fault with fault value 2005 can only be acknowledged when the "STO" function is de-selected.
For fault value = 2010:
- check the enable the safety-related brake control on both monitoring channels (p9602 = p9802).
For fault value = 2020:
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.
For fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.
Note:
STO: Safe Torque Off
See also: p9799 (SI setpoint checksum SI parameters (processor 1)), p9899 (SI setpoint checksum SI parameters (processor 2))

F01651 SI P1 (CU): Synchronization safety time slices unsuccessful

Message class: Hardware/software error (1)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The "Safety Integrated" function requires synchronization of the safety time slices between processor 1 and processor 2. This synchronization routine was unsuccessful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: Carry out a POWER ON (switch-off/switch-on).

F01653 SI P1 (CU): PROFIBUS/PROFINET configuration error

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: There is a PROFIBUS/PROFINET configuration error for using Safety Integrated monitoring functions with a higher-level control.
Note:
For safety functions that have been enabled, this fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
200: A safety slot for receive data from the control has not been configured.
210, 220: The configured safety slot for the receive data from the control has an unknown format.
230: The configured safety slot for the receive data from the F-PLC has the incorrect length.
231: The configured safety slot for the receive data from the F-PLC has the incorrect length.
250: A PROFIsafe slot is configured in the higher-level F control, however PROFIsafe is not enabled in the drive.
300: A safety slot for the send data to the control has not been configured.
310, 320: The configured safety slot for the send data to the control has an unknown format.
330: The configured safety slot for the send data to the F-PLC has the incorrect length.
331: The configured safety slot for the send data to the F-PLC has the incorrect length.

Remedy: The following generally applies:
- check and, if necessary, correct the PROFIBUS/PROFINET configuration of the safety slot on the master side.
- upgrade the Control Unit software.
For fault value = 250:
- remove the PROFIsafe configuring in the higher-level F control or enable PROFIsafe in the drive.
For fault value = 231, 331:
- configure the PROFIsafe telegram matching the parameterization in the F-PLC.

The following applies for p9501.30 = 1 (F-DI via PROFIsafe is enabled):
- PROFIsafe telegram 900 must be configured.
For p9501.30 = 0 (F-DI not enabled via PROFIsafe), the following applies:
- PROFIsafe telegram 30 must be configured.

A01654 (F) SI P1 (CU): Deviating PROFIsafe configuration

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The configuration of a PROFIsafe telegram in the higher-level control (F-PLC) does not match the parameterization in the drive.
Note:
This message does not result in a safety stop response.
Alarm value (r2124, interpret decimal):
1:
A PROFIsafe telegram is configured in the higher-level control, however PROFIsafe is not enabled in the drive (p9601.3).
2:
PROFIsafe is parameterized in the drive; however, a PROFIsafe telegram has not been configured in the higher-level control.

Remedy: The following generally applies:
- check and, if necessary, correct the PROFIsafe configuration in the higher-level control.
For alarm value = 1:
- remove the PROFIsafe configuring in the higher-level F control or enable PROFIsafe in the drive.
For alarm value = 2:
- configure the PROFIsafe telegram to match the parameterization in the higher-level F-control.

F01655 SI P1 (CU): Align monitoring functions

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An error has occurred when aligning the Safety Integrated monitoring functions on processor 1 and processor 2. No common set of supported SI monitoring functions was able to be determined.
- there is a communication error between processor 1 and processor 2 or communication has failed.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance

F01656 SI P1 (CU): Parameter processor 2 error

Message class: Hardware/software error (1)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: When accessing the Safety Integrated parameters for the processor 2 in the non-volatile memory, an error has occurred.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
129: Safety parameters for processor 2 corrupted.
131: Internal software error
132: Communication errors when uploading or downloading the safety parameters.
255: Internal software error on the Control Unit.

Remedy: - re-commission the safety functions.
- replace the memory card or Control Unit.
For fault value = 129:
- activate the safety commissioning mode (p0010 = 95).
- adapt the PROFIsafe address (p9610).
- start the copy function for SI parameters (p9700 = D0 hex).
- acknowledge data change (p9701 = DC hex).
- exit the safety commissioning mode (p0010 = 0).
- save all parameters (p0971 = 1 or "copy RAM to ROM").
- carry out a POWER ON (switch-off/switch-on) for the Control Unit.
For fault value = 132:
- check the electrical cabinet design and cable routing for EMC compliance

F01658 SI P1 (CU): PROFIsafe telegram number not suitable

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The PROFIsafe telegram number in p60022 is unsuitable for the enabled safety functions.
Possible causes:
- When PROFIsafe is not enabled (p9601.3 = 0), then it is not permissible to select a PROFIsafe telegram in p60022.
- When PROFIsafe is enabled (p9601.3 = 1), then a PROFIsafe telegram must be selected in p60022.
- When the transfer of the F-DIs via PROFIsafe (p9501.30 = 1) is selected, then telegram 900 must be selected in p60022 (this only applies to Control Units, which support Extended Functions via PROFIsafe (r9771.4 = 1)).
Note:
This fault does not result in a safety stop response.
See also: p9501 (SI Motion enable safety functions (processor 1)), p9601 (SI enable functions integrated in the drive (processor 1)), p60022 (PROFIsafe telegram selection)

Remedy: Select the telegram number that matches the Safety functions that have been enabled.

F01659 SI P1 (CU): Write request for parameter rejected

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The write request for one or several Safety Integrated parameters on processor 1 was rejected.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
1: The Safety Integrated password is not set.
2: A reset of the drive parameters was selected. However, the Safety Integrated parameters were not reset, as Safety Integrated is presently enabled.
3: The interconnected STO input is in the simulation mode.
10: An attempt was made to enable the STO function although this cannot be supported.
14: An attempt was made to enable the PROFIsafe communications although this cannot be supported.
15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.
18: An attempt was made to enable the PROFIsafe function for Basic Functions although this cannot be supported.
20: An attempt was made to simultaneously enable both the drive-integrated motion monitoring functions via integrated F-DI and STO via terminals, even though these cannot be supported at the same time.
21: An attempt was made to enable the Safety Integrated functions although these cannot be supported by the connected Power Module.
26: At a digital input of the Control Unit used by Safety Integrated, an attempt was made to activate the simulation mode.
28: An attempt was made to enable the "STO via terminals at the Power Module" function although this cannot be supported.
See also: p0970 (Reset drive parameters), p3900 (Completion of quick commissioning), r9771 (SI common functions (processor 1)), r9871 (SI common functions (processor 2))

Remedy: For fault value = 1:
- set the Safety Integrated password (p9761).

For fault value = 2:
- inhibit Safety Integrated (p9501, p9601) or reset safety parameters (p0970 = 5), then reset the drive parameters again.

For fault value = 3:
- end the simulation mode for the digital input (p0795).

For fault value = 10, 14, 15, 18:
- check whether there are faults in the safety function alignment (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Control Unit that supports the required function.

For fault value = 20:
- correct the enable setting (p9601).

For fault value = 21:
- use a Power Module that supports the Safety Integrated functions.

For fault value = 26:
- de-activate the simulation mode for the set signal source for STO (p9620) (p0795).
- de-activate the simulation mode (p0795) for the F-DIs used by the Safety Integrated functions (r10049, p10006, p10009).
- For the set test stop of the F-DO with feedback signal input (p10046, p10047), check the simulation mode, and if required, de-activate (p0795).

For fault value = 28: use the power unit with the feature "STO via terminals at the Power Module".

Note:
F-DI: Failsafe Digital Input
STO: Safe Torque Off

See also: p9501, p9601, p9761, p9801

F01660 SI P1 (CU): Safety-related functions not supported

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The Power Module does not support the safety-related functions. Safety Integrated cannot be commissioned.

Note:
This fault does not result in a safety stop response.

Remedy:
- use a Power Module that supports the safety-related functions.

F01661 SI P1 (CU): Simulation of the safety inputs active

Message class: General drive fault (19)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The simulation of the digital inputs of the Control Unit (p0795) is active.
It is not permissible that safety inputs are simulated.
Fault value (r0949, interpret binary):
The displayed bits indicate which digital inputs must not be simulated.

Remedy:
- de-activate the simulation of the digital inputs of the Control Unit for the safety inputs (p0795).
- acknowledge fault.

F01662 Error internal communications

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: A module-internal communication error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.

F01663 SI P1 (CU): Copying the SI parameters rejected

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: In p9700, the value 87 or 208 is saved or was entered offline.
This is the reason that when booting, an attempt is made to copy Safety Integrated parameters from processor 1 to processor 2. However, no safety-relevant function has been selected on processor 1 (p9501 = 0, p9601 = 0). This is the reason that copying is not possible.
Note:
This fault does not result in a safety stop response.
SI: Safety Integrated
See also: p9700 (SI copy function)
Remedy: - set p9700 to 0.
- check p9501 and/or p9601 and if required, correct.
- restart the copying function by entering the corresponding value into p9700.

F01665 SI P1 (CU): System is defective

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A system defect was detected before the last boot or in the actual one. The system might have been rebooted (reset).
Fault value (r0949, interpret hexadecimal):
40 hex:
- For a Power Module with "STO via terminals at the Power Module" (STO_A/STO_B), these terminals are active (DIP switch to "ON"). However, the "STO via terminals at the Power Module" function has not been enabled (p9601.7 = p9801.7 = 0).
200000 hex, 400000 hex, 8000yy hex (yy any):
- fault in the actual booting/operation.
Additional values:
- defect before the last time that the system booted.
Remedy: - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.
For fault value = 40 hex:
- de-activate terminals STO_A/STO_B on the Power Module (set both DIP-switches to "OFF") or enable the "STO via terminals at the Power Module" function.
For fault value = 200000 hex, 400000 hex, 8000yy hex (yy any):
- ensure that the Control Unit is connected to the Power Module.
- deselect the "STO via terminals at the Power Module" function.

A01666 (F) SI Motion P1 (CU): Steady-state (static) 1 signal at the F-DI for safe acknowledgment

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: A logical 1 signal is present at the F-DI configured in p10006 for more than 10 seconds.
If, at the F-DI no acknowledgment was performed for safe acknowledgment, then a steady-state logical and 0 signal must be present. This avoids unintentional safety-relevant acknowledgment (or the "Internal Event Acknowledge" signal) if a wire breaks or one of the two digital inputs bounces.
Remedy: Set the fail-safe digital input (F-DI) to a logical 0 signal (p10006).
Note:
F-DI: Failsafe Digital Input

A01669 (F, N) SI Motion: Unfavorable combination of motor and power unit

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The combination of motor and power unit used is not suitable for using safe motion monitoring functions without an encoder.

The ratio between the power unit rated current (r0207[0]) and rated motor current (p0305) is greater than 5.

Alarm value (r2124, interpret decimal):

Number of the motor data set, which caused the fault.

Notice:

If this alarm is not observed, then message C01711 or C30711 – with the value 1041 ... 1044 – can sporadically occur.

Remedy: Use a suitable power unit with a lower power rating or a motor with a higher power rating.

A01678 (F) SI: Test stop for STO via terminals required at the PM

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The time (p9661) set to monitor the forced checking procedure (test stop) for the "STO via the terminals at the Power Module" function has been exceeded. A new forced checking procedure is required.

After the next time the "STO via terminals at the Power Module" function is deselected, the message is withdrawn and the monitoring time is reset.

Note:

- this message does not result in a safety stop response.

- the test must be performed within a defined, maximum time interval (p9661, maximum of 9000 hours) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.

See also: p9661 (SI forced checking procedure STO via PM terminals time), r9662 (SI forced checking procedure STO via PM terminals remaining time)

Remedy: Select the "STO via terminals at the Power Module" function and then deselect again.

Note:

PM: Power Module

SI: Safety Integrated

STO: Safe Torque Off

F01680 SI Motion P1 (CU): Checksum error safety monitoring functions

Message class: Safety monitoring channel has identified an error (10)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual checksum calculated by the drive and entered in r9728 via the safety-relevant parameters does not match the reference checksum saved in p9729 at the last machine acceptance.

Safety-relevant parameters have been changed or a fault is present.

Note:

This fault results in a STOP A that can be acknowledged.

Fault value (r0949, interpret decimal):

0: Checksum error for SI parameters for motion monitoring.

1: Checksum error for SI parameters for actual values.

2: Checksum error for SI parameters for component assignment.

Remedy: - check the safety-relevant parameters and if required, correct.

- execute the function "Copy RAM to ROM".

- perform a POWER ON if safety parameters requiring a POWER ON have been modified.

- carry out an acceptance test.

F01681 SI Motion P1 (CU): Incorrect parameter value

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameter cannot be parameterized with this value.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
yyyy = 0:
No information available.
xxxx = 9501:
It is not permissible to enable the function "n < nx hysteresis and filtering" (p9501.16) in conjunction with the function "Extended functions without selection" (p9601.5).
xxxx = 9522:
The gear stage was set too high.
xxxx = 9547:
Parameter p9547 has been set too low.
xxxx = 9585:
For Safety without encoder and synchronous motor, p9585 must be set to 4.

Remedy: Correct the parameter value.
If xxxx = 9547:
With hysteresis/filtering enabled (p9501.16 = 1), the following applies:
Set parameters p9546/p9346 and p9547/p9347 acc. to the following rule: p9546 >= 2 x p9547; p9346 >= 2 x p9347
If xxxx = 9522 and 9585:
Correct the parameter value.

F01682 SI Motion P1 (CU): Monitoring function not supported

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The monitoring function enabled in p9501, p9601 or p9801 is not supported in this firmware version.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
1: Monitoring function SLP not supported (p9501.1).
2: Monitoring function SCA not supported (p9501.7 and p9501.8 ... 15).
3: Monitoring function SLS override not supported (p9501.5).
4: Monitoring function external ESR activation not supported (p9501.4).
5: Monitoring function F-DI in PROFIsafe not supported (p9501.30).
6: Enable actual value synchronization not supported (p9501.3).
9: Monitoring function not supported by the firmware or enable bit not used.
11: Only encoderless monitoring functions integrated in the drive are supported.
12: Safety Integrated for SINUMERIK is not supported on this Control Unit.
20: Motion monitoring functions integrated in the drive are only supported in conjunction with PROFIsafe (p9501/p9601.1 ... 2 and p9801.1 ... 2).
21: PROFIsafe only supported in conjunction with motion monitoring functions integrated in the drive (p9501/p9601.1 ... 2 and p9801.1 ... 2).
23: CU240 does not support monitoring functions requiring an encoder.
25: Drive-integrated motion monitoring functions not supported (p9501, p9601.2).
28: Encoderless monitoring functions are not supported for synchronous motors (p9507.2).

Remedy: Deselect the monitoring function involved (p9501, p9601, p9801).
Note:
SCA: Safe Cam
SDI: Safe Direction (safe motion direction)
SLP: Safely Limited Position
SLS: Safely Limited Speed
See also: p9501 (SI Motion enable safety functions (processor 1)), r9771 (SI common functions (processor 1))

F01683 SI Motion P1 (CU): SLS enable missing

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The safety-relevant function "SLS" is not enabled in p9501 although other safety-relevant monitoring functions are enabled.
Note:
This fault does not result in a safety stop response.
Remedy: Enable the function "SLS" (p9501.0) and carry out a POWER ON.
Note:
Save the changes before POWER ON (copy from RAM to ROM).
SLS: Safely Limited Speed
See also: p9501 (SI Motion enable safety functions (processor 1))

F01690 SI Motion: Data save problem for the NVRAM

Message class: Hardware/software error (1)
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: POWER ON
Cause: There is not sufficient memory space in the NVRAM on the drive to save parameters r9781 and r9782 (safety logbook).
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
0: There is no physical NVRAM available in the drive.
1: There is no longer any free memory space in the NVRAM.
Remedy: For fault value = 0:
- use a Control Unit NVRAM.
For fault value = 1:
- deselect functions that are not required and that take up memory space in the NVRAM.
- contact Technical Support.
Note:
NVRAM: Non-Volatile Random Access Memory (non-volatile read and write memory)

F01692 SI Motion P1 (CU): Parameter value not permitted for encoderless

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: For encoderless motion monitoring functions, the parameter cannot be parameterized with this value.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Parameter number with the incorrect value.
See also: p9501 (SI Motion enable safety functions (processor 1))
Remedy: Correct the parameter specified in the fault value.
See also: p9501 (SI Motion enable safety functions (processor 1))

A01693 (F) SI P1 (CU): Safety parameter setting changed, POWER ON required

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: Safety parameters have been changed; these will only take effect following a POWER ON.
Notice:
All changed parameters of the safety motion monitoring functions will only take effect following a POWER ON.
Alarm value (r2124, interpret decimal):
Parameter number of the safety parameter which has changed, necessitating a POWER ON.

Remedy: - execute the function "Copy RAM to ROM".
- carry out a POWER ON (switch-off/switch-on).

A01696 (F) SI Motion: Test stop for the motion monitoring functions selected when booting

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The forced checking procedure (test stop) for the safe motion monitoring functions is already selected when booting, which is not permissible.
This is the reason that the test is only carried out again after first selecting the forced checking procedure.
Note:
This message does not result in a safety stop response.
See also: p9705 (SI Motion: Test stop signal source)

Remedy: De-select the forced checking procedure of the safety motion monitoring functions and then select again.
The signal source to select the forced checking procedure is set via binector input p9705.
Note:
SI: Safety Integrated

A01697 (F) SI Motion: Test stop for motion monitoring functions required

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The time set in p9559 for the forced checking procedure (test stop) for the safe motion monitoring functions has been exceeded. A new forced checking procedure is required.
After the next time the forced checking procedure is selected, the message is withdrawn and the monitoring time is reset.
Note:
- this message does not result in a safety stop response.
- As the switch-off signal paths are not automatically checked during booting, an alarm is always issued once booting is complete.
- the test must be performed within a defined, maximum time interval (p9559, maximum of 9000 hours) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.
See also: p9559 (SI Motion forced checking procedure timer (processor 1)), r9765 (SI Motion forced checking procedure remaining time (processor 1))

Remedy: Carry out the forced checking procedure of the safety motion monitoring functions.
The signal source to select the forced checking procedure is set via binector input p9705.
Note:
SI: Safety Integrated
See also: p9705 (SI Motion: Test stop signal source)

A01698 (F) SI P1 (CU): Commissioning mode active

Message class: General drive fault (19)

Reaction: NONE

Acknowledge: NONE

Cause: The commissioning of the "Safety Integrated" function is selected.
This message is withdrawn after the safety functions have been commissioned.
Note:
- this message does not result in a safety stop response.
- in the safety commissioning mode, the "STO" function is internally selected.
See also: p0010 (Drive commissioning parameter filter)

Remedy: Not necessary.

A01699 (F) SI P1 (CU): Test stop for STO required

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The time set in p9659 for the forced checking procedure (test stop) for the "STO" function has been exceeded. A new forced checking procedure is required.
After the next time the "STO" function is de-selected, the message is withdrawn and the monitoring time is reset.
Note:
- this message does not result in a safety stop response.
- the test must be performed within a defined, maximum time interval (p9659, maximum of 9000 hours) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.
See also: p9659 (SI forced checking procedure timer), r9660 (SI forced checking procedure remaining time)

Remedy: Select STO and then de-select again.
Note:
SI: Safety Integrated
STO: Safe Torque Off

C01700 SI Motion P1 (CU): STOP A initiated

Message class: Safety monitoring channel has identified an error (10)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP A (pulses are suppressed via the safety switch-off signal path of processor 1).
Possible causes:
- stop request from processor 2.
- Pulses not suppressed after test stop selection.
- subsequent response to the message C01706 "SI Motion P1: SAM/SBR limit exceeded".
- Subsequent response to the message C01714 "SI Motion P1: Safely Limited Speed exceeded".
- Subsequent response to the message C01701 "SI Motion P1: STOP B initiated".

Remedy:
- remove the cause of the fault on the monitoring channel of processor 2.
- carry out a diagnostics routine for message C01706.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01701.
- check the switch-off signal path of processor 1.
- replace Power Module.
- replace Control Unit.

This message can be acknowledged without a POWER ON using "Acknowledge internal event":
Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe brake ramp monitoring)

C01701 SI Motion P1 (CU): STOP B initiated

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE (OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP B (braking along the OFF3 deceleration ramp).

As a result of this fault, after the speed threshold parameterized in p9560 is fallen below, message C01700 "STOP A initiated" is output.

Possible causes:

- stop request from processor 2.
- Subsequent response to the message C01714 "SI Motion P1: Safely Limited Speed exceeded".
- subsequent response to the message C01711 "SI Motion P1: Defect in a monitoring channel".
- subsequent response to the message C01707 "SI Motion P1: tolerance for safe operating stop exceeded".

Remedy:

- remove the cause of the fault on the monitoring channel of processor 2.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01711.
- carry out a diagnostics routine for message C01707.

This message can be acknowledged without a POWER ON using "Acknowledge internal event".

C01706 SI Motion P1 (CU): SAM/SBR limit exceeded

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Motion monitoring functions with set acceleration monitoring (SAM, p9506 = 3):

- after initiating STOP B (SS1) the velocity has exceeded the selected tolerance.

Motion monitoring functions with set brake ramp monitoring (SBR, p9506 = 1):

- after initiating STOP B (SS1) or SLS changeover to the lower speed stage, the speed has exceeded the selected tolerance.

The drive is shut down by the message C01700 "SI Motion: STOP A initiated".

Remedy: Check the braking behavior and, if necessary, adapt the parameterization of the parameter settings of the "SAM" or the "SBR" function.

This message can be acknowledged without a POWER ON using "Acknowledge internal event".

Note:

SAM: Safe Acceleration Monitor (safe acceleration monitoring)

SBR: Safe Brake Ramp (safe brake ramp monitoring)

SI: Safety Integrated

See also: p9548 (SI Motion SAM actual velocity tolerance (processor 1)), p9581 (SI Motion brake ramp reference value (processor 1)), p9582 (SI Motion brake ramp delay time (processor 1)), p9583 (SI Motion brake ramp monitoring time (processor 1))

C01711 SI Motion P1 (CU): Defect in a monitoring channel

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: When cross-comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

If at least one monitoring function is active, then message C01701 "SI Motion: STOP B initiated" is output.

The message value that resulted in a STOP F is displayed in r9725. The message values described involve the crosswise data comparison between processor 1 and processor 2.

The following message values may also occur in the following cases if the cause that is explicitly mentioned does not apply:

- synchronization error between processor 1 and processor 2.

Message value (r2124, interpret decimal):

0 to 999: Number of the cross-compared data that resulted in this fault.

0: Stop request from the other monitoring channel.

1: Status image of monitoring functions SLS or SAM/SBR (result list 1) (r9710[0], r9710[1]).

2: Status image of monitoring function n < nx (result list 2) (r9711[0], r9711[1]).

3: The position actual value differential (r9713[0/1]) between the two monitoring channels is greater than the tolerance in p9542/p9342.

4: Error when synchronizing the crosswise data comparison between the two channels.

5: Function enable signals (p9501/p9301) Safety monitoring clock cycle too small (p9500/p9300).

6: Limit value for SLS1 (p9531[0]/p9331[0])

7: Limit value for SLS2 (p9531[1]/p9331[1])

8: Limit value for SLS3 (p9531[2]/p9331[2])

9: Limit value for SLS4 (p9531[3]/p9331[3])

31: Position tolerance (p9542/p9342).

42: Shutdown speed, pulse canc. (p9560/p9360)

43: Memory test, stop response (STOP A).

44 ... 57: General

Possible cause 1 (during commissioning or parameter modification)

The tolerance value for the monitoring function is not the same on the two monitoring

channels.

Possible cause 2 (during active operation)

The limit values are based on the actual value (r9713[0/1]). If the safe actual values on the two monitoring channels do not match, the limit values, which have been set at a defined interval, will also be different (i.e. corresponding to message value 3). This can be ascertained by checking the safe actual positions.

Permissible deviation between the two monitoring channels: p9542/p9342.

44: Position actual value (r9713[0/1]) + limit value SLS1 (p9531[0]/p9331[0]) * safety monitoring clock cycle (12 ms).

45: Position actual value (r9713[0/1]) - limit value SLS1 (p9531[0]/p9331[0]) * safety monitoring clock cycle (12 ms).

46: Position actual value (r9713[0/1]) + limit value SLS2 (p9531[1]/p9331[1]) * safety monitoring clock cycle (12 ms).

47: Position actual value (r9713[0/1]) - limit value SLS2 (p9531[1]/p9331[1]) * safety monitoring clock cycle (12 ms).

48: Position actual value (r9713[0/1]) + limit value SLS3 (p9531[2]/p9331[2]) * safety monitoring clock cycle (12 ms).

49: Position actual value (r9713[0/1]) - limit value SLS3 (p9531[2]/p9331[2]) * safety monitoring clock cycle (12 ms).

50: Position actual value (r9713[0/1]) + limit value SLS4 (p9531[3]/p9331[3]) * safety monitoring clock cycle (12 ms).

51: Position actual value (r9713[0/1]) - limit value SLS4 (p9531[3]/p9331[3]) * safety monitoring clock cycle (12 ms).

54: Position actual value (r9713[0/1]) + limit value nx (p9546/p9346) * safety monitoring clock cycle (12 ms) + tolerance (p9542/p9342).

55: Position actual value (r9713[0/1]) + limit value nx (p9546/p9346) * safety monitoring clock cycle (12 ms).

56: Position actual value (r9713[0/1]) - limit value nx (p9546/p9346) * safety monitoring clock cycle (12 ms).

57: Position actual value (r9713[0/1]) - limit value nx (p9546/p9346) * safety monitoring clock cycle (12 ms) - tolerance (p9542/p9342).

58: Actual stop request.

75: Velocity limit nx (p9546, p9346).

76: Stop response for SLS1 (p9563[0]/p9363[0])

77: Stop response for SLS2 (p9563[1]/p9363[1])

78: Stop response for SLS3 (p9563[2]/p9363[2])

79: Stop response for SLS4 (p9563[3]/p9363[3])

81: Velocity tolerance for SAM (p9548/p9348)

83: Acceptance test timer (p9558/p9358)

230: Filter time constant for n < nx.

231: Hysteresis tolerance for n < nx.

232: Smoothed velocity actual value.

233: Smoothed velocity actual value + limit value nx / safety monitoring clock cycle + hysteresis tolerance.

234: Smoothed velocity actual value + limit value nx / safety monitoring clock cycle.

235: Smoothed velocity actual value - limit value nx / safety monitoring clock cycle.

236: Smoothed velocity actual value - limit value nx / safety monitoring clock cycle - hysteresis tolerance.

237: SGA n < nx.

238: Speed limit value for SAM (p9568/p9368).

239: Acceleration for SBR (p9581/p9381 and p9583/p9383).
240: Inverse value of acceleration for SBR (p9581/p9381 and p9583/p9383).
241: Deceleration time for SBR (p9582/p9382).
244: Encoderless actual value sensing filter time (p9587/p9387).
245: Encoderless actual value sensing minimum current (p9588/p9388).
246: Voltage tolerance acceleration (p9589/p9389).
247: SDI tolerance (p9564/p9364).
248: SDI positive upper limit (7FFFFFFF hex).
249: Position actual value (r9713[0/1]) - SDI tolerance (p9564/p9364).
250: Position actual value (r9713[0/1]) + SDI tolerance (p9564/p9364).
251: SDI negative lower limit (80000001 hex).
252: SDI stop response (p9566/p9366).
253: SDI delay time (p9565/p9365).
254: Setting, behavior during pulse suppression (p9509/p9309).
256: Status image of monitoring functions SOS, SLS, SLP, test stop, SBR, SDI (result list 1 ext) (r9710).
258: Fault tolerance, actual value sensing encoderless (p9585/p9385).
1000: Watchdog timer has expired. Too many signal changes have occurred at the F-DI.
1001: Initialization error of watchdog timer.
1005: Pulses already suppressed for test stop selection.
1011: Acceptance test status between the monitoring channels differ.
1020: Cyc. communication failure between the monit. cycles.
1041: Current absolute value too low (encoderless)
1042: Current/voltage plausibility error
1043: Too many acceleration phases
1044: Actual current values plausibility error.
6000 ... 6999:
Error in the PROFIsafe control.
For these message values, the failsafe control signals (failsafe values) are transferred to the safety functions.
The significance of the individual message values is described in safety fault F01611.
Message values that have not been listed are only for internal Siemens troubleshooting.
See also: r9725 (SI Motion diagnostics STOP F)

Remedy:

For message value = 0:
- no error was identified in this monitoring channel. Note the error message of the other monitoring channel (for processor 2: C30711).

For message value = 3:
Commissioning phase:
- check the setting of the gear parameters on both monitoring channels (p9521/p9321, p9522/p9322).
- check the numerator of the gear ratio to ensure that it takes into account the motor pole pair number (p9522/p9322).

In operation:
- increase the ramp-function generator ramp-up/down time (p1120/p1121), reduce the dynamic performance of the drive.

For message value = 1 ... 999:
- if the message value is listed under cause: Check the crosswise-compared parameters to which the message value refers.
- copy the safety parameters.
- carry out a POWER ON (switch-off/switch-on).
- upgrade the Control Unit software.

For message value = 1000:
- investigate the signal associated with the F-DI (contact problems).

For message value = 1001:
- carry out a POWER ON (switch-off/switch-on).
- upgrade the Control Unit software.

For message value = 1005:
- check the conditions for pulse enable.

For message value = 1011:
- for diagnostics, refer to parameter (r9571).

For message value = 1020:
- carry out a POWER ON (switch-off/switch-on).
- replace Control Unit.

For message value = 1041:
- reduce the minimum current (p9588).

For message value = 1042:
- increase the ramp-function generator ramp-up/down time (p1120/p1121).
- check that the current/speed control is set correctly (torque-generating/field-generating current and actual speed value may not fluctuate).
- reduce the dynamic response of the setpoint value.
- increase the minimum current (p9588).

For message value = 1043:
- increase the voltage tolerance (p9589).
- increase the ramp-function generator ramp-up/down time (p1120/p1121).
- check that the current/speed control is set correctly (torque-generating/field-generating current and actual speed value may not fluctuate).
- reduce the dynamic response of the setpoint value.

For message value = 6000 ... 6999:
Refer to the description of the message values in safety fault F01611.

This message can be acknowledged using "Acknowledge internal event".

C01712 SI Motion P1 (CU): Defect in F-IO processing

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: When cross checking and comparing the two monitoring channels, the drive detected a difference between parameters or results of the F-IO processing and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

The safety message C01711 with message value 0 is also displayed due to initiation of STOP F.

If at least one monitoring function is active, then safety message C01701 "SI Motion: STOP B initiated" is output.

Message value (r2124, interpret decimal):

Number of the cross-compared data that resulted in this message.

1: SI discrepancy monitoring time inputs (p10002, p10102).
2: SI acknowledgment internal event input terminal (p10006, p10106).
3: SI STO input terminal (p10022, p10122).
4: SI SS1 input terminal (p10023, p10123).
7: SI SLS input terminal (p10026, p10126).
13: Different states for static inactive signal sources (p10006, p10022 ... p10026).
14: SI discrepancy monitoring time outputs (p10002, p10102).
15: SI acknowledgment internal event (p10006, p10106).
46: SI digital inputs debounce time (p10017, p10117)
47: Selection F-DI for PROFIsafe (p10050, p10150)
48: Selection F-DI for PROFIsafe (p10050, p10150)
49: SI SDI positive input terminal (p10030, p10130).
50: SI SDI negative input terminal (p10031, p10131).

Remedy:
- check parameterization in the parameters involved and correct if required.
- ensure equality by copying the SI data to processor 2 and then carry out an acceptance test.

Note:
This message can be acknowledged via F-DI or PROFIsafe.

Note:
F-DI: Failsafe Digital Input
SLS: Safely Limited Speed
SS1: Safe Stop 1
STO: Safe Torque Off

C01714 SI Motion P1 (CU): Safely Limited Speed exceeded

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive has moved faster than that specified by the velocity limit value (p9531). The drive is stopped as a result of the configured stop response (p9563).
Message value (r2124, interpret decimal):
100: SLS1 exceeded.
200: SLS2 exceeded.
300: SLS3 exceeded.
400: SLS4 exceeded.

Remedy: - check the traversing/motion program in the control.
- check limits for SLS and if required adapt accordingly (p9531).
This message can be acknowledged using "Acknowledge internal event".
Note:
SLS: Safely Limited Speed
See also: p9531 (SI Motion SLS limit values (processor 1)), p9563 (SI Motion SLS-specific stop response (processor 1))

C01716 SI Motion P1 (CU): Tolerance for safe motion direction exceeded

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The tolerance for the "safe motion direction" function was exceeded. The drive is stopped as a result of the configured stop response (p9566).
Message value (r2124, interpret decimal):
0: Tolerance for the "safe motion direction positive" function exceeded.
1: Tolerance for the "safe motion direction negative" function exceeded.

Remedy: - check the traversing/motion program in the control.
- check the tolerance for "SDI" function and if required, adapt (p9564).
This message can be acknowledged as follows:
- Deselect the "SDI" function and select again.
- carry out safe acknowledgment via "Acknowledgment internal event".
Note:
SDI: Safe Direction (safe motion direction)
SI: Safety Integrated
See also: p9564 (SI Motion SDI tolerance (processor 1)), p9565 (SI Motion SDI delay time (processor 1)), p9566 (SI Motion SDI stop response (processor 1))

C01770 SI Motion P1 (CU): Discrepancy error of the fail-safe inputs

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The fail-safe digital inputs (F-DI) show a different state longer than that parameterized in p10002 / p10102.
Fault value (r0949, interpret binary):
Bit 0: Discrepancy error for F-DI 0
Bit 1: Discrepancy error for F-DI 1
...
Note:
If several discrepancy errors occur consecutively, then this message is only signaled for the first error that occurs.

Remedy: - check the wiring of the F-DI (contact problems).

Note:

This message can be acknowledged via F-DI or PROFIsafe.

Discrepancy errors of an F-DI can only be acknowledged if safe acknowledgment was carried out once after the cause of the error was resolved (p10006, acknowledgment via PROFIsafe, extended message acknowledgment). As long as safety acknowledgment was not carried out, the corresponding F-DI stays in the safe state internally.

When the "Extended message acknowledgment" function (p9507.0) is active, the following applies:

If the F-DI assigned for STO or SS1 is in a fail-safe state due to a discrepancy error, then when deselecting via this F-DI, safe acknowledgment can no longer be executed.

For cyclic switching operations at the F-DI, it may be necessary to adapt the discrepancy time to the switching frequency.

If the period of a cyclic switching pulse corresponds to twice the value of p10002, then the following formulas should be checked:

- p10002 < (tp / 2) - td (discrepancy time must be less than half the period minus the actual discrepancy time)
- p10002 >= 12 ms (discrepancy time must be no less than 12 ms)
- p10002 > td (discrepancy time must be greater than the switch discrepancy time which may actually apply)

td = possible actual discrepancy time (in ms) that can occur with a switching operation. It must be at least 12 ms.

tp = period for a switching operation in ms.

When debounce p10017 is active, the discrepancy time is directly specified by the debounce time.

If the period of a cyclic switching pulse corresponds to twice the debounce time, then the following formulas should be checked.

- p10002 < p10017 + 1 ms - td
- p10002 > td
- p10002 >= 12 ms

Example:

For a 110 ms switching frequency and p10017 = 0, the maximum discrepancy time that can be set is as follows:

p10002 <= (110/2 ms) - 12 ms = 43 ms

Rounded off, p10002 <= 36 ms is obtained (as the discrepancy time is rounded off as a multiple of 12 ms).

Note:

F-DI: Failsafe Digital Input

A01772 SI Motion P1 (CU): Test stop for fail-safe digital outputs running

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: NONE

Cause: The forced checking procedure (test stop) for the fail-safe digital inputs is currently in progress.

Remedy: The alarm is automatically withdraw after successfully ending or canceling (when a fault condition occurs) the test stop.

Note:

F-DO: Failsafe Digital Output

F01773 SI Motion P1 (CU): Test stop fail-safe digital output error

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault has occurred on processor 1 during the forced checking procedure (test stop) of the fail-safe digital output.

Fault value (r0949, interpret hexadecimal):

RRRVWXYZ hex:

R: Reserved.

V: Actual state of the DO channel concerned (see X) on processor 1 (corresponds to the states read back from the hardware, bit 0 = DO 0, bit 1 = DO 1, etc.).

W: Required state of the DO channel concerned (see X, bit 0 = DO 0, bit 1 = DO 1, etc.).

X: DO channels involved, which indicate an error (bit 0 = DO 0, bit 1 = DO 1, etc.).

Y: Reason for the test stop fault.

Z: State of the test stop in which the fault has occurred.

Y: Reason for the test stop fault
Y = 1: MM side in incorrect test stop state (internal fault).
Y = 2: Expected states of the DOs were not fulfilled (CU240D-2: readback via DI 5 / CU250S-2 readback via DI 6).
Y = 3: Incorrect timer state on processor 1 (internal fault)
Y = 4: Expected states of the diag DOs were not fulfilled (CU240D-2: internal readback on processor 2 channel / CU250S-2 readback via DI 6).
Y = 5: Expected states of the second diag DOs were not fulfilled (CU240D-2: internal readback on processor 1).
X and V indicate the DI or Diag-DO state dependent upon the reason for the fault (2, 4 or 5).
In the event of multiple test stop faults, the first one that occurred is shown.

Z: Test stop state and associated test actions
Z = 0 ... 3: Synchronization phase of test stop between processor 1 and processor 2 no switching operations
Z = 4: DO + OFF and DO - OFF
Z = 5: Check to see if states are as expected
Z = 6: DO + ON and DO - ON
Z = 7: Check to see if states are as expected
Z = 8: DO + OFF and DO - ON
Z = 9: Check to see if states are as expected
Z = 10: DO + ON and DO - OFF
Z = 11: Check to see if states are as expected
Z = 12: DO + OFF and DO - OFF
Z = 13: Check to see if states are as expected
Z = 14: End of test stop

Diag expected states in table format:
Test stop state: Expectation Mode 1 / Mode 2 / Mode 3 / Mode 4
5: 0/-/-/1
7: 0/-/-/0
9: 0/-/-/0
11: 1/-/-/1
13: 0/-/-/1
Second diag expected states in table format:
Test stop state: Expectation Mode 1 / Mode 2 / Mode 3 / Mode 4
5: -/-/-/1
7: -/-/-/0
9: -/-/-/1
11: -/-/-/0
13: -/-/-/1
DI expected states in table format:
Test stop state: Expectation Mode 1 / Mode 2 / Mode 3 / Mode 4
5: -/1/1/-
7: -/0/0/-
9: -/0/1/-
11: -/0/1/-
13: -/1/1/-

Example:
Fault F01773 (P1) is signaled with fault value = 0001_0127 and fault F30773 (P2) is signaled with fault value 0000_0127.
This means that in state 7 (Z = 7) the state of the external readback signal was not set correctly (Y = 2) after DO-0 (X = 1) was switched to ON/ON.
Fault value 0001_0127 indicates that 0 was expected (W = 0) and 1 (V = 1) was read back from the hardware.
Fault value 0000_0127 on the processor 2 indicates that the states were as expected.
In the case of fault F30773, W and V are always identical; a value of 0 always means that 0 was expected at the readback input but was not present on processor 1.

Remedy: Check the wiring of the fail-safe digital output (F-DO) and restart the test stop.
Note:
- the fault is withdrawn if the test stop is successfully completed.
- in the event of multiple test stop faults, the first one that occurred is shown. Once the test stop has been restarted the next queued test stop fault will be signaled (if there is one).
F-DO: Failsafe Digital Output

A01774 SI Motion P1 (CU): Test stop for fail-safe digital outputs required

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: The time set in p10003 for the forced checking procedure (test stop) for the fail-safe digital outputs has been exceeded. A new forced checking procedure is required.
After the next time the forced checking procedure is selected, the message is withdrawn and the monitoring time is reset.
Note:
- this message does not result in a safety stop response.
- the test must be performed within a defined, maximum time interval (p10003, maximum of 8760 hours) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.
See also: p10003 (SI motion forced checking procedure timer)
Remedy: Carry out the forced checking procedure for the digital outputs.
The signal source to select the forced checking procedure is set via binector input p10007.
Note:
F-DO: Failsafe Digital Output
See also: p10007 (SI Motion forced checking procedure F-DO signal source)

A01788 SI: Automatic test stop waits for STO deselection via motion monitoring functions

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: The automatic test stop (forced checking procedure) was not able to be carried out after powering up.
Possible causes:
- the STO function is selected via safe motion monitoring functions.
- a safety message is present, that resulted in a STO.
Note:
STO: Safe Torque Off
Remedy: - deselect STO via safe motion monitoring functions.
- remove the cause of the safety messages and acknowledge the messages.
Note:
The automatic test stop is performed after removing the cause.

A01790 SI: Power up stopped due to STO via terminals

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: When powering up, the automatic internal self test of the Control Unit was not able to be completed as the pulses were not enabled. It is possible that the "STO via terminals at the Power Module" function is being used, and STO is selected in at least one hardware switch-off signal path at the Power Module.

Remedy: - Deselect STO via the STO terminals at the Power Module (connect STO_A and STO_B to 24 V).
- if required, de-activate the "STO via terminals at the Power Module" function via the DIP switch (both DIP switches set to "OFF").
Note:
- After the cause has been removed, the Control Unit continues to power up.
- While the alarm remains, a possibly existing brake is kept closed.
STO: Safe Torque Off

A01796 (F, N) SI P1 (CU): Wait for communication

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The drive waits for communication to be established to execute the safety-relevant motion monitoring functions.
Note:
In this state, the pulses are safely suppressed.
Alarm value (r2124, interpret decimal):
3: Wait for communication to be established to PROFIsafe F-Host.
Remedy: If, after a longer period of time, the message is not automatically withdrawn, the following checks have to be made:
- check any other PROFIsafe communication messages/signals present and evaluate them.
- check the operating state of the F-Host.
- check the communication connection to the F Host.
See also: p9601 (SI enable functions integrated in the drive (processor 1)), p9801 (SI enable functions integrated in the drive (processor 2))

C01798 SI Motion P1 (CU): Test stop for motion monitoring functions running

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The forced checking procedure (test stop) for the safe motion monitoring functions is currently in progress.
Remedy: Not necessary.
The message is automatically withdrawn when the test stop has been completed.
Note:
SI: Safety Integrated

C01799 SI Motion P1 (CU): Acceptance test mode active

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The acceptance test mode is active.
Remedy: Not necessary.
The message is withdrawn when exiting the acceptance test mode.

F01800 DRIVE-CLiQ: Hardware/configuration error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: A DRIVE-CLiQ connection fault has occurred.
Fault value (r0949, interpret decimal):
100 ... 107:
Communication via DRIVE-CLiQ socket X100 ... X107 has not been switched to cyclic operation. The cause may be an incorrect structure or a configuration that results in an impossible bus timing.
10:
Loss of the DRIVE-CLiQ connection. The cause may be, for example, that the DRIVE-CLiQ cable was withdrawn from the Control Unit or as a result of a short-circuit for motors with DRIVE-CLiQ. This fault can only be acknowledged in cyclic communication.

11:
Repeated faults when detecting the connection. This fault can only be acknowledged in cyclic communication.
12:
A connection was detected but the node ID exchange mechanism does not function. The reason is probably that the component is defective. This fault can only be acknowledged in cyclic communication.

Remedy: For fault value = 100 ... 107:
- ensure that the DRIVE-CLiQ components have the same firmware versions.
- avoid longer topologies for short current controller clock cycles.

For fault value = 10:
- check the DRIVE-CLiQ cables at the Control Unit.
- remove any short-circuit for motors with DRIVE-CLiQ.
- carry out a POWER ON.

For fault value = 11:
- check the electrical cabinet design and cable routing for EMC compliance

For fault value = 12:
- replace the component involved.

A01839 DRIVE-CLiQ diagnostics: cable fault to the component

Message class: General drive fault (19)
Reaction: NONE
Acknowledge: NONE
Cause: The fault counter (r9936[0...199]) to monitor the DRIVE-CLiQ connections/cables has been incremented.
Alarm value (r2124, interpret decimal):
Component number.
Note:
The component number specifies the component whose feeder cable from the direction of the Control Unit is faulted.
The alarm automatically disappears after 5 seconds, assuming that no other data transfer error has occurred.
See also: r9936 (DRIVE-CLiQ diagnostic error counter connection)
Remedy: - check the corresponding DRIVE-CLiQ cables.
- check the electrical cabinet design and cable routing for EMC compliance

A01840 SMI: Component found without motor data

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: An SMI/DQI without motor data has been found (e.g. SMI installed as replacement part).
Alarm value (r2124, interpret decimal):
Component number from target topology.
Remedy: 1. Download the SMI/DQI data (motor/encoder data) from the data backup again (p4690, p4691).
2. Carry out a POWER ON (switch-off/switch-on) for this component.
Note:
DQI: DRIVE-CLiQ Sensor Integrated
SMI: SINAMICS Sensor Module Integrated
See also: p4690 (SMI spare part component number), p4691 (SMI spare part save/download data)

A01900 (F) PROFIBUS: Configuration telegram error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: A PROFIBUS master attempts to establish a connection using an incorrect configuring telegram.
Alarm value (r2124, interpret decimal):
2: Too many PZD data words for input or output. The number of possible PZD is specified by the number of indices in r2050/p2051.
3: Uneven number of bytes for input or output.
211: Unknown parameterizing block.
501: PROFIsafe parameter error (e.g. F_dest).

502: PROFIsafe telegram does not match.
Additional values:
Only for internal Siemens troubleshooting.

Remedy: Check the bus configuration on the master and slave sides.
For alarm value = 2:
Check the number of data words for input and output.
For alarm value = 211:
Ensure offline version <= online version.
For alarm value = 501:
Check the set PROFIsafe address (p9610).
For alarm value = 502:
Check the enable of F-DI (p9501.30).

F01910 (N, A) Fieldbus interface setpoint timeout

Message class: Communication error to the higher-level control system (9)
Reaction: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Acknowledge: IMMEDIATELY
Cause: The reception of setpoints from the fieldbus interface has been interrupted.
- bus connection interrupted.
- communication partner switched off.
For PROFIBUS:
- PROFIBUS master set into the STOP state.
See also: p2040 (Fieldbus interface monitoring time), p2047 (PROFIBUS additional monitoring time)

Remedy: Ensure bus connection has been established and switch on communication partner.
- if required, adapt p2040.
For PROFIBUS:
- set the PROFIBUS master to the RUN state.
- if the error is repeated, check the set response monitoring in the bus configuration (HW Config).
- slave redundancy: For operation on a Y link, it must be ensured that "DP alarm mode = DPV1" is set in the slave parameterization.

F01912 (N, A) PB/PN clock cycle synchronous operation sign-of-life failure

Message class: Communication error to the higher-level control system (9)
Reaction: OFF1 (OFF3)
Acknowledge: IMMEDIATELY
Cause: The maximum permissible number of errors in the controller sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.

Remedy:
- physically check the bus (cables, connectors, terminating resistor, shielding, etc.).
- correct the interconnection of the controller sign-of-life (p2045).
- check whether the controller correctly sends the sign-of-life (e.g. create a trace with STW2.12 ... STW2.15 and trigger signal ZSW1.3).
- check the permissible telegram failure rate (p0925).
- check the bus and controller for utilization level (e.g. bus cycle time Tdp was set too short).
Note:
PB: PROFIBUS
PN: PROFINET

A01920 (F) PROFIBUS: Interruption cyclic connection

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The cyclic connection to the PROFIBUS master is interrupted.

Remedy: Establish the PROFIBUS connection and activate the PROFIBUS master in the cyclic mode.
Note:
If there is no communication to a higher-level control system, then p2030 should be set = 0 to suppress this message.
See also: p2030 (Field bus int protocol selection)

A01944 PB/PN sign-of-life synchronism not reached

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram.
Synchronization with the master sign-of-life (STW2.12 ... STW2.15) could not be completed because the sign-of-life is changing differently to how it was configured in the Tmapc time grid.
Remedy: - ensure that the master correctly increments the sign-of-life in the master application clock cycle Tmapc.
- correct the interconnection of the master sign-of-life (p2045).
Note:
PB: PROFIBUS
PN: PROFINET

A01945 PROFIBUS: Connection to the Publisher failed

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: For PROFIBUS peer-to-peer data transfer, the connection to at least one Publisher has failed.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection failed.
...
Bit 15 = 1: Publisher with address in r2077[15], connection failed.
Remedy: Check the PROFIBUS cables.
See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

F01946 (A) PROFIBUS: Connection to the Publisher aborted

Message class: Communication error to the higher-level control system (9)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The connection to at least one Publisher for PROFIBUS peer-to-peer data transfer in cyclic operation has been aborted.
Fault value (r0949, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection aborted.
...
Bit 15 = 1: Publisher with address in r2077[15], connection aborted.
Remedy: - check the PROFIBUS cables.
- check the state of the Publisher that has the aborted connection.
See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

F01951 CU SYNC: Synchronization application clock cycle missing

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: Internal synchronization of the application cycles unsuccessful.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Control Unit software.

A01953 CU SYNC: Synchronization not completed

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE
Acknowledge: NONE
Cause: After the drive system was switched on, synchronization between the basic clock cycle and application clock cycle was started but was not completed within the selected time tolerance.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: Carry out a POWER ON (switch-off/switch-on).

A02050 Trace: Start not possible

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The trace has already been started.
Remedy: Stop the trace and, if necessary, start again.

A02051 Trace: recording not possible as a result of know-how protection

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: TRACE recording is not possible as at least one signal or trigger signal being used is under know-how protection.
Alarm value (r2124, interpret decimal):
1: Recorder 0
2: Recorder 1
3: Recorders 0 and 1
Remedy: - Temporarily activate or de-activate know-how protection (p7766).
- include the signal in the OEM exception list (p7763, p7764).
- Where relevant do not record the signal.
See also: p7763 (KHP OEM exception list number of indices for p7764), p7764 (KHP OEM exception list)

A02055 Trace: Recording time too short

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The trace duration is too short.
The minimum is twice the value of the trace clock cycle.
Remedy: Check the selected recording time and, if necessary, adjust.

A02056 Trace: Recording cycle too short

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The selected recording cycle is shorter than the selected basic clock cycle 0 (p0110[0]).
Remedy: Increase the value for the trace cycle.

A02057 Trace: Time slice clock cycle invalid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The time slice clock cycle selected does not match any of the existing time slices.
Remedy: Enter an existing time slice clock cycle. The existing time slices can be read out via p7901.
See also: r7901 (Sampling times)

A02058 Trace: Time slice clock cycle for endless trace not valid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The selected time slice clock cycle cannot be used for the endless trace
Remedy: Enter the clock cycle of an existing time slice with a cycle time >= 2 ms for up to 4 recording channels or >= 4 ms from 5 recording channels per trace.
The existing time slices can be read out via p7901.
See also: r7901 (Sampling times)

A02059 Trace: Time slice clock cycle for 2 x 8 recording channels not valid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The selected time slice clock cycle cannot be used for more than 4 recording channels.
Remedy: Enter the clock cycle of an existing time slice with a cycle time >= 4 ms or reduce the number of recording channels to 4 per trace.
The existing time slices can be read out via p7901.
See also: r7901 (Sampling times)

A02060 Trace: Signal to be traced missing

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: - a signal to be traced was not specified.
- the specified signals are not valid.
Remedy: - specify the signal to be traced.
- check whether the relevant signal can be traced.

A02061 Trace: Invalid signal

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: - the specified signal does not exist.
- the specified signal can no longer be traced (recorded).
Remedy: - specify the signal to be traced.
- check whether the relevant signal can be traced.

A02062 Trace: Invalid trigger signal

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: - a trigger signal was not specified.
- the specified signal does not exist.
- the specified signal is not a fixed-point signal.
- the specified signal cannot be used as a trigger signal for the trace.
Remedy: Specify a valid trigger signal.

A02063 Trace: Invalid data type

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The specified data type to select a signal using a physical address is invalid.
Remedy: Use a valid data type.

A02070 Trace: Parameter cannot be changed

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The trace parameter settings cannot be changed when the trace is active.
Remedy: - stop the trace before parameterization.
- if required, start the trace.

A02075 Trace: Pretrigger time too long

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The selected pretrigger time must be shorter than the trace time.
Remedy: Check the pretrigger time setting and change if necessary.

F02080 Trace: Parameterization deleted due to unit changeover

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The trace parameterization in the drive unit was deleted due to a unit changeover or a change in the reference parameters.
Remedy: Restart trace.

A02095 MTrace 0: multiple trace cannot be activated

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The following functions or settings are not permissible in conjunction with a multiple trace (trace recorder 0):
- measuring function
- long-time trace
- trigger condition "immediate recording start" (IMMEDIATE)
- trigger condition "start with function generator" (FG_START)

Remedy: - if required, de-activate the multiple trace (p4840[0] = 0).
- de-activate function or setting that is not permissible

A02096 MTrace 0: cannot be saved

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: It is not possible to save the measurement results of a multiple trace on the memory card (trace recorder 0).
A multiple trace is not started or is canceled.
Alarm value (r2124, interpret decimal):
1: Memory card cannot be accessed.
- card is not inserted or is blocked by a mounted USB drive.
3: data save operation to slow.
- a second trace has been completed before the measurement results of the first trace were able to be saved.
- writing the measurement result files to the card is blocked by the parameter save.
4: Data save operation canceled.
- for instance, the file required for the data save operation was not able to be found.

Remedy: - insert or remove the memory card.
- use a larger memory card.
- configure a longer trace time or use an endless trace.
- avoid saving parameters while a multiple trace is running.
- check whether other functions are presently accessing measurement result files.

A02097 MTrace 1: multiple trace cannot be activated

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The following functions or settings are not permissible in conjunction with a multiple trace (trace recorder 1):
- measuring function
- long-time trace
- trigger condition "immediate recording start" (IMMEDIATE)
- trigger condition "start with function generator" (FG_START)

Remedy:
- if required, de-activate the multiple trace (p4840[1] = 0).
- de-activate function or setting that is not permissible

A02098 MTrace 1: cannot be saved

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: It is not possible to save the measurement results of a multiple trace on the memory card (trace recorder 1).
A multiple trace is not started or is canceled.
Alarm value (r2124, interpret decimal):
1: Memory card cannot be accessed.
- card is not inserted or is blocked by a mounted USB drive.

3: data save operation to slow.
- a second trace has been completed before the measurement results of the first trace were able to be saved.
- writing the measurement result files to the card is blocked by the parameter save.

4: Data save operation canceled.
- for instance, the file required for the data save operation was not able to be found.

Remedy:
- insert or remove the memory card.
- use a larger memory card.
- configure a longer trace time or use an endless trace.
- avoid saving parameters while a multiple trace is running.
- check whether other functions are presently accessing measurement result files.

A02099 Trace: Insufficient Control Unit memory

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The memory space still available on the Control Unit is no longer sufficient for the trace function.
Remedy: Reduce the memory required, e.g. as follows:
- reduce the trace time.
- increase the trace clock cycle.
- reduce the number of signals to be traced.

A02150 OA: Application cannot be loaded

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: The system was not able to load an OA application.
Alarm value (r2124, interpret hexadecimal):
16:
The interface version in the DCB user library is not compatible to the DCC standard library that has been loaded.
Only for internal Siemens troubleshooting.

Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
For alarm value = 16:
Load a compatible DCB user library (compatible to the interface of the DCC standard library).
Note:
OA: Open Architecture
DCB: Drive Control Block
DCC: Drive Control Chart

F02151 (A) OA: Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An internal software error has occurred within an OA application.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.
Note:
OA: Open Architecture

F02152 (A) OA: Insufficient memory

Message class: Hardware/software error (1)
Reaction: OFF1
Acknowledge: IMMEDIATELY (POWER ON)
Cause: Too many functions have been configured on this Control Unit (e.g. too many drives, function modules, data sets, OA applications, blocks, etc).
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - change the configuration on this Control Unit (e.g. fewer drives, function modules, data sets, OA applications, blocks, etc).
- use an additional Control Unit.
Note:
OA: Open Architecture

F03000 NVRAM fault on action

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault occurred during execution of action p7770 = 1 or 2 for the NVRAM data.
Fault value (r0949, interpret hexadecimal):
yyxx hex: yy = fault cause, xx = application ID
yy = 1:
The action p7770 = 1 is not supported by this version if Drive Control Chart (DCC) is activated for the drive object concerned.
yy = 2:
The data length of the specified application is not the same in the NVRAM and the backup.
yy = 3:
The data checksum in p7774 is not correct.
yy = 4:
No data available to load.
Remedy: - Perform the remedy according to the results of the troubleshooting.
- if necessary, start the action again.

F03001	NVRAM checksum incorrect
Message class:	Hardware/software error (1)
Reaction:	NONE
Acknowledge:	IMMEDIATELY
Cause:	A checksum error occurred when evaluating the non-volatile data (NVRAM) on the Control Unit. The NVRAM data affected was deleted.
Remedy:	Carry out a POWER ON (switch-off/switch-on) for all components.

F03500 (A)	TM: Initialization
Message class:	Hardware/software error (1)
Reaction:	OFF1 (OFF2)
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	When initializing the Terminal Modules, the terminals of the Control Unit or the Terminal Board 30, an internal software error has occurred. Fault value (r0949, interpret decimal): yxxx dex y = Only for internal Siemens troubleshooting xxx = component number (p0151)
Remedy:	- switch off/switch on the power supply for the Control Unit. - check the DRIVE-CLiQ connection. - if required, replace the Terminal Module. The Terminal Module should be directly connected to a DRIVE-CLiQ socket of the Control Unit. If the fault occurs again, replace the Terminal Module.

A03501	TM: Sampling time change
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	NONE
Cause:	The sampling times of the inputs/outputs were changed. This change only becomes valid after the next boot.
Remedy:	Carry out a POWER ON.

F03505 (N, A)	Analog input wire breakage
Message class:	External measured value / signal state outside the permissible range (16)
Reaction:	OFF1 (NONE, OFF2)
Acknowledge:	IMMEDIATELY (POWER ON)
Cause:	The wire-break monitoring for an analog input has responded. The input value of the analog input has undershot the threshold value parameterized in p0761[0...1]. p0756[0]: analog input 0 (terminal 3/4) p0756[1]: analog input 1 (terminal 10/11) Fault value (r0949, interpret decimal): Note: For the following analog input type, the wire breakage monitoring is active: p0756[0...1] = 3 (4 ... 20 mA with monitoring)
Remedy:	- check the wiring to the signal source for interruptions. - check the magnitude of the injected current - it is possible that the infed signal is too low. - check the load resistor (250 Ohm). Note: The input current measured by the analog input can be read in r0752[0]. For p756[0...1] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies: A current less than 4 mA is not displayed in r752[0...1] - but instead r752[0...1] = 4 mA is output.

A03506 (F, N) 24 V power supply missing

Message class: Supply voltage fault (undervoltage) (3)
Reaction: NONE
Acknowledge: NONE
Cause: The 24 V power supply for the digital outputs (X124) is missing.
Remedy: Check the terminals for the power supply voltage (X124, L1+, M).

A03510 (F, N) Calibration data not plausible

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: During booting, the calibration data for the analog inputs is read and checked with respect to plausibility.
At least one calibration data point was determined to be invalid.
Remedy: - switch off/switch on the power supply for the Control Unit.
Note:
If it reoccurs, then replace the module.
In principle, operation could continue.
The analog channel involved possibly does not achieve the specified accuracy.

A03520 (F, N) Temperature sensor fault

Message class: External measured value / signal state outside the permissible range (16)
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the temperature sensor, an error occurred.
It is expected that one of the following temperature sensors is connected via an analog input:
- LG-Ni1000 (p0756[2...3] = 6)
- PT1000 (p0756[2...3] = 7)
- DIN Ni 1k (p0756[2...3] = 10)
Alarm value (r2124, interpret decimal):
33: Analog input 2 (AI2) wire breakage or sensor not connected.
34: Analog input 2 (AI2) measured resistance too low (short circuit).
49: Analog input 3 (AI3) wire breakage or sensor not connected.
50: Analog input 3 (AI3) measured resistance too low (short circuit).
See also: p0756 (CU analog inputs type)
Remedy: - make sure that the sensor is connected correctly.
- check the sensor for correct function and if required, replace.
- change over the analog input to type "no sensor connected" (p0756 = 8).

A03550 TM: Speed setpoint filter natural frequency > Shannon frequency

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The natural filter frequency of the speed setpoint filter (p1417) is greater than or equal to the Shannon frequency.
The Shannon frequency is calculated according to the following formula:
0.5 / p4099[3]
Remedy: Reduce the natural frequency of the speed setpoint filter (PT2 low pass) (p1417).

A05000 (N) Power unit: Overtemperature heat sink AC inverter

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The alarm threshold for overtemperature at the inverter heat sink has been reached. The response is set using p0290.
If the temperature of the heat sink increases by an additional 5 K, then fault F30004 is initiated.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the cooling failed?

A05001 (N) Power unit: Overtemperature depletion layer chip

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: Alarm threshold for overtemperature of the power semiconductor in the AC converter has been reached.
Note:
- the response is set using p0290.
- if the depletion layer temperature increases by an additional 15 K, then fault F30025 is triggered.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the cooling failed?
- pulse frequency too high?

See also: r0037 (Power unit temperatures), p0290 (Power unit overload response)

A05002 (N) Power unit: Air intake overtemperature

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: For chassis power units, the following applies:
The alarm threshold for the air intake overtemperature has been reached. For air-cooled power units, the threshold is 42 °C (hysteresis 2 K). The response is set using p0290.
If the air intake temperature increases by an additional 13 K, then fault F30035 is output.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- has the fan failed? Check the direction of rotation.

A05004 (N) Power unit: Rectifier overtemperature

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The alarm threshold for the overtemperature of the rectifier has been reached. The response is set using p0290.
If the temperature of the rectifier increases by an additional 5 K, then fault F30037 is triggered.

Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the fan failed? Check the direction of rotation.
- has a phase of the line supply failed?
- is an arm of the supply (incoming) rectifier defective?

A05006 (N) Power unit: Overtemperature thermal model

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The temperature difference between the chip and heat sink has exceeded the permissible limit value (blocksize power units only).
Depending on p0290, an appropriate overload response is initiated.
See also: r0037 (Power unit temperatures)

Remedy: Not necessary.
The alarm disappears automatically once the limit value is undershot.
Note:
If the alarm does not disappear automatically and the temperature continues to rise, this can result in fault F30024.
See also: p0290 (Power unit overload response)

A05065 (F, N) Voltage measured values not plausible

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The voltage measurement does not supply any plausible values and is not used.
Alarm value (r2124, interpret bitwise binary):
Bit 1: Phase U
Bit 2: Phase V
Bit 3: Phase W
Remedy: The following parameterization must be made in order to de-activate the alarm:
- De-activate voltage measurement (p0247.0 = 0).
- De-activate flying restart with voltage measurement (p0247.5 = 0) and de-activate fast flying restart (p1780.11 = 0).

F05118 (A) Precharging contactor simultaneity monitoring time exceeded

Message class: Infeed faulted (13)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: A feedback signal for the precharging contactor (ALM, SLM, BLM diode) or the line contactor (BLM thyristor) interconnected and the simultaneity monitoring (p0255[4, 6]) activated.
After opening or closing a contactor of the parallel connection, after a monitoring time has elapsed, not all of the contactors have assumed the same state.
Fault value (r0949, interpret binary):
Bit 0 = 1: simultaneity error when closing the contactors.
Bit 1 = 1: simultaneity error when opening the contactors.
Bit 16 = 1: PDS0 contactor is closed.
Bit 17 = 1: PDS1 contactor is closed.
Bit 18 = 1: PDS2 contactor is closed.
Bit 19 = 1: PDS3 contactor is closed.
Bit 20 = 1: PDS4 contactor is closed.
Bit 21 = 1: PDS5 contactor is closed.
Bit 22 = 1: PDS6 contactor is closed.
Bit 23 = 1: PDS7 contactor is closed.
Note:
PDS: Power unit Data Set
Remedy: - check the monitoring time setting (p0255[4, 6]).
- check the contactor wiring and activation.
- if required, replace the contactor.

F05119 (A) Bypass contactor simultaneity monitoring time exceeded

Message class: Infeed faulted (13)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: A feedback signal for the bypass contactor is interconnected and the simultaneity monitoring (p0255[5, 7]) activated.
After opening or closing a contactor of the parallel connection, after a monitoring time has elapsed, not all of the contactors have assumed the same state.
Fault value (r0949, interpret binary):
Bit 0 = 1: simultaneity error when closing the contactors.
Bit 1 = 1: simultaneity error when opening the contactors.
Bit 16 = 1: PDS0 contactor is closed.
Bit 17 = 1: PDS1 contactor is closed.

Bit 18 = 1: PDS2 contactor is closed.
Bit 19 = 1: PDS3 contactor is closed.
Bit 20 = 1: PDS4 contactor is closed.
Bit 21 = 1: PDS5 contactor is closed.
Bit 22 = 1: PDS6 contactor is closed.
Bit 23 = 1: PDS7 contactor is closed.
Note:
PDS: Power unit Data Set

Remedy: - check the monitoring time setting (p0255[5, 7]).
- check the wiring and control of the contactor.
- if required, replace the contactor.

F06310 (A) Supply voltage (p0210) incorrectly parameterized

Message class: Network fault (2)
Reaction: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The measured DC voltage lies outside the tolerance range after precharging has been completed.
Permissible range:
1.16 * p0210 < r0070 < 1.6 * p0210
Note:
The fault can only be acknowledged when the drive is switched off.
See also: p0210 (Drive unit line supply voltage)
Remedy: - check the parameterized supply voltage and if required change (p0210).
- check the line supply voltage.
See also: p0210 (Drive unit line supply voltage)

A06921 (N) Braking resistor phase unsymmetry

Message class: Braking Module faulted (14)
Reaction: NONE
Acknowledge: NONE
Cause: - the three resistors of the braking chopper are not symmetrical.
- DC link voltage oscillations caused by fluctuating loads of the connected drives.
Remedy: - check the feeder cables to the braking resistors.
- if required, increase the value for detecting dissymmetry (p1364).

F06922 Braking resistor phase failure

Message class: Braking Module faulted (14)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A phase failure for the brake resistor was detected.
Fault value (r0949, interpret decimal):
11: Phase U
12: Phase V
13: Phase W
See also: p3235 (Phase failure signal motor monitoring time)
Remedy: Check the feeder cables to the braking resistors.

F07011 Drive: Motor overtemperature

Message class: Motor overload (8)
Reaction: OFF2 (NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: KTY84/PT1000:
The motor temperature has exceeded the fault threshold (p0605) or the timer (p0606) after the alarm threshold was exceeded (p0604) has expired. The response parameterized in p0610 becomes active. The alarm is withdrawn if the response threshold for wire breakage or sensor not connected is exceeded (R > 2120 Ohm).

PTC or bimetallic NC contact:
The response threshold of 1650 Ohm was exceeded or the NC contact opened and the timer (p0606) has expired. The response parameterized in p0610 becomes active.
Possible causes:
- motor is overloaded.
- motor ambient temperature too high.
- wire breakage or sensor not connected.
Fault value (r0949, interpret decimal):
200:
The motor temperature model 1 (I2t) signals an overtemperature (p0612.0 = 1, p0611 > 0, p0615 reached).
See also: p0604, p0605, p0606, p0612, p0613, p0625, p0626, p0627, p0628

Remedy:
- reduce the motor load.
- check the ambient temperature and the motor ventilation.
- check the wiring and the connection of the PTC or bimetallic NC contact.
See also: p0604, p0605, p0606, p0612, p0625, p0626, p0627, p0628

A07012 (N) Drive: Motor temperature model 1/3 overtemperature

Message class: Motor overload (8)
Reaction: NONE
Acknowledge: NONE
Cause: The motor temperature model 1/3 identified that the alarm threshold was exceeded.
Hysteresis:2K.
Alarm value (r2124, interpret decimal):
200:
Motor temperature model 1 (I2t): Temperature too high (p0605).
300:
Motor temperature model 3: Temperature too high (p5398).
See also: r0034 (Motor utilization thermal), p0605 (Mot_temp_mod 1/2/sensor threshold and temperature value), p0611 (I2t motor model thermal time constant), p0612 (Mot_temp_mod activation), p0613 (Mot_temp_mod 1/3 ambient temperature)

Remedy:
- check the motor load and if required, reduce.
- check the motor ambient temperature.
- check activation of the motor temperature model (p0612).
Motor temperature model 1 (I2t):
- check the thermal time constant (p0611).
- check the alarm threshold (p0605).
Motor temperature model 3:
- check the motor type.
- check the alarm threshold (p5398).
- check the model parameters.
See also: r0034 (Motor utilization thermal), p0605 (Mot_temp_mod 1/2/sensor threshold and temperature value), p0611 (I2t motor model thermal time constant), p0612 (Mot_temp_mod activation), r5397 (Mot_temp_mod 3 ambient temperature image p0613)

A07014 (N) Drive: Motor temperature model configuration alarm

Message class: Motor overload (8)
Reaction: NONE
Acknowledge: NONE
Cause: A fault has occurred in the configuration of the motor temperature model.
Alarm value (r2124, interpret decimal):
1:
All motor temperature models: It is not possible to save the model temperature
See also: p0610 (Motor overtemperature response)

Remedy:
- set the response for motor overtemperature to "Alarm and fault, no reduction of I_max" (p0610 = 2).
See also: p0610 (Motor overtemperature response)

A07015 Drive: Motor temperature sensor alarm

Message class: External measured value / signal state outside the permissible range (16)

Reaction: NONE

Acknowledge: NONE

Cause: An error was detected when evaluating the temperature sensor set in p0601.
With the fault, the time in p0607 is started. If the fault is still present after this time has expired, then fault F07016 is output; however, at the earliest, 50 ms after alarm A07015.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 2120 Ohm, PT1000: R > 2120 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm).

Remedy:
- make sure that the sensor is connected correctly.
- check the parameterization (p0601).

See also: r0035 (Motor temperature), p0601 (Motor temperature sensor type), p0607 (Temperature sensor fault timer)

F07016 Drive: Motor temperature sensor fault

Message class: External measured value / signal state outside the permissible range (16)

Reaction: OFF1 (NONE, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: An error was detected when evaluating the temperature sensor set in p0601.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 2120 Ohm, PT1000: R > 2120 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm).

Note:
If alarm A07015 is present, the time in p0607 is started. If the fault is still present after this time has expired, then fault F07016 is output; however, at the earliest, 50 ms after alarm A07015.
See also: p0607 (Temperature sensor fault timer)

Remedy:
- make sure that the sensor is connected correctly.
- check the parameterization (p0601).
- induction motors: De-activate temperature sensor fault (p0607 = 0).

See also: r0035 (Motor temperature), p0601 (Motor temperature sensor type), p0607 (Temperature sensor fault timer)

F07080 Drive: Incorrect control parameter

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The closed-loop control parameters have been parameterized incorrectly (e.g. p0356 = L_spread = 0).
Fault value (r0949, interpret decimal):
The fault value includes the parameter number involved.
See also: p0310, p0311, p0341, p0344, p0350, p0354, p0356, p0357, p0358, p0360, p0400, p0404, p0408, p0640, p1082, p1300

Remedy: Modify the parameter indicated in the fault value (r0949) (e.g. p0640 = current limit > 0).
See also: p0311, p0341, p0344, p0350, p0354, p0356, p0358, p0360, p0400, p0404, p0408, p0640, p1082

F07082 Macro: Execution not possible

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The macro cannot be executed.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex:
cccc = preliminary parameter number, bb = supplementary information, aa = fault cause
Fault causes for the trigger parameter itself:
19: Called file is not valid for the trigger parameter.
20: Called file is not valid for parameter 15.

21: Called file is not valid for parameter 700.
22: Called file is not valid for parameter 1000.
23: Called file is not valid for parameter 1500.
24: Data type of a TAG is incorrect (e.g. Index, number or bit is not U16).
Fault causes for the parameters to be set:
25: Error level has an undefined value.
26: Mode has an undefined value.
27: A value was entered as string in the tag value that is not "DEFAULT".
31: Entered drive object type unknown.
32: A device was not able to be found for the determined drive object number.
34: A trigger parameter was recursively called.
35: It is not permissible to write to the parameter via macro.
36: Check, writing to a parameter unsuccessful, parameter can only be read, not available, incorrect data type, value range or assignment incorrect.
37: Source parameter for a BICO interconnection was not able to be determined.
38: An index was set for a non-indexed (or CDS-dependent) parameter.
39: No index was set for an indexed parameter.
41: A bit operation is only permissible for parameters with the parameter format DISPLAY_BIN.
42: A value not equal to 0 or 1 was set for a BitOperation.
43: Reading the parameter to be changed by the BitOperation was unsuccessful.
51: Factory setting for DEVICE may only be executed on the DEVICE.
61: The setting of a value was unsuccessful.

Remedy: - check the parameter involved.
- check the macro file and BICO interconnection.
See also: p0015, p1000, p1500

F07083 Macro: ACX file not found

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The ACX file (macro) to be executed was not able to be found in the appropriate directory.
Fault value (r0949, interpret decimal):
Parameter number with which the execution was started.
See also: p0015, p1000, p1500
Remedy: - check whether the file is saved in the appropriate directory on the memory card.

F07084 Macro: Condition for WaitUntil not fulfilled

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The WaitUntil condition set in the macro was not fulfilled in a certain number of attempts.
Fault value (r0949, interpret decimal):
Parameter number for which the condition was set.
Remedy: Check and correct the conditions for the WaitUntil loop.

F07086 Units changeover: Parameter limit violation due to reference value change

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A reference parameter was changed in the system. This resulted in the fact that for the parameters involved, the selected value was not able to be written in the per unit notation.
The values of the parameters were set to the corresponding violated minimum limit/maximum limit or to the factory setting.
Possible causes:
- the steady-state minimum limit/maximum limit or that defined in the application was violated.

Fault value (r0949, parameter):
Diagnostics parameter to display the parameters that were not able to be re-calculated.
See also: p0304, p0305, p0310, p0596, p2000, p2001, p2002, p2003, r2004

Remedy: Check the adapted parameter value and if required correct.

F07088 Units changeover: Parameter limit violation due to units changeover

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A changeover of units was initiated. This resulted in a violation of a parameter limit
Possible causes for the violation of a parameter limit:
- When rounding off a parameter corresponding to its decimal places, the steady-state minimum limit or maximum limit was violated.
- inaccuracies for the data type "FloatingPoint".
In these cases, when the minimum limit is violated then the parameter value is rounded up and when the maximum limited is violated the parameter value is rounded down.
Fault value (r0949, interpret decimal):
Diagnostics parameter r9451 to display all parameters whose value had to be adapted.
See also: p0100 (IEC/NEMA mot stds), p0505 (Selecting the system of units), p0595 (Technological unit selection)
Remedy: Check the adapted parameter values and if required correct.
See also: r9451 (Units changeover adapted parameters)

A07089 Changing over units: Function module activation is blocked because the units have been changed over

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: An attempt was made to activate a function module. This is not permissible if the units have already been changed over.
See also: p0100 (IEC/NEMA mot stds), p0505 (Selecting the system of units)
Remedy: Restore units that have been changed over to the factory setting.

A07092 Drive: moment of inertia estimator still not ready

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The moment of inertia estimator still has no valid values.
The acceleration cannot be calculated.
The moment of inertia estimator is ready, if the frictional values (p1563, p1564) as well as the moment of inertia value (p1493) have been determined (r1407.26 = 1).
Remedy: Repeat the operation when the moment of inertia estimator is ready (r1407.26 = 1).

A07094 General parameter limit violation

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: As a result of the violation of a parameter limit, the parameter value was automatically corrected.
Minimum limit violated --> parameter is set to the minimum value.
Maximum limit violated --> parameter is set to the maximum value.
Alarm value (r2124, interpret decimal):
Parameter number, whose value had to be adapted.
Remedy: Check the adapted parameter values and if required correct.

A07200 Drive: Master control ON command present

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The ON/OFF1 command is present (no 0 signal).
The command is either influenced via binector input p0840 (current CDS) or control word bit 0 via the master control.

Remedy: Switch the signal via binector input p0840 (current CDS) or control word bit 0 via the master control to 0.

F07220 (N, A) Drive: Master control by PLC missing

Message class: Communication error to the higher-level control system (9)

Reaction: OFF1 (NONE, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: The "master control by PLC" signal was missing in operation.
- interconnection of the binector input for "master control by PLC" is incorrect (p0854).
- the higher-level control has withdrawn the "master control by PLC" signal.
- data transfer via the fieldbus (master/drive) was interrupted.

Remedy: - check the interconnection of the binector input for "master control by PLC" (p0854).
- check the "master control by PLC" signal and, if required, switch in.
- check the data transfer via the fieldbus (master/drive).

Note:
If the drive should continue to operate after withdrawing "master control by PLC" then fault response must be parameterized to NONE or the message type should be parameterized as alarm.

F07300 (A) Drive: Line contactor feedback signal missing

Message class: Auxiliary unit faulted (20)

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY

Cause: - the line contactor was not able to be closed within the time in p0861.
- the line contactor was not able to be opened within the time in p0861.
- the line contactor dropped out during operation
- the line contactor has closed although the drive converter is switched off.

Remedy: - check the setting of p0860.
- check the feedback circuit from the line contactor.
- increase the monitoring time in p0861.

See also: p0860 (Line contactor feedback signal), p0861 (Line contactor monitoring time)

F07320 Drive: Automatic restart interrupted

Message class: Application/technological function faulted (17)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: - the specified number of restart attempts (p1211) has been completely used up because within the monitoring time (p1213) the faults were not able to be acknowledged. The number of restart attempts (p1211) is decremented at each new start attempt.
- the monitoring time for the power unit has expired (p0857).
- when exiting commissioning or at the end of the motor identification routine or the speed controller optimization, the drive unit is not automatically switched on again.

Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - increase the number of restart attempts (p1211). The actual number of starting attempts is displayed in r1214.
- increase the delay time in p1212 and/or the monitoring time in p1213.
- either increase or disable the monitoring time of the power unit (p0857).
- reduce the delay time to reset the start counter (p1213[1]) so that fewer faults are registered in the time interval.

A07321 Drive: Automatic restart active

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The automatic restart (AR) is active. When the line supply returns and/or the causes of the existing faults are removed the drive is automatically restarted. The pulses are enabled and the motor starts to rotate.
For p1210 = 26, restarting is realized with the delayed setting of the ON command.
Remedy: - the automatic restart (AR) should, if required, be inhibited (p1210 = 0).
- an automatic restart can be directly interrupted by withdrawing the switch-on command (BI: p0840).
- for p1210 = 26: by withdrawing the OFF2- / OFF3 command.

F07330 Flying restart: Measured search current too low

Message class: Application/technological function faulted (17)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: During a flying restart, it was identified that the search current reached is too low.
It is possible that the motor is not connected.
Remedy: Check the motor feeder cables.

F07331 Flying restart: Function not supported

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: It is not possible to power up with the motor rotating (no flying restart).
In the following cases, the "flying restart" function is not supported:
PMSM: operation with U/f characteristic and sensorless vector control.
Note:
PMSM: permanent-magnet synchronous motor
Remedy: De-activate the "flying restart" function (p1200 = 0).

A07350 (F) Drive: Measuring probe parameterized to a digital output

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The measuring probe is connected to a bi-directional digital input/output and the terminal is set as output.
Alarm value (r2124, interpret decimal):
8: DI/DO 8 (X122.9/X132.1)
9: DI/DO 9 (X122.10/X132.2)
10: DI/DO 10 (X122.12/X132.3)
11: DI/DO 11 (X122.13/X132.4)
12: DI/DO 12 (X132.9)
13: DI/DO 13 (X132.10)
14: DI/DO 14 (X132.12)
15: DI/DO 15 (X132.13)
To the terminal designation:
The first designation is valid for CU320, the second for CU305.
Remedy: - set the terminal as input (p0728).
- de-select the measuring probe (p0488, p0489, p0580).

A07400 (N) Drive: DC link voltage maximum controller active

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The DC link voltage controller has been activated because the upper switch-in threshold has been exceeded (r1242, r1282).

The ramp-down times are automatically increased in order to maintain the DC link voltage (r0070) within the permissible limits. There is a system deviation between the setpoint and actual speeds.

When the DC link voltage controller is switched out (disabled), this is the reason that the ramp-function generator output is set to the speed actual value.

See also: r0056 (Status word, closed-loop control), p1240 (Vdc controller configuration (vector control)), p1280 (Vdc controller configuration (U/f))

Remedy: If the controller is not to intervene:

- increase the ramp-down times.
- switch off the Vdc_max controller (p1240 = 0 for vector control, p1280 = 0 for U/f control).

If the ramp-down times are not to be changed:

- use a chopper or regenerative feedback unit.

A07401 (N) Drive: DC link voltage maximum controller de-activated

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The Vdc_max controller can no longer maintain the DC link voltage (r0070) below the limit value (r1242, r1282) and was therefore switched out (disabled).

- the line supply voltage is permanently higher than specified for the power unit.
- the motor is permanently in the regenerative mode as a result of a load that is driving the motor.

Remedy:

- check whether the input voltage is within the permissible range (if required, increase the value in p0210).
- check whether the load duty cycle and load limits are within the permissible limits.

A07402 (N) Drive: DC link voltage minimum controller active

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The DC link voltage controller has been activated as the lower switch-in threshold has been undershot (r1246, r1286).

The kinetic energy of the motor is used to buffer the DC link. The drive is therefore braked.

See also: r0056 (Status word, closed-loop control), p1240 (Vdc controller configuration (vector control)), p1280 (Vdc controller configuration (U/f))

Remedy: The alarm disappears when power supply returns.

F07404 Drive: DC link voltage monitoring Vdc_max

Message class: DC-link overvoltage (4)

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring of the DC link voltage p1284 has responded (only U/f control).

Remedy:

- check the line supply voltage.
- check the braking module.
- adapt the device supply voltage (p0210).
- adapt the DC link voltage monitoring (p1284).

F07405 (N, A) Drive: Kinetic buffering minimum speed fallen below

Message class: Application/technological function faulted (17)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: During kinetic buffering the speed fell below minimum speed (p1257 or p1297 for vector drives with U/f control) and the line supply did not return.

Remedy: Check the speed threshold for the Vdc_min controller (kinetic buffering) (p1257, p1297).
See also: p1257 (Vdc_min controller speed threshold), p1297 (Vdc_min controller speed threshold (U/f))

F07406 (N, A) Drive: Kinetic buffering maximum time exceeded

Message class: Application/technological function faulted (17)
Reaction: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Acknowledge: IMMEDIATELY
Cause: The maximum buffer time (p1255 and p1295 for vector drives with U/f control) has been exceeded without the line supply having returned.
Remedy: Check the time threshold for Vdc-min controller (kinetic buffering) (p1255, p1295).
See also: p1255 (Vdc_min controller time threshold), p1295 (Vdc_min controller time threshold (U/f))

A07409 (N) Drive: U/f control, current limiting controller active

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The current limiting controller of the U/f control was activated because the current limit was exceeded.
Remedy: The alarm is automatically withdrawn after one of the following measures:
- increase current limit (p0640).
- reduce the load.
- slow down the ramp up to the setpoint speed.

F07410 Drive: Current controller output limited

Message class: Application/technological function faulted (17)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: The condition "I_act = 0 and Uq_set_1 longer than 16 ms at its limit" is present and can be caused by the following:
- motor not connected or motor contactor open.
- motor data and motor configuration (star-delta) do not match.
- no DC link voltage present.
- power unit defective.
- the "flying restart" function is not activated.

Remedy:
- connect the motor or check the motor contactor.
- check the motor parameterization and the connection type (star-delta).
- check the DC link voltage (r0070).
- check the power unit.
- activate the "flying restart" function (p1200).

F07411 Drive: Flux setpoint not reached when building up excitation

Message class: Application/technological function faulted (17)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: When quick magnetizing is configured (p1401.6 = 1) the specified flux setpoint is not reached although 90% of the maximum current is specified.
- incorrect motor data.
- motor data and motor configuration (star-delta) do not match.
- the current limit has been set too low for the motor.
- induction motor (encoderless, open-loop controlled) in I2t limiting.
- power unit is too small.
- the magnetizing time is too short.

Remedy: - correct the motor data. Perform motor data identification and rotating measurement.
- check the motor configuration.
- correct the current limits (p0640).
- reduce the induction motor load.
- if necessary, use a larger power unit.
- check motor supply cable.
- check power unit.
- increase p0346.

A07416 Drive: Flux controller configuration

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The configuration of the flux control (p1401) is contradictory.
Alarm value (r2124, interpret hexadecimal):
ccbbaaaa hex
aaaa = Parameter
bb = Index
cc = fault cause
1: Quick magnetizing (p1401.6) for soft starting (p1401.0).
2: Quick magnetizing for flux build-up control (p1401.2).
3: Quick magnetizing (p1401.6) for Rs identification after restart (p0621 = 2).
Remedy: For fault cause = 1:
- Shut down soft start (p1401.0 = 0).
- Shut down quick magnetizing (p1401.6 = 0).
For fault cause = 2:
- De-energize flux build-up control (p1401.2 = 0).
- Shut down quick magnetizing (p1401.6 = 0).
For fault cause = 3:
- Re-parameterize Rs identification (p0621 = 0, 1)
- Shut down quick magnetizing (p1401.6 = 0).

F07426 (A) Technology controller actual value limited

Message class: Application/technological function faulted (17)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The actual value for the technology controller, interconnected via connector input p2264, has reached a limit.
Fault value (r0949, interpret decimal):
1: upper limit reached.
2: lower limit reached.
Remedy: - adapt the limits to the signal level (p2267, p2268).
- check the actual value normalization (p0595, p0596).
See also: p0595 (Technological unit selection), p0596 (Technological unit reference quantity), p2264 (Technology controller actual value), p2267 (Technology controller upper limit actual value), p2268 (Technology controller lower limit actual value)

A07428 (N) Technology controller parameterizing error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The technology controller has a parameterizing error.
Alarm value (r2124, interpret decimal):
1:
The upper output limit in p2291 is set lower than the lower output limit in p2292.

Remedy: For alarm value = 1:
Set the output limit in p2291 higher than in p2292.
See also: p2291 (Technology controller maximum limiting), p2292 (Technology controller minimum limiting)

F07435 (N) Drive: Setting the ramp-function generator for sensorless vector control

Message class: Application/technological function faulted (17)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: During operation with sensorless vector control (r1407.1) the ramp-function generator was stopped (p1141). An internal setting command of the ramp-function generator output caused the set setpoint speed to be frozen.
Remedy: - de-activate the holding command for the ramp-function generator (p1141).
- suppress the fault (p2101, p2119). This is necessary if the ramp-function generator is held using jogging and the speed setpoint is simultaneously inhibited (r0898.6).

A07440 EPOS: Jerk time is limited

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The calculation of the jerk time Tr = max(p2572, p2573) / p2574 resulted in an excessively high value so that the jerk time is internally limited to 1000 ms.
Note:
The alarm is also output if jerk limiting is not active.
Remedy: - increase the jerk limiting (p2574).
- reduce maximum acceleration or maximum deceleration (p2572, p2573).
See also: p2572 (EPOS maximum acceleration), p2573 (EPOS maximum deceleration), p2574 (EPOS jerk limiting)

A07441 LR: Save the position offset of the absolute encoder adjustment

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The status of the absolute encoder adjustment has changed.
In order to permanently save the determined position offset (p2525) it must be saved in a non-volatile fashion (p0971).
Remedy: Not necessary.
This alarm automatically disappears after the offset has been saved.
See also: p2507 (LR absolute encoder adjustment status), p2525 (LR encoder adjustment offset)

F07442 (A) LR: Multiturn does not match the modulo range

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The ratio between the multiturn resolution and the modulo range (p2576) is not an integer number.
This results in the adjustment being set back, as the position actual value cannot be reproduced after switch-off/switch-on.
Remedy: Make the ration between the multiturn resolution and the modulo range an integer number.
The ratio v is calculated as follows:
1. Motor encoder
v = (p0421 * p2506 * p2505) / (p2504 * p2576)
2. Direct encoder
v = (p0421 * p2506) / p2576
See also: p0412, p0432, p0433, p2504, p2505, p2506, p2576, p2721

F07443 (A) LR: Reference point coordinate not in the permissible range

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The reference point coordinate received when adjusting the encoder via connector input p2599 lies outside the half of the encoder range and cannot be set as actual axis position.
Fault value (r0949, interpret decimal):
Maximum permissible value for the reference point coordinate.

Remedy: Set the reference point coordinate to a lower value than specified in the fault value.
See also: p2598 (EPOS reference point coordinate signal source), p2599 (EPOS reference point coordinate value)

F07450 (A) LR: Standstill monitoring has responded

Message class: Application/technological function faulted (17)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: After the standstill monitoring time (p2543) expired, the drive left the standstill window (p2542).
- position actual value inversion incorrectly set (p0410).
- standstill window set too small (p2542).
- standstill monitoring time set too low (p2543).
- position loop gain too low (p2538).
- position loop gain too high (instability/oscillation, p2538).
- mechanical overload.
- Connecting cable, motor/drive converter incorrect (phase missing, interchanged).
- when selecting motor identification, select tracking mode (BI: p2655[0] = 1 signal).
- when selecting function generator, select tracking mode (BI: p2655[0] = 1 signal) and de-activate position control (BI:p2550 = 0 signal).

Remedy: Check the causes and resolve.

F07451 (A) LR: Position monitoring has responded

Message class: Application/technological function faulted (17)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When the position monitoring time (p2545) expired, the drive had still not reached the positioning window (p2544).
- positioning window parameterized too small (p2544).
- position monitoring time parameterized too short (p2545).
- position loop gain too low (p2538).
- position loop gain too high (instability/oscillation, p2538).
- drive mechanically locked.

Remedy: Check the causes and resolve.

F07452 (A) LR: Following error too high

Message class: Application/technological function faulted (17)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The difference between the position setpoint position actual value (following error dynamic model, r2563) is higher than the tolerance (p2546).
- the drive torque or accelerating capacity exceeded.
- position measuring system fault.
- encoder cable interrupted.
- position control sense incorrect.
- mechanical system locked.
- excessively high traversing velocity or excessively high position reference value (setpoint) differences

Remedy: Check the causes and resolve.

F07453 LR: Position actual value preprocessing error

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: An error has occurred during the position actual value preprocessing.
Remedy: Check the encoder for the position actual value preprocessing.
See also: p2502 (LR encoder assignment)

A07454 LR: Position actual value preprocessing does not have a valid encoder

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: One of the following problems has occurred with the position actual value preprocessing:
- an encoder is not assigned for the position actual value preprocessing (p2502 = 0).
- an encoder is assigned, but no encoder data set (p0187 = 99 or p0188 = 99).
- an encoder an an encoder data set have been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

Remedy: Check the drive data sets, encoder data sets and encoder assignment.
See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

A07455 EPOS: Maximum velocity limited

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The maximum velocity (p2571) is too high to correctly calculate the modulo correction.
Within the sampling time for positioning (8 ms), with the maximum velocity, a maximum of the half modulo length must be moved through. p2571 was limited to this value.
Remedy: Reduce the maximum velocity (p2571).

A07456 EPOS: Setpoint velocity limited

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The actual setpoint velocity is greater than the parameterized maximum velocity (p2571) and is therefore limited.
Remedy: - check the entered setpoint velocity.
- reduce the velocity override (CI: p2646).
- increase the maximum velocity (p2571).
- check the signal source for the externally limited velocity (CI: p2594).

A07457 EPOS: Combination of input signals illegal

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: An illegal combination of input signals that are simultaneously set was identified.
Alarm value (r2124, interpret decimal):
0: Jog 1 and jog 2 (p2589, p2590).
1: Jog 1 or jog 2 and direct setpoint input/MDI (p2589, p2590, p2647).
2: Jog 1 or jog 2 and start referencing (p2589, p2590, p2595).
3: Jog 1 or jog 2 and activate traversing task (p2589, p2590, p2631).
4: Direct setpoint input/MDI and starting referencing (p2647, p2595).
5: Direct setpoint input/MDI and activate traversing task (p2647, p2631).
6: Start referencing and activate traversing task (p2595, p2631).
Remedy: Check the appropriate input signals and correct.

F07458 EPOS: Reference cam not found

Message class: Application/technological function faulted (17)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: After starting the search for reference, the axis moved through the maximum permissible distance to search for the reference cam without actually finding the reference cam.

Remedy: - check the "reference cam" binector input (BI: p2612).
- check the maximum permissible distance to the reference cam (p2606).
- if axis does not have any reference cam, then set p2607 to 0.

See also: p2606 (EPOS search for reference reference cam maximum distance), p2607 (EPOS search for reference reference cam present), p2612 (EPOS search for reference reference cam)

F07459 EPOS: No zero mark

Message class: Application/technological function faulted (17)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: After leaving the reference cam, the axis has traversed the maximum permissible distance between the reference cam and zero mark without finding the zero mark.

Remedy: - check the encoder regarding the zero mark
- check the maximum permissible distance between the reference cam and zero mark (p2609).
- use an external encoder zero mark (equivalent zero mark) (p0494).

See also: p0494 (Equivalent zero mark input terminal), p2609 (EPOS search for reference max distance ref cam and zero mark)

F07460 EPOS: End of reference cam not found

Message class: Application/technological function faulted (17)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: During the search for reference, when the axis reached the zero mark it also reached the end of the traversing range without detecting an edge at the binector input "reference cam" (BI: p2612).
Maximum traversing range: -2147483648 [LU] ... -2147483647 [LU]

Remedy: - check the "reference cam" binector input (BI: p2612).
- repeat the search for reference.

See also: p2612 (EPOS search for reference reference cam)

A07461 EPOS: Reference point not set

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: When starting a traversing block/direct setpoint input, a reference point is not set (r2684.11 = 0).

Remedy: Reference the system (search for reference, flying referencing, set reference point).

A07462 EPOS: Selected traversing block number does not exist

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: A traversing block selected via binector input p2625 ... p2630 was started via binector input p2631 = 0/1 edge "Activate traversing task".
- the number of the started traversing block is not contained in p2616[0...n].
- the started traversing block is suppressed.
Alarm value (r2124, interpret decimal):
Number of the selected traversing block that is also not available.

Remedy: - correct the traversing program.
- select an available traversing block number.

A07463 (F)	EPOS: External block change not requested in the traversing block
Message class:	Application/technological function faulted (17)
Reaction:	NONE
Acknowledge:	NONE
Cause:	For a traversing block with the block change enable CONTINUE_EXTERNAL_ALARM, the external block change was not requested. Alarm value (r2124, interpret decimal): Number of the traversing block.
Remedy:	Resolve the reason as to why the edge is missing at binector input (BI: p2632).

F07464	EPOS: Traversing block is inconsistent
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	OFF1 (OFF2, OFF3)
Acknowledge:	IMMEDIATELY
Cause:	The traversing block does not contain valid information. Fault value (r0949, interpret decimal): Number of the traversing block with invalid information.
Remedy:	Check the traversing block and where relevant, take into consideration alarms that are present.

A07465	EPOS: Traversing block does not have a subsequent block
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	NONE
Cause:	There is no subsequent block in the traversing block. Alarm value (r2124, interpret decimal): Number of the traversing block with the missing subsequent block.
Remedy:	- parameterize this traversing block with the block change enable END. - parameterize additional traversing blocks with a higher block number and for the last block, using the block change enable END.

A07466	EPOS: Traversing block number assigned a multiple number of times
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	NONE
Cause:	The same traversing block number was assigned a multiple number of times. Alarm value (r2124, interpret decimal): Number of the traversing block that was assigned a multiple number of times.
Remedy:	Correct the traversing blocks.

A07467	EPOS: Traversing block has illegal task parameters
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	NONE
Cause:	The task parameter in the traversing block contains an illegal value. Alarm value (r2124, interpret decimal): Number of the traversing block with an illegal task parameter.
Remedy:	Correct the task parameter in the traversing block.

A07468	EPOS: Traversing block jump destination does not exist
Message class:	Error in the parameterization / configuration / commissioning procedure (18)
Reaction:	NONE
Acknowledge:	NONE
Cause:	In a traversing block, a jump was programmed to a non-existent block. Alarm value (r2124, interpret decimal): Number of the traversing block with a jump destination that does not exist.

Remedy: - correct the traversing block.
- add the missing traversing block.

A07469 EPOS: Traversing block < target position < software limit switch minus

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In the traversing block the specified absolute target position lies outside the range limited by the software limit switch minus.
Alarm value (r2124, interpret decimal):
Number of the traversing block with illegal target position.
Remedy: - correct the traversing block.
- change software limit switch minus (CI: p2578, p2580).

A07470 EPOS: Traversing block> target position > software limit switch plus

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In the traversing block the specified absolute target position lies outside the range limited by the software limit switch plus.
Alarm value (r2124, interpret decimal):
Number of the traversing block with illegal target position.
Remedy: - correct the traversing block.
- change software limit switch plus (CI: p2579, p2581).

A07471 EPOS: Traversing block target position outside the modulo range

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: In the traversing block the target position lies outside the modulo range.
Alarm value (r2124, interpret decimal):
Number of the traversing block with illegal target position.
Remedy: - in the traversing block, correct the target position.
- change the modulo range (p2576).

A07472 EPOS: Traversing block ABS_POS/ABS_NEG not possible

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: In the traversing block the positioning mode ABS_POS or ABS_NEG were parameterized with the modulo correction not activated.
Alarm value (r2124, interpret decimal):
Number of the traversing block with the illegal positioning mode.
Remedy: Correct the traversing block.

A07473 (F) EPOS: Beginning of traversing range reached

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: When traversing, the axis has moved to the traversing range limit.
Remedy: Move away in the positive direction.

A07474 (F) **EPOS: End of traversing range reached**

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: When traversing, the axis has moved to the traversing range limit.
Remedy: Move away in the negative direction.

F07475 (A) **EPOS: Target position < start of traversing range**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The target position for relative traversing lies outside the traversing range.
Remedy: Correct the target position.

F07476 (A) **EPOS: Target position > end of the traversing range**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The target position for relative traversing lies outside the traversing range.
Remedy: Correct the target position.

A07477 (F) **EPOS: Target position < software limit switch minus**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In the actual traversing operation, the target position is less than the software limit switch minus.
Remedy: - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also: p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

A07478 (F) **EPOS: Target position > software limit switch plus**

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In the actual traversing operation, the target position is greater than the software limit switch plus.
Remedy: - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also: p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

A07479 **EPOS: Software limit switch minus reached**

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The axis is at the position of the software limit switch minus. An active traversing block was interrupted.
Remedy: - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also: p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

A07480 **EPOS: Software limit switch plus reached**

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The axis is at the position of the software limit switch plus. An active traversing block was interrupted.

Remedy: - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also: p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

F07481 (A) EPOS: Axis position < software limit switch minus

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The actual position of the axis is less than the position of the software limit switch minus.
Remedy: - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also: p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

F07482 (A) EPOS: Axis position > software limit switch plus

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The actual position of the axis is greater than the position of the software limit switch plus.
Remedy: - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also: p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

A07483 EPOS: Travel to fixed stop clamping torque not reached

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The fixed stop in the traversing block was reached without the clamping torque/clamping force having been achieved.
Remedy: - check the maximum torque-generating current (r1533).
- check the torque limits (p1520, p1521).
- check the power limits (p1530, p1531).
- check the BICO interconnections of the torque limits (p1522, p1523, p1528, p1529).

F07484 EPOS: Fixed stop outside the monitoring window

Message class: Application/technological function faulted (17)
Reaction: OFF3 (OFF1, OFF2)
Acknowledge: IMMEDIATELY
Cause: In the "fixed stop reached" state, the axis has moved outside the defined monitoring window (p2635).
Remedy: - check the monitoring window (p2635).
- check the mechanical system.

F07485 (A) EPOS: Fixed stop not reached

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: In a traversing block with the task FIXED STOP, the end position was reached without detecting a fixed stop.
Remedy: - check the traversing block and locate the target position further into the workpiece.
- check the "fixed stop reached" control signal (p2637).
- if required, reduce the maximum following error window to detect the fixed stop (p2634).

A07486 EPOS: Intermediate stop missing

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: In the modes "traversing blocks" or "direct setpoint input/MDI" at the start of motion, the binector input "no intermediate stop/intermediate stop" (BI: p2640) did not have a 1 signal.
Remedy: Connect a 1 signal to the binector input "no intermediate stop/intermediate stop" (BI: p2640) and re-start motion.
See also: p2640 (EPOS intermediate stop (0 signal))

A07487 EPOS: Reject traversing task missing

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: In the modes "traversing blocks" or "direct setpoint input/MDI" at the start of motion, the binector input "do not reject traversing task/reject traversing task" (BI: p2641) does not have a 1 signal.
Remedy: Connect a 1 signal to the binector input "do not reject traversing task/reject traversing task" (BI: p2641) and restart motion.
See also: p2641 (EPOS reject traversing task (0 signal))

F07488 EPOS: Relative positioning not possible

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: In the mode "direct setpoint input/MDI", for continuous transfer (p2649 = 1) relative positioning was selected (BI: p2648 = 0 signal).
Remedy: Check the control.

A07489 EPOS: Reference point correction outside the window

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: For the function "flying referencing" the difference between the measured position at the measuring probe and the reference point coordinate lies outside the parameterized window.
Remedy: - check the mechanical system.
- check the parameterization of the window (p2602).

F07490 (N) EPOS: Enable signal withdrawn while traversing

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: - for a standard assignment, another fault may have occurred as a result of withdrawing the enable signals.
- the drive is in the "switching-on inhibited" state (for a standard assignment).
Remedy: - set the enable signals or check the cause of the fault that first occurred and then result (for a standard assignment).
- check the assignment to enable the basic positioning function.

F07491 (A) EPOS: STOP cam minus reached

Message class: Application/technological function faulted (17)
Reaction: OFF3
Acknowledge: IMMEDIATELY
Cause: A 0 signal was detected at binector input BI: p2569, i.e. the STOP cam minus was reached.
For a positive traversing direction, the STOP cam minus was reached - i.e. the wiring of the STOP cam is incorrect.
See also: p2569 (EPOS STOP cam minus)
Remedy: - leave the STOP cam minus in the positive traversing direction and return the axis to the valid traversing range.
- check the wiring of the STOP cam.

F07492 (A) EPOS: STOP cam plus reached

Message class: Application/technological function faulted (17)
Reaction: OFF3
Acknowledge: IMMEDIATELY
Cause: A 0 signal was detected at binector input BI: p2570, i.e. the STOP cam plus was reached.
For a negative traversing direction, the STOP cam plus was reached - i.e. the wiring of the STOP cam is incorrect.
See also: p2570 (EPOS STOP cam plus)
Remedy: - leave the STOP cam plus in the negative traversing direction and return the axis to the valid traversing range.
- check the wiring of the STOP cam.

F07493 LR: Overflow of the value range for position actual value

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the "referenced" or "adjustment absolute measuring system" status is reset.
Fault value (r0949, interpret decimal):
1: The position actual value (r2521) has exceeded the value range.
2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.
3: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.
Note:
For a linear encoder, the following must be maintained:
- p0407 * p2503 / (2^p0418*10^7) < 1
- p0407 * p2503 / (2^p0419*10^7) < 1
Remedy: If required, reduce the traversing range or position resolution (p2506).
Increase the fine resolution of absolute position actual value (p0419).
Note for fault value = 3:
If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.
For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:
1. Motor encoder
p2506 * p2505 / p2504
p2506 * p2505 * p0421 / p2504 for multiturn encoders
2. Direct encoder
p2506
p2506 * p0421 for multiturn encoders

F07494 LR: Drive Data Set changeover in operation

Message class: Application/technological function faulted (17)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A Drive Data Set changeover (DDS) with a change of the mechanical relationships (p2503 ... 2506), direction of rotation (p1821) or the encoder assignment (p2502) was requested in operation.
Note:
DDS: Drive Data Set
Remedy: To changeover the drive data set, initially, exit the "operation" mode.

A07495 (F) LR: Reference function interrupted

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: An activated reference function (reference mark search or measuring probe evaluation) was interrupted.
Possible causes:
- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was de-activated (BI: p2508 and BI: p2509 = 0 signal).
- the input terminal for the measuring probe is not set.

Remedy:
- check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.
- set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).

A07496 EPOS: Enable not possible

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: It is not possible to enable the basic positioner because at least one signal is missing.
Alarm value (r2124, interpret decimal):
1: EPOS enable missing (BI: p2656).
2: Position actual value, valid feedback signal missing (BI: p2658).
See also: p2656 (EPOS enable basic positioner), p2658 (EPOS pos. actual value valid feedback signal)
Remedy: Check the appropriate binector inputs and signals.

A07497 (N) LR: Position setting value activated

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The position actual value is set to the value received via CI: p2515while BI: p2514 = 1 signal. A possible system deviation cannot be corrected.
Remedy: Not necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

A07498 (F) LR: Measuring probe evaluation not possible

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6:
The input terminal for the measuring probe is not set.
4098:
Error when initializing the measuring probe.
4100:
The measuring pulse frequency is too high.
> 50000:
The measuring clock cycle is not a multiple integer of the position controller clock cycle.
Remedy: De-activate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).

For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value > 50000:
Set the clock cycle ratio of the measuring clock cycle to the position controller clock cycle to an integer multiple.
To do this, the currently effective measuring clock cycle can be determined from the alarm value as follows:
Tmeas [125 µs] = alarm value - 50000
With PROFIBUS, the measuring clock cycle corresponds to the PROFIBUS clock cycle (r2064[1]).
Without PROFIBUS, the measuring clock cycle is an internal cycle time that cannot be influenced.

F07499 (A) EPOS: Reversing cam approached with the incorrect traversing direction

Message class: Application/technological function faulted (17)
Reaction: OFF3
Acknowledge: IMMEDIATELY
Cause: The reversing cam MINUS was approached in the positive traversing direction or the reversing cam PLUS was approached in the negative traversing direction.
See also: p2613 (EPOS search for reference reversing cam minus), p2614 (EPOS search for reference reversing cam plus)
Remedy: - check the wiring of the reversing cam (BI: p2613, BI: p2614).
- check the traversing direction to approach the reversing cam.

F07503 EPOS: STOP cam approached with the incorrect traversing direction

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The STOP cam MINUS was approached in the positive traversing direction or the STOP cam PLUS was approached in the negative traversing direction.
Remedy: - check the wiring of the STOP cam (BI: p2569, BI: p2570).
- check the traversing direction to approach the STOP cam.

A07505 EPOS: Task fixed stop not possible in the U/f/SLVC mode

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In the U/f/SLVC mode, an attempt was made to execute a traversing block with the "fixed stop" task. This is not possible.
Alarm value (r2124, interpret decimal):
Number of the traversing block with an illegal task parameter.
Remedy: - check the traversing block and change the task.
- change the open-loop/closed-loop control mode (p1300).
See also: p1300 (Open-loop/closed-loop control operating mode), p2621 (EPOS traversing block task)

F07509 Drive: Component assignment missing

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: An encoder (p0187, p0188) was selected, however no physical connection assigned (p0468).
Remedy: For operation with encoder, set the encoder interface (p0468).
Note:
If operation without encoder is required, set the encoder assignment to "not used" (p0187 = 99 or p0188 = 99).
See also: p0142 (Encoder component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number)

A07530 Drive: Drive Data Set DDS not present

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The selected drive data set is not available (p0837 > p0180). The drive data set was not changed over.

See also: p0180 (Number of Drive Data Sets (DDS)), p0820 (Drive Data Set selection DDS bit 0), p0821 (Drive Data Set selection DDS bit 1), r0837 (Drive Data Set DDS selected)

Remedy: - select the existing drive data set.

- set up additional drive data sets.

A07531 Drive: Command Data Set CDS not present

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The selected command data set is not available (p0836 > p0170). The command data set was not changed over.

See also: p0810 (Command data set selection CDS bit 0), p0811 (Command data set selection CDS bit 1), r0836 (Command Data Set CDS selected)

Remedy: - select the existing command data set.

- set up additional command data sets.

A07550 (F, N) Drive: Not possible to reset encoder parameters

Message class: Hardware/software error (1)

Reaction: NONE

Acknowledge: NONE

Cause: When carrying out a factory setting (e.g. using p0970 = 1), it was not possible to reset the encoder parameters. The encoder parameters are directly read out of the encoder via DRIVE-CLiQ.

Alarm value (r2124, interpret decimal):

Component number of the encoder involved.

Remedy: - repeat the operation.

- check the DRIVE-CLiQ connection.

F07551 Drive encoder: No commutation angle information

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The commutation angle information is missing. This means that synchronous motors cannot be controlled (closed-loop control)

Fault value (r0949, interpret decimal):

yyyyxxxx dec: yyyy = fault cause, xxxx = drive data set

yyyy = 1 dec:

The motor encoder used does not supply an absolute commutation angle.

yyyy = 2 dec:

The selected ratio of the measuring gear does not match the motor pole pair number.

Remedy: For fault cause = 1:

- check the encoder parameterization (p0404).

- use an encoder with track C/D, EnDat interface of Hall sensors.

- use an encoder with sinusoidal A/B track for which the motor pole pair number (r0313) is an integer multiple of the encoder pulse number (p0408).

- activate the pole position identification routine (p1982 = 1) for motor encoders without absolute position information. Then, using an encoder adjustment (p1990), the angular commutation offset should be determined.

For fault cause = 2:

- the quotient of the pole pair number divided by the ratio of the measuring gear must be an integer number: (p0314 * p0433) / p0432.

Note:

For operation with track C/D, this quotient must be less than 8.

See also: p0402 (Gearbox type selection), p0404 (Encoder configuration effective), p0432 (Gearbox factor encoder revolutions), p0433 (Gearbox factor motor/load revolutions)

F07552 (A) Drive encoder: Encoder configuration not supported

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The requested encoder configuration is not supported. Only bits may be requested in p0404 that are signaled as being supported by the encoder evaluation in r0456.

Fault value (r0949, interpret decimal):

ccccbbaa hex: cccc = fault cause, bb = component number, aa = encoder data set

cccc = 1: encoder sin/cos with absolute track (is supported by SME25).

cccc = 3: Squarewave encoder (this is supported by SMC30).

cccc = 4: sin/cos encoder (this is supported by SMC20, SMI20, SME20, SME25).

cccc = 10: DRIVE-CLiQ encoder (is supported by DQI).

cccc = 12: sin/cos encoder with reference mark (this is supported by SME20).

cccc = 15: Commutation with zero mark for separately-excited synchronous motors with VECTORMV.

cccc = 23: Resolver (this is supported by SMC10, SMI10).

cccc = 65535: Other function (compare r0456 and p0404).

See also: p0404 (Encoder configuration effective), r0456 (Encoder configuration supported)

Remedy: - check the encoder parameterization (p0400, p0404).

- use the matching encoder evaluation (r0456).

F07553 (A) Drive encoder: Sensor Module configuration not supported

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Sensor Module does not support the requested configuration.

For incorrect p0430 (cc = 0), the following applies:

- in p0430 (requested functions), at least 1 bit was set that is not set in r0458 (supported functions) (exception: Bit 19, 28, 29, 30, 31).

- p1982 > 0 (pole position identification requested), but r0458.16 = 0 (pole position identification not supported).

For incorrect p0437 (cc = 1), the following applies:

- in p0437 (requested functions), at least 1 bit was set that is not set in r0459 (supported functions).

Fault value (r0949, interpret hexadecimal):

ddccbbaa hex

aa: encoder data set number

bb: first incorrect bit

cc: incorrect parameter

cc = 0: incorrect parameter is p0430

cc = 1: incorrect parameter is p0437

cc = 2: incorrect parameter is r0459

dd: reserved (always 0)

Remedy: - check the encoder parameterization (p0430, p0437).

- check the pole position identification routine (p1982).

- use the matching encoder evaluation (r0458, r0459).

See also: p0430 (Sensor Module configuration), p0437 (Sensor Module configuration extended), r0458 (Sensor Module properties), r0459 (Sensor Module properties extended)

F07555 (A) Drive encoder: Configuration position tracking

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: For position tracking, the configuration is not supported.

Position tracking can only be activated for absolute encoders.

For linear axes, it is not possible to simultaneously activate the position tracking for load and measuring gears.

Fault value (r0949, interpret hexadecimal):

ddccbbaa hex

aa = encoder data set

bb = component number

cc = drive data set

dd = fault cause

dd = 00 hex = 0 dec

An absolute encoder is not being used.

dd = 01 hex = 1 dec

Position tracking cannot be activated because the memory of the internal NVRAM is not sufficient or a Control Unit does not have an NVRAM.

dd = 02 hex = 2 dec

For a linear axis, the position tracking was activated for the load and measuring gear.

dd = 03 hex = 3 dec

Position tracking cannot be activated because position tracking with another gear ratio, axis type or tolerance window has already been detected for this encoder data set.

dd = 04 hex = 4 dec

A linear encoder is being used.

See also: p0404 (Encoder configuration effective), p0411 (Measuring gear configuration)

Remedy: For fault value 0:

- use an absolute encoder.

For fault value 1:

- use a Control Unit with sufficient NVRAM.

For fault value = 2, 4:

- if necessary, de-select the position tracking (p0411 for the measuring gear, p2720 for the load gear).

For fault value 3:

- Only activate position tracking of the load gear in the same encoder data set if the gear ratio (p2504, p2505), axis type (p2720.1) and tolerance window (p2722) are also the same. These parameters must be the same in all drive data sets, which use the same motor encoder (p187).

F07556 Measuring gear: Position tracking, maximum actual value exceeded

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When the position tracking of the measuring gear is configured, the drive/encoder identifies a maximum possible absolute position actual value (r0483) that cannot be represented within 32 bits.

Maximum value: p0408 * p0412 * 2^p0419

Fault value (r0949, interpret decimal):

aaaayyxx hex: yy = component number, xx = encoder data set

See also: p0408 (Rotary encoder pulse number), p0412 (Measuring gear absolute encoder rotary revolutions virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))

Remedy: - reduce the fine resolution (p0419).

- reduce the multiturn resolution (p0412).

See also: p0412 (Measuring gear absolute encoder rotary revolutions virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))

A07557 (F) Encoder 1: Reference point coordinate not in the permissible range

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The reference point coordinate received when adjusting the encoder via connector input CI:p2599 lies outside the half of the encoder range and cannot be set as actual axis position. The maximum permissible value is displayed in the supplementary information.

Remedy: Set the reference point coordinate less than the value from the supplementary information.

See also: p2598 (EPOS reference point coordinate signal source)

A07558 (F) Encoder 2: Reference point coordinate not in the permissible range

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The reference point coordinate received when adjusting the encoder via connector input CI:p2599 lies outside the half of the encoder range and cannot be set as actual axis position. The maximum permissible value is displayed in the supplementary information.

Remedy: Set the reference point coordinate less than the value from the supplementary information.

See also: p2598 (EPOS reference point coordinate signal source)

F07560 Drive encoder: Number of pulses is not to the power of two

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: For rotary absolute encoders, the pulse number in p0408 must be to the power of two.

Fault value (r0949, interpret decimal):

The fault value includes the encoder data set number involved.

Remedy: - check the parameterization (p0408, p0404.1, r0458.5).

- upgrade the Sensor Module firmware if necessary

F07561 Drive encoder: Number of multiturn pulses is not to the power of two

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The multiturn resolution in p0421 must be to the power of two.

Fault value (r0949, interpret decimal):

The fault value includes the encoder data set number involved.

Remedy: - check the parameterization (p0421, p0404.1, r0458.5).

- upgrade the Sensor Module firmware if necessary

F07562 (A) Drive, encoder: Position tracking, incremental encoder not possible

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The requested position tracking for incremental encoders is not supported.

Fault value (r0949, interpret hexadecimal):

ccccbbaa hex

aa = encoder data set

bb = component number

cccc = fault cause

cccc = 00 hex = 0 dec

The encoder type does not support the "Position tracking incremental encoder" function.

cccc = 01 hex = 1 dec

Position tracking cannot be activated because the memory of the internal NVRAM is not sufficient or a Control Unit does not have an NVRAM.

cccc = 04 hex = 4 dec
A linear encoder is used that does not support the "position tracking" function.
See also: p0404 (Encoder configuration effective), p0411 (Measuring gear configuration), r0456 (Encoder configuration supported)

Remedy:
- check the encoder parameterization (p0400, p0404).
- use a Control Unit with sufficient NVRAM.
- if required, de-select position tracking for the incremental encoder (p0411.3 = 0).

F07563 (A) Drive encoder: XIST1_ERW configuration incorrect

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An incorrect configuration was identified for the "Absolute position for incremental encoder" function.
Fault value (r0949, interpret decimal):
Fault cause:
1 (= 01 hex):
The "Absolute value for incremental encoder" function is not supported (r0459.13 = 0).
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
yyxx dec: yy = fault cause, xx = encoder data set
See also: r0459 (Sensor Module properties extended), p4652 (XIST1_ERW reset mode)
Remedy: For fault value = 1:
- upgrade the Sensor Module firmware version.
- check the mode (p4652 = 1, 3 requires the property r0459.13 = 1).

A07565 (F, N) Drive: Encoder error in PROFIdrive encoder interface 1

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: An encoder error was signaled for encoder 1 via the PROFIdrive encoder interface (G1_ZSW.15).
Alarm value (r2124, interpret decimal):
Error code from G1_XIST2, refer to the description regarding r0483.
Note:
This alarm is only output if p0480[0] is not equal to zero.
Remedy: Acknowledge the encoder error using the encoder control word (G1_STW.15 = 1).

A07566 (F, N) Drive: Encoder error in PROFIdrive encoder interface 2

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: An encoder error was signaled for encoder 2 via the PROFIdrive encoder interface (G2_ZSW.15).
Alarm value (r2124, interpret decimal):
Error code from G2_XIST2, refer to the description regarding r0483.
Note:
This alarm is only output if p0480[1] is not equal to zero.
Remedy: Acknowledge the encoder error using the encoder control word (G2_STW.15 = 1).

A07569 (F) Enc identification active

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: During encoder identification (waiting) with p0400 = 10100, the encoder could still not be identified.
Either the wrong encoder has been installed or no encoder has been installed, the wrong encoder cable has been connected or no encoder cable has been connected to the Sensor Module, or the DRIVE-CLiQ component has not been connected.

Note:
Encoder identification must be supported by the encoder and is possible in the following cases:
- Encoder with EnDat interface.
- Encoder with SSI interface.
- Motor with DRIVE-CLiQ.

Remedy:
- check and, if necessary, connect the encoder / encoder cable.
- check and, if necessary, establish the DRIVE-CLiQ connection.
- for SSI encoders, carry out the required operator actions (see the Function Manual).
- in the case of encoders that cannot be identified (e.g. encoders without EnDat interface), enter the correct encoder type in p0400.

N07570 (F) Encoder identification data transfer running

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: NONE
Cause: The encoder type was automatically determined using p0400 = 10100.
Note:
This fault causes the pulses to be suppressed - this is necessary to transfer the encoder parameterization to p0400 and the following.
See also: p0400 (Encoder type selection)
Remedy: Acknowledge the fault without taking additional measures.

A07577 (F) Encoder 1: Measuring probe evaluation not possible

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6: The input terminal for the measuring probe is not set.
4098: Error when initializing the measuring probe.
4100: The measuring pulse frequency is too high.
4200: The PROFIBUS clock cycle is not a multiple of integer of the position controller clock cycle.
Remedy: De-activate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

A07578 (F) Encoder 2: Measuring probe evaluation not possible

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6: The input terminal for the measuring probe is not set.
4098: Error when initializing the measuring probe.
4100: The measuring pulse frequency is too high.
4200: The PROFIBUS clock cycle is not a multiple of integer of the position controller clock cycle.

Remedy: De-activate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

A07581 (F) Encoder 1: Position actual value preprocessing error

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: An error has occurred during the position actual value preprocessing.
Remedy: Check the encoder for the position actual value preprocessing.
See also: p2502 (LR encoder assignment)

A07582 (F) Encoder 2: Position actual value preprocessing error

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: An error has occurred during the position actual value preprocessing.
Remedy: Check the encoder for the position actual value preprocessing.
See also: p2502 (LR encoder assignment)

A07584 Encoder 1: Position setting value activated

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The position actual value is set to the value received via CI: p2515while BI: p2514 = 1 signal. A possible system deviation cannot be corrected.
Remedy: Not necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

A07585 Encoder 2: Position setting value activated

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The position actual value is set to the value received via CI: p2515while BI: p2514 = 1 signal. A possible system deviation cannot be corrected.
Remedy: Not necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

A07587 Encoder 1: Position actual value preprocessing does not have a valid encoder

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The following problem has occurred during the position actual value preprocessing.
- an encoder data set has been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).
Remedy: Check the drive data sets, encoder data sets.
See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

A07588 Encoder 2: Position actual value preprocessing does not have a valid encoder

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The following problem has occurred during the position actual value preprocessing.
- an encoder data set has been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

Remedy: Check the drive data sets, encoder data sets.
See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

A07590 (F) Encoder 1: Drive Data Set changeover in operation

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: A Drive Data Set changeover (DDS) with a change of the mechanical relationships and the encoder assignment (p2502) was requested in operation.

Remedy: To changeover the drive data set, initially, exit the "operation" mode.

A07591 (F) Encoder 2: Drive Data Set changeover in operation

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: A Drive Data Set changeover (DDS) with a change of the mechanical relationships and the encoder assignment (p2502) was requested in operation.

Remedy: To changeover the drive data set, initially, exit the "operation" mode.

A07593 (F, N) Encoder 1: Value range for position actual value exceeded

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the "referenced" or "absolute encoder adjusted" status is reset.
Alarm value (r2124, interpret decimal):
1: The position actual value (r2521) has exceeded the value range.
2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.
3: The maximum encoder value multiplied by the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.

Remedy: If required, reduce the traversing range or position resolution.
For alarm value = 3:
Reducing the position resolution and conversion factor:
- reduce the length unit (LU) per load revolution for rotary encoders (p2506).
- increase the fine resolution of absolute position actual values (p0419).

A07594 (F, N) Encoder 2: Value range for position actual value exceeded

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the "referenced" or "absolute encoder adjusted" status is reset.
Alarm value (r2124, interpret decimal):
1: The position actual value (r2521) has exceeded the value range.
2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.

3: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.

Remedy: If required, reduce the traversing range or position resolution.

For alarm value = 3:

Reducing the position resolution and conversion factor:

- reduce the length unit (LU) per load revolution for rotary encoders (p2506).
- increase the fine resolution of absolute position actual values (p0419).

A07596 (F) Encoder 1: Reference function interrupted

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: An activated reference function (reference mark search or measuring probe evaluation) was interrupted.

- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was de-activated (BI: p2508 and BI: p2509 = 0 signal).

Remedy:

- check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.

A07597 (F) Encoder 2: Reference function interrupted

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: An activated reference function (reference mark search or measuring probe evaluation) was interrupted.

- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was de-activated (BI: p2508 and BI: p2509 = 0 signal).

Remedy:

- check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.

F07599 (A) Encoder 1: Adjustment not possible

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range (-2147483648 ... 2147483647) for displaying the position actual value.

Remedy: If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.

For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:

1st motor encoder:

p2506 * p2505 / p2504

p2506 * p2505 * p0421 / p2504 for multiturn encoders

2nd direct encoder:

p2506

p2506 * p0421 for multiturn encoders

F07600 (A) Encoder 2: Adjustment not possible

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range (-2147483648 ... 2147483647) for displaying the position actual value.

Remedy: If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.

For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:

1st motor encoder:

p2506 * p2505 / p2504

p2506 * p2505 * p0421 / p2504 for multiturn encoders

2nd direct encoder:

p2506

p2506 * p0421 for multiturn encoders

F07754 Drive: Incorrect shutoff valve configuration

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An incorrect shutoff valve configuration was detected.

Fault value (r0949, interpret decimal):

100:

Enable Safety Integrated (p9601/p9801), but p0218.0 = 0 (shutoff valve not available).

101:

The manipulated variable inhibit time is set less than the wait time to evaluate the feedback signal contacts when switching on the shutoff valve (p0230 < p9625[0]/p9825[0]).

102:

The manipulated variable inhibit time is set less than the wait time to evaluate the feedback signal contacts when switching off the shutoff valve (p0230 < p9625[1]/p9825[1]).

Remedy: For fault value = 100:

Check the enable of Safety Integrated and the shutoff valve (p9601/p9801, p0218.0).

For fault value = 101:

Set the manipulated variable inhibit time higher than the wait time to evaluate the feedback signal contacts when switching on the shutoff valve (p0230 > p9625[0]/p9825[0]).

For fault value = 102:

Set the manipulated variable inhibit time higher than the wait time to evaluate the feedback signal contacts when switching off the shutoff valve (p0230 > p9625[1]/p9825[1]).

See also: p0230 (Drive filter type motor side)

F07800 Drive: No power unit present

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The power unit parameters cannot be read or no parameters are stored in the power unit.

Note:

This fault also occurs if an incorrect topology was selected in the commissioning software and this parameterization is then downloaded to the Control Unit.

See also: r0200 (Power unit code number actual)

Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.

- check the power unit and replace if necessary.
- check the Control Unit, and if required replace it.
- after correcting the topology, the parameters must be again downloaded using the commissioning software.

F07801 Drive: Motor overcurrent

Message class: Motor overload (8)
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: The permissible motor limit current was exceeded.
- effective current limit set too low.
- current controller not correctly set.
- U/f operation: Up ramp was set too short or the load is too high.
- U/f operation: Short-circuit in the motor cable or ground fault.
- U/f operation: Motor current does not match current of power unit.
- Switch to rotating motor without flying restart function (p1200).

Note:
Limit current = 2 x minimum (p0640, 4 x p0305 x p0306) >= 2 x p0305 x p0306

Remedy:
- check the current limits (p0640).
- vector control: Check the current controller (p1715, p1717).
- U/f control: Check the current limiting controller (p1340 ... p1346).
- increase the up ramp (p1120) or reduce the load.
- check the motor and motor cables for short-circuit and ground fault.
- check the motor for the star-delta configuration and rating plate parameterization.
- check the power unit and motor combination.
- Choose "flying restart" function (p1200) if switched to rotating motor.

F07802 Drive: Infeed or power unit not ready

Message class: Infeed faulted (13)
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: After an internal switch-on command, the infeed or drive does not signal ready.
- monitoring time is too short.
- DC link voltage is not present.
- associated infeed or drive of the signaling component is defective.
- supply voltage incorrectly set.

Remedy:
- increase the monitoring time (p0857).
- ensure that there is a DC link voltage. Check the DC link busbar. Enable the infeed.
- replace the associated infeed or drive of the signaling component.
- check the line supply voltage setting (p0210).

See also: p0857 (Power unit monitoring time)

A07805 (N) Drive: Power unit overload I2t

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: Alarm threshold for I2t overload (p0294) of the power unit exceeded.
The response parameterized in p0290 becomes active.
See also: p0290 (Power unit overload response)

Remedy:
- reduce the continuous load.
- adapt the load duty cycle.
- check the assignment of the motor and power unit rated currents.

F07806 Drive: Regenerative power limit exceeded (F3E)

Message class: Power electronics faulted (5)
Reaction: OFF2 (IASC/DCBRK)
Acknowledge: IMMEDIATELY
Cause: For blocksize power units, types PM250 and PM260, the regenerative rated power r0206[2] was exceeded for more than 10 s.
See also: r0206 (Rated power unit power), p1531 (Power limit regenerative)

Remedy: - increase the down ramp.
- reduce the driving load.
- use a power unit with a higher regenerative feedback capability.
- for vector control, the regenerative power limit in p1531 can be reduced so that the fault is no longer triggered.

F07807 Drive: Short-circuit/ground fault detected

Message class: Ground fault / inter-phase short-circuit detected (7)
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: A phase-phase short-circuit or ground fault was detected at the motor-side output terminals of the converter.
Fault value (r0949, interpret decimal):
1: Short-circuit, phase UV.
2: Short-circuit, phase UW.
3: Short-circuit, phase VW.
4: Ground fault with overcurrent.
1yxxx: Ground fault with current in phase U detected (y = pulse number, xxxx = component of the current in phase V in per mille).
2yxxx: Ground fault with current in phase V detected (y = pulse number, xxxx = component of the current in phase U in per mille).
Note:
Also when interchanging the line and motor cables is identified as a motor-side short circuit.
The ground fault test only functions when the motor is stationary.
Connecting to a motor that is either not de-energized or partially de-energized is possibly detected as ground fault.
Remedy: - check the motor-side converter connection for a phase-phase short-circuit.
- rule-out interchanged line and motor cables.
- check for a ground fault.
For a ground fault the following applies:
- do not enable the pulses when connecting to a rotating motor without the "Flying restart" function activated (p1200).
- increase the de-energization time (p0347).
- increase pulse suppression delay time (p1228) to ensure standstill.
- if required, de-activate the monitoring (p1901).

F07810 Drive: Power unit EEPROM without rated data

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: No rated data are stored in the power unit EEPROM.
See also: p0205 (Power unit application), r0206 (Rated power unit power), r0207 (Rated power unit current), r0208 (Rated power unit line supply voltage), r0209 (Power unit maximum current)
Remedy: Replace the power unit or inform Siemens Customer Service.

A07850 (F) External alarm 1

Message class: External measured value / signal state outside the permissible range (16)
Reaction: NONE
Acknowledge: NONE
Cause: The condition for "External alarm 1" is satisfied.
Note:
The "External alarm 1" is initiated by a 1/0 edge via binector input p2112.
See also: p2112 (External alarm 1)
Remedy: Eliminate the causes of this alarm.

A07851 (F) External alarm 2

Message class: External measured value / signal state outside the permissible range (16)
Reaction: NONE
Acknowledge: NONE
Cause: The condition for "External alarm 2" is satisfied.
Note:
The "External alarm 2" is initiated by a 1/0 edge via binector input p2116.
See also: p2116 (External alarm 2)
Remedy: Eliminate the causes of this alarm.

A07852 (F) External alarm 3

Message class: External measured value / signal state outside the permissible range (16)
Reaction: NONE
Acknowledge: NONE
Cause: The condition for "External alarm 3" is satisfied.
Note:
The "External alarm 3" is initiated by a 1/0 edge via binector input p2117.
See also: p2117 (External alarm 3)
Remedy: Eliminate the causes of this alarm.

F07860 (A) External fault 1

Message class: External measured value / signal state outside the permissible range (16)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The condition for "External fault 1" is satisfied.
Note:
The "External fault 1" is initiated by a 1/0 edge via binector input p2106.
See also: p2106 (External fault 1)
Remedy: - eliminate the causes of this fault.
- acknowledge fault.

F07861 (A) External fault 2

Message class: External measured value / signal state outside the permissible range (16)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The condition for "External fault 2" is satisfied.
Note:
The "External fault 2" is initiated by a 1/0 edge via binector input p2107.
See also: p2107 (External fault 2)
Remedy: - eliminate the causes of this fault.
- acknowledge fault.

F07862 (A) External fault 3

Message class: External measured value / signal state outside the permissible range (16)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The condition for "External fault 3" is satisfied.
Note:
The "External fault 3" is initiated by a 1/0 edge via the following parameters.
- AND logic operation, binector input p2108, p3111, p3112.
- switch-on delay p3110.
See also: p2108 (External fault 3), p3110 (External fault 3 switch-on delay), p3111 (External fault 3 enable), p3112 (External fault 3 enable negated)
Remedy: - eliminate the causes of this fault.
- acknowledge fault.

A07891 Drive: Load monitoring pump/fan blocked

Message class: Motor overload (8)
Reaction: NONE
Acknowledge: NONE
Cause: The load monitoring is configured for a pump or fan (p2193 = 4, 5).
The monitoring function detects when the pump/fan is blocked.
It is possible that the blocking torque threshold (p2168) is set too low (e.g. heavy duty starting).
See also: p2181 (Load monitoring response), p2193 (Load monitoring configuration)
Remedy: - check whether the pump/fan is blocked, and if blocked, then resolve the problem.
- check that the fan can freely move, and if necessary, resolve the problem.
- adapt the parameterization corresponding to the load (p2165, p2168)..

A07892 Drive: Load monitoring pump/fan no load condition

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The load monitoring is configured for a pump or fan (p2193 = 4, 5).
The monitoring function detects when the pump/fan is operating under no load conditions.
The pump is running in the dry state (no medium to be pumped) – or the fan has a broken belt.
It is possible that the detection torque threshold is too low (p2191).
See also: p2181 (Load monitoring response), p2193 (Load monitoring configuration)
Remedy: - for a pump, check the medium being pumped, and if required, provide the medium.
- for a fan, check the belt, and if required, replace.
- if necessary, increase the detection torque threshold (p2191).

A07893 Drive: Load monitoring pump leakage

Message class: Application/technological function faulted (17)
Reaction: NONE
Acknowledge: NONE
Cause: The load monitoring is configured for a pump (p2193 = 4).
The monitoring function detects a leak in the pump circuit.
In this case, the pump requires a torque that is lower than in normal operation to pump the reduced quantity.
See also: p2181, p2182, p2183, p2184, p2186, p2188, p2190, p2193
Remedy: - remove the leak in the pump circuit.
- for a nuisance trip, reduce the torque thresholds of the leakage characteristic (p2186, p2188, p2190).

F07894 Drive: Load monitoring pump/fan blocked

Message class: Motor overload (8)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The load monitoring is configured for a pump or fan (p2193 = 4, 5).
The monitoring function detects when the pump/fan is blocked.
It is possible that the blocking torque threshold (p2168) is set too low (e.g. heavy duty starting).
See also: p2181 (Load monitoring response), p2193 (Load monitoring configuration)
Remedy: - check whether the pump/fan is blocked, and if blocked, then resolve the problem.
- check that the fan can freely move, and if necessary, resolve the problem.
- adapt the parameterization corresponding to the load (p2165, p2168)..

F07895 Drive: Load monitoring pump/fan no load condition

Message class: Application/technological function faulted (17)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The load monitoring is configured for a pump or fan (p2193 = 4, 5).
The monitoring function detects when the pump/fan is operating under no load conditions.
The pump is running in the dry state (no medium to be pumped) – or the fan has a broken belt.
It is possible that the detection torque threshold is too low (p2191).
See also: p2181 (Load monitoring response), p2193 (Load monitoring configuration)
Remedy: - for a pump, check the medium being pumped, and if required, provide the medium.
- for a fan, check the belt, and if required, replace.
- if necessary, increase the detection torque threshold (p2191).

F07896 Drive: Load monitoring pump leakage

Message class: Application/technological function faulted (17)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The load monitoring is configured for a pump (p2193 = 4).
The monitoring function detects a leak in the pump circuit.
In this case, the pump requires a torque that is lower than in normal operation to pump the reduced quantity.
See also: p2181, p2182, p2183, p2184, p2186, p2188, p2190, p2193
Remedy: - remove the leak in the pump circuit.
- for a nuisance trip, reduce the torque thresholds of the leakage characteristic (p2186, p2188, p2190).

F07900 (N, A) Drive: Motor blocked

Message class: Application/technological function faulted (17)
Reaction: OFF2 (NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: Motor has been operating at the torque limit longer than the time specified in p2177 and below the speed threshold set in p2175.
This signal can also be triggered if the speed is oscillating and the speed controller output repeatedly goes to its limit.
It may also be the case that thermal monitoring of the power unit reduces the current limit (see p0290), thereby causing the motor to decelerate.
See also: p2175 (Motor blocked speed threshold), p2177 (Motor blocked delay time)
Remedy: - check that the motor can freely move.
- check the effective torque limit (r1538, r1539).
- check the parameter, message "Motor blocked" and if required, correct (p2175, p2177).
- check the direction of rotation enable signals for a flying restart of the motor (p1110, p1111).
- for U/f control: check the current limits and acceleration times (p0640, p1120).

F07901 Drive: Motor overspeed

Message class: Application/technological function faulted (17)
Reaction: OFF2 (IASC/DCBRK)
Acknowledge: IMMEDIATELY
Cause: The maximum permissible speed was either positively or negatively exceeded.
The maximum permissible positive speed is formed as follows: Minimum (p1082, CI: p1085) + p2162
The maximum permissible negative speed is formed as follows: Maximum (-p1082, CI: 1088) - p2162
Remedy: The following applies for a positive direction of rotation:
- check r1084 and if required, correct p1082, CI:p1085 and p2162.
The following applies for a negative direction of rotation:
- check r1087 and if required, correct p1082, CI:p1088 and p2162.
Activate pre-control of the speed limiting controller (p1401.7 = 1).
Increase the hysteresis for the overspeed signal p2162. This upper limit is dependent upon the maximum motor speed p0322 and the maximum speed p1082 of the setpoint channel.

F07902 (N, A) Drive: Motor stalled

Message class: Application/technological function faulted (17)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: For a vector drive the system has identified that the motor has stall for a time longer than is set in p2178.
Fault value (r0949, interpret decimal):
1: Stall detection using r1408.11 (p1744, p0492) vector control with encoder.
2: Stall detection using r1408.12 (p1745) or (r0084 ... r0083).
See also: p1744 (Motor model speed threshold stall detection), p2178 (Motor stalled delay time)

Remedy: Steps should always be taken to ensure that both motor data identification and the rotating measurement were carried out (see p1900, r3925).
For closed-loop speed and torque control with speed encoder, the following applies:
- check the speed signal (interrupted cable, polarity, pulse number, broken encoder shaft).
- check the speed encoder, if another speed encoder was selected using the data set changeover. This must be connected to the same motor that is controlled for the data set changeover.
If there is no fault, then the fault tolerance (p1744 and p0492) can be increased.
For closed-loop speed and torque control without speed encoder, the following applies:
- check whether the drive stalls solely due to the load in controlled mode or when the speed setpoint is still zero. If yes, then increase the current setpoint using p1610.
- if the motor excitation time (p0346) was significantly reduced and the drive stalls when it is switched on and run immediately, p0346 should be increased again.
If there is no fault, then the fault tolerance can be increased (p1745).
- check the current limits (p0640, r0067, r0289). If the current limits are too low, then the drive cannot be magnetized.
- if the fault occurs with fault value 2 when the motor accelerates very quickly to the field weakening range, the deviation between the flux setpoint and flux actual value can be reduced and, in turn, the message prevented, by reducing p1596 or p1553.
The following generally apply for closed-loop and torque control:
- check whether a line phase failure is affecting power unit PM250D.
- check whether the motor cables are disconnected (see A07929).
If there is no fault, then the delay time can be increased (p2178).

A07903 Drive: Motor speed deviation

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The absolute value of the speed difference from the setpoint (p2151) and the speed actual value (r2169) exceeds the tolerance threshold (p2163) longer than tolerated (p2164, p2166).
The alarm is only enabled for p2149.0 = 1.
Possible causes:
- the load torque is greater than the torque setpoint.
- when accelerating, the torque/current/power limit is reached. If the limits are not sufficient, then it is possible that the drive has been dimensioned too small.
- for closed-loop torque control, the speed setpoint does not track the speed actual value.
- for active Vdc controller.
For U/f control, the overload condition is detected as the I_max controller is active.
See also: p2149 (Monitoring configuration)

Remedy: - increase p2163 and/or p2166.
- increase the torque/current/power limits.
- for closed-loop torque control: The speed setpoint should track the speed actual value.
- de-activate alarm with p2149.0 = 0.

A07910 (N) Drive: Motor overtemperature

Message class: Motor overload (8)

Reaction: NONE

Acknowledge: NONE

Cause: KTY84/PT1000 or no sensor:
The measured motor temperature or the temperature of the motor temperature model 2 has exceeded the alarm threshold (p0604). The response parameterized in p0610 becomes active.
PTC or bimetallic NC contact:
The response threshold of 1650 Ohm was exceeded or the NC contact opened.
Alarm value (r2124, interpret decimal):
11: No output current reduction.
12: Output current reduction active.
See also: p0604 (Mot_temp_mod 2/sensor alarm threshold), p0610 (Motor overtemperature response)

Remedy: - check the motor load.
- check the motor ambient temperature.
- check KTY84/PT1000.
- check overtemperatures of the motor temperature model 2 (p0626 ... p0628).
See also: p0612 (Mot_temp_mod activation), p0625 (Motor ambient temperature during commissioning), p0626 (Motor overtemperature, stator core), p0627 (Motor overtemperature, stator winding), p0628 (Motor overtemperature rotor)

A07920 Drive: Torque/speed too low

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: For p2193 = 1:
The torque deviates from the torque/speed envelope characteristic (too low).
For p2193 = 2:
The speed signal from the external encoder (refer to p3230) deviates from the speed (r2169) (too low).
See also: p2181 (Load monitoring response)

Remedy: - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

A07921 Drive: Torque/speed too high

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: For p2193 = 1:
The torque deviates from the torque/speed envelope characteristic (too high).
For p2193 = 2:
The speed signal from the external encoder (refer to p3230) deviates from the speed (r2169) (too high).

Remedy: - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

A07922 Drive: Torque/speed out of tolerance

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: For p2193 = 1:
The torque deviates from the torque/speed envelope characteristic.
For p2193 = 2:
The speed signal from the external encoder (refer to p3230) deviates from the speed (r2169).

Remedy: - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

F07923 Drive: Torque/speed too low

Message class: Application/technological function faulted (17)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For p2193 = 1:
The torque deviates from the torque/speed envelope characteristic (too low).
For p2193 = 2:
The speed signal from the external encoder (refer to p3230) deviates from the speed (r2169) (too low).
Remedy: - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

F07924 Drive: Torque/speed too high

Message class: Application/technological function faulted (17)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For p2193 = 1:
The torque deviates from the torque/speed envelope characteristic (too high).
For p2193 = 2:
The speed signal from the external encoder (refer to p3230) deviates from the speed (r2169) (too high).
Remedy: - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

F07925 Drive: Torque/speed out of tolerance

Message class: Application/technological function faulted (17)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For p2193 = 1:
The torque deviates from the torque/speed envelope characteristic.
For p2193 = 2:
The speed signal from the external encoder (refer to p3230) deviates from the speed (r2169).
Remedy: - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

A07926 Drive: Envelope curve parameter invalid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Invalid parameter values were entered for the envelope characteristic of the load monitoring.
The following rules apply for the speed thresholds:
p2182 < p2183 < p2184
The following rules apply for the torque thresholds:
p2185 > p2186
p2187 > p2188
p2189 > p2190
Load monitoring configuration and response must match.
It is not permissible that the individual load torque monitoring areas overlap.
Alarm value (r2124, interpret decimal):
Number of the parameter with the invalid value.
The load torque monitoring has not been activated as long as the alarm is active.
Remedy: - set the parameters for the load monitoring according to the applicable rules.
- if necessary, de-activate the load monitoring (p2181 = 0, p2193 = 0).

A07927 DC braking active

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The motor is braked with DC current. DC braking is active.

1)

A message with response DCBRK is active. The motor is braked with the braking current set in p1232 for the duration set in in p1233. If the standstill threshold p1226 is undershot, then braking is prematurely canceled.

2)

DC braking has been activated at binector input p1230 with the DC braking set (p1230 = 4). Braking current p1232 is injected until this binector input becomes inactive.

Remedy: Not necessary.

The alarm automatically disappears once DC braking has been executed.

A07929 (F) Drive: No motor detected

Message class: Application/technological function faulted (17)

Reaction: NONE

Acknowledge: NONE

Cause: The absolute current value is so small after enabling the inverter pulses that no motor is detected.

Note:

- for vector control and induction motor, fault F07902 follows this alarm.

See also: p2179 (Output load identification current limit)

Remedy: - check the motor feeder cables.

- reduce the threshold value (p2179), e.g. for synchronous motors.
- check the voltage boost of the U/f control (p1310).
- carry out a standstill measurement to set the stator resistance (p0350).

F07930 Drive: Brake control error

Message class: Application/technological function faulted (17)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The Control Unit has detected a brake control error.

- motor cable is not correctly connected.
- motor cable is not shielded correctly.
- defect in the Safe Brake Module, in the Power Module or in the Control Unit.

Fault value (r0949, interpret decimal):

10, 11:

Fault in "open holding brake" operation.

- no brake connected or wire breakage (check whether brake releases for p1278 = 1).
- ground fault in brake cable.

20:

Fault in "brake open" state.

- short-circuit in brake winding.

30, 31:

Fault in "close holding brake" operation.

- no brake connected or wire breakage (check whether brake releases for p1278 = 1).
- short-circuit in brake winding.

40:

Fault in "brake closed" state.

50:

Fault in the brake control circuit of the Control Unit or communication error between processor 1 and processor 2 (brake control diagnostics).

See also: p1278 (Brake control diagnostics evaluation)

Remedy: - check the motor holding brake connection.
- check the function of the motor holding brake.
- check the Safe Brake Module connection.
- check that the electrical cabinet design and cable routing are in compliance with EMC regulations (e.g. shield of the motor cable and brake conductors are connected with the shield connecting plate and the motor connectors are tightly screwed to the housing).
- replace the Safe Brake Module.
- replace Power Module.
- replace the Control Unit.
See also: p1215 (Motor holding brake configuration), p1278 (Brake control diagnostics evaluation)

F07935 (N) Drive: Incorrect motor holding brake configuration

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: An incorrect motor holding brake configuration was detected.
Fault value (r0949, interpret decimal):
0:
A motor holding brake was detected where the brake control has not been configured (p1215 = 0).
The brake control configuration was set to "motor holding brake the same as sequence control" (p1215 = 1) (only when commissioning for the first time).
1:
A motor holding brake was detected where the brake control has not been configured (p1215 = 0).
The brake control configuration was left at "No motor holding brake available" (p1215 = 0).
Remedy: For fault value = 0:
- no remedy required.
For fault value = 1:
- if required change the motor holding brake configuration (p1215 = 1, 2).
- if this fault value unexpectedly occurs, then the motor connections should be checked in order to rule out that they have been interchanged with other drive units.
See also: p1215 (Motor holding brake configuration)

F07936 Drive: load failure

Message class: Application/technological function faulted (17)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The load monitoring has detected a load failure.
Remedy: - check the sensor.
- if necessary, de-activate the load monitoring (p2193).
See also: p2193 (Load monitoring configuration), p3232 (Load monitoring failure detection)

F07950 (A) Motor parameter incorrect

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The motor parameters were incorrectly entered while commissioning (e.g. p0300 = 0, no motor)
Fault value (r0949, interpret decimal):
Parameter number involved.
See also: p0300, p0301, p0304, p0305, p0307, p0310, p0311, p0314, p0316, p0320, p0322, p0323
Remedy: Compare the motor data with the rating plate data and if required, correct.

A07960 Drive: Incorrect friction characteristic

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The friction characteristic is incorrect.

Alarm value (r2124, interpret decimal):

1538:

The friction torque is greater than the maximum from the upper effective torque limit (p1538) and zero. This is the reason that the output of the friction characteristic (r3841) is limited to this value.

1539:

The friction torque is less than the minimum from the lower effective torque limit (p1539) and zero. This is the reason that the output of the friction characteristic (r3841) is limited to this value.

3820 ... 3829:

Incorrect parameter number. The speeds entered in the parameters for the friction characteristic do not correspond to the following condition:

0.0 < p3820 < p3821 < ... < p3829 <= p0322 or p1082, if p0322 = 0

Therefore the output of the friction characteristic (r3841) is set to zero.

3830 ... 3839:

Incorrect parameter number. The torques entered in the parameters for the friction characteristic do not correspond to the following condition:

0 <= p3830, p3831 ... p3839 <= p0333

Therefore the output of the friction characteristic (r3841) is set to zero.

See also: r3840 (Friction characteristic status word)

Remedy: Fulfill the conditions for the friction characteristic.

For alarm value = 1538:

Check the upper effective torque limit (e.g. in the field weakening range).

For alarm value = 1539:

Check the lower effective torque limit (e.g. in the field weakening range).

For alarm value = 3820 ... 3839:

Fulfill the conditions to set the parameters of the friction characteristic.

If the motor data (e.g. the maximum speed p0322) are changed during commissioning (p0010 = 1, 3), then the technological limits and threshold values, dependent on this, must be re-calculated by selecting p0340= 5).

A07961 Drive: Friction characteristic record activated

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The automatic friction characteristic record is activated.

The friction characteristic is recorded at the next switch-on command.

When plotting the friction characteristic, it is not possible to save the parameters (p0971, p0977).

Remedy: Not necessary.

The alarm disappears automatically after the friction characteristic record has been successfully completed or the record is de-activated (p3845 = 0).

F07963 Drive: Friction characteristic record interrupted

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: The conditions to record the friction characteristic are not fulfilled.

Fault value (r0949, interpret decimal):

0046: Missing enable signals (r0046).

1082: The highest speed value to be approached (p3829) is greater than the maximum speed (p1082).

1084: The highest speed value to be approached (p3829) is greater than the maximum speed (r1084, p1083, p1085).

1087: The highest speed value to be approached (p3829) is greater than the maximum speed (r1087, p1086, p1088).

1110: Friction characteristic record, negative direction selected (p3845) and negative direction inhibited (p1110).

1111: Friction characteristic record, positive direction selected (p3845) and positive direction inhibited (p1111).

1198: Friction characteristic record selected (p3845 > 0) and negative (p1110) and positive directions (p1111) inhibited (r1198).

1300: The control mode (p1300) has not been set to closed-loop speed control.

1755: For encoderless closed-loop control (p1300 = 20), the lowest speed value to be approached (p3820) is less than or equal to the changeover speed, open-loop controlled operation (p1755).

1910: Motor data identification activated.

1960: Speed controller optimization activated.

3820 ... 3829: speed (p382x) cannot be approached.

3840: Friction characteristic incorrect.

3845: Friction characteristic record de-selected.

Remedy: Fulfill the conditions to record the friction characteristic.

For fault value = 0046:

- establish missing enable signals.

For fault value = 1082, 1084, 1087:

- Select the highest speed value to be approached (p3829) less than or equal to the maximum speed (p1082, r1084, r1087).
- Re-calculate the speed points along the friction characteristic (p0340 = 5).

For fault value = 1110:

- Select the friction characteristic record, positive direction (p3845).

For fault value = 1111:

- Select the friction characteristic record, negative direction (p3845).

For fault value = 1198:

- Enable the permitted direction (p1110, p1111, r1198).

For fault value = 1300:

- set the control mode (p1300) on the closed-loop speed control (p1300 = 20, 21).

For fault value = 1755:

- For encoderless closed-loop speed control (p1300 = 20) select the lowest speed value to be approached (p3820) greater than the changeover speed of open-loop controlled operation (p1755).
- Re-calculate the speed points along the friction characteristic (p0340 = 5).

For fault value = 1910:

- Exit the motor data identification routine (p1910).

For fault value = 1960:

- Exit the speed controller optimization routine (p1960).

For fault value 3820 ... 3829:

- check the load at speed p382x.
- check the speed signal (r0063) for oscillation at speed p382x. Check the settings of the speed controller if applicable.

For fault value = 3840:

- Make the friction characteristic error-free (p3820 ... p3829, p3830 ... p3839, p3840).

For fault value = 3845:

- Activate the friction characteristic record (p3845).

F07967 Drive: Incorrect pole position identification

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2 (NONE, OFF1)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the pole position identification routine.

Only for internal Siemens troubleshooting.

Remedy: Carry out a POWER ON.

F07968 Drive: Lq-Ld measurement incorrect

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A fault has occurred during the Lq-Ld measurement.
Fault value (r0949, interpret decimal):
10: Stage 1: The ratio between the measured current and zero current is too low.
12: Stage 1: The maximum current was exceeded.
15: Second harmonic too low.
16: Drive converter too small for the measuring technique.
17: Abort due to pulse inhibit.
Remedy: For fault value = 10:
Check whether the motor is correctly connected.
Replace the power unit involved.
De-activate technique (p1909).
For fault value = 12:
Check whether motor data have been correctly entered.
De-activate technique (p1909).
For fault value = 16:
De-activate technique (p1909).
For fault value = 17:
Repeat technique.

F07969 Drive: Incorrect pole position identification

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A fault has occurred during the pole position identification routine.
Fault value (r0949, interpret decimal):
1: Current controller limited
2: Motor shaft locked.
10: Stage 1: The ratio between the measured current and zero current is too low.
11: Stage 2: The ratio between the measured current and zero current is too low.
12: Stage 1: The maximum current was exceeded.
13: Stage 2: The maximum current was exceeded.
14: Current difference to determine the +d axis too low.
15: Second harmonic too low.
16: Drive converter too small for the measuring technique.
17: Abort due to pulse inhibit.
18: First harmonic too low.
20: Pole position identification requested with the motor shaft rotating and activated "flying restart" function.
Remedy: For fault value = 1:
Check whether the motor is correctly connected.
Check whether motor data have been correctly entered.
Replace the power unit involved.
For fault value = 2:
Bring the motor into a no-load condition.
For fault value = 10:
When selecting p1980 = 4: Increase the value for p0325.
When selecting p1980 = 1: Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the power unit involved.

For fault value = 11:
Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the power unit involved.
For fault value = 12:
When selecting p1980 = 4: Reduce the value for p0325.
When selecting p1980 = 1: Reduce the value for p0329.
Check whether motor data have been correctly entered.
For fault value = 13:
Reduce the value for p0329.
Check whether motor data have been correctly entered.
For fault value = 14:
Increase the value for p0329.
For fault value = 15:
Increase the value for p0325.
Motor not sufficiently anisotropic, change the technique (p1980 = 1, 10).
For fault value = 16:
Change the technique (p1980).
For fault value = 17:
Repeat technique.
For fault value = 18:
Increase the value for p0329 (if required, first set p0323).
Saturation not sufficient, change the technique (p1980 = 10).
For fault value = 20:
Before carrying out a pole position identification routine ensure that the motor shaft is absolutely stationary (zero speed).

A07975 (N) Drive: Travel to the zero mark - setpoint input expected

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The zero mark must be evaluated in order to adjust the encoder.
It is expected that a speed or torque setpoint is entered.
Remedy: Not necessary.
The alarm disappears once the zero mark has been detected.

A07980 Drive: Rotating measurement activated

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The rotating measurement (automatic speed controller optimization) is activated.
The rotating measurement is carried out at the next switch-on command.
Note:
During the rotating measurement it is not possible to save the parameters (p0971).
See also: p1960 (Rotating measurement selection)
Remedy: Not necessary.
The alarm disappears automatically after the speed controller optimization has been successfully completed or for the setting p1900 = 0.

A07981 Drive: Enable signals for the rotating measurement missing

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The rotating measurement cannot be started due to missing enable signals.
For p1959.13 = 1, the following applies:
- enable signals for the ramp-function generator missing (see p1140 ... p1142).
- enable signals for the speed controller integrator missing (see p1476, p1477).

Remedy: - acknowledge faults that are present.
- establish missing enable signals.
See also: r0002 (Drive operating display), r0046 (Missing enable sig)

F07982 Drive: Rotating measurement encoder test

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the encoder test.
Fault value (r0949, interpret decimal):
1: The speed did not reach a steady-state condition.
2: The speed setpoint was not able to be approached as the minimum limiting is active.
3: The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.
4: The speed setpoint was not able to be approached as the maximum limiting is active.
5: The encoder does not supply a signal.
6: Incorrect polarity.
7: Incorrect pulse number.
8: Noise in the encoder signal or speed controller unstable.

Remedy: For fault value = 1:
- check the motor parameters.
- carry out a motor data identification routine (p1900 = 2).
- possibly reduce the dynamic factor (p1967).
For fault value = 2:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).
For fault value = 3:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).
For fault value = 4:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).
For fault value = 5:
- check the encoder connection. If required, replace the encoder.
For fault value = 6:
- check the connection assignment of the encoder cable. Adapt the polarity (p0410).
For fault value = 7:
- adapt the pulse number (p0408).
For fault value = 8:
- check the encoder connection and encoder cable. It is possible that there is a problem associated with the ground connection.
- reduce the dynamic response of the speed controller (p1460, p1462 and p1470, p1472).
Note:
The encoder test can be switched out (disabled) using p1959.0.
See also: p1959 (Rotating measurement configuration)

F07983 Drive: Rotating measurement saturation characteristic

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred while determining the saturation characteristic.

Fault value (r0949, interpret decimal):

1: The speed did not reach a steady-state condition.

2: The rotor flux did not reach a steady-state condition.

3: The adaptation circuit did not reach a steady-state condition.

4: The adaptation circuit was not enabled.

5: Field weakening active.

6: The speed setpoint was not able to be approached as the minimum limiting is active.

7: The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.

8: The speed setpoint was not able to be approached as the maximum limiting is active.

9: Several values of the determined saturation characteristic are not plausible.

10: Saturation characteristic could not be sensibly determined because load torque too high.

Remedy: For fault value = 1:

- the total drive moment of inertia is far higher than that of the motor (p0341, p0342).

De-select rotating measurement (p1960), enter the moment of inertia p0342, re-calculate the speed controller p0340 = 4 and repeat the measurement.

For fault value = 1 ... 2:

- increase the measuring speed (p1961) and repeat the measurement.

For fault value = 1 ... 4:

- check the motor parameters (rating plate data). After the change: Calculate p0340 = 3.
- check the moment of inertia (p0341, p0342). After the change: Calculate p0340 = 3.
- carry out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

For fault value = 5:

- the speed setpoint (p1961) is too high. Reduce the speed.

For fault value = 6:

- adapt the speed setpoint (p1961) or minimum limiting (p1080).

For fault value = 7:

- adapt the speed setpoint (p1961) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

For fault value = 8:

- adapt the speed setpoint (p1961) or maximum limit (p1082, p1083 and p1086).

For fault value = 9, 10:

- the measurement was carried out at an operating point where the load torque is too high. Select a more suitable operating point, either by changing the speed setpoint (p1961) or by reducing the load torque. The load torque may not be varied while making measurements.

Note:

The saturation characteristic identification routine can be disabled using p1959.1.

See also: p1959 (Rotating measurement configuration)

F07984 Drive: Speed controller optimization, moment of inertia

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred while identifying the moment of inertia.

Fault value (r0949, interpret decimal):

1: The speed did not reach a steady-state condition.

2: The speed setpoint was not able to be approached as the minimum limiting is active.

3. The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.

4. The speed setpoint was not able to be approached as the maximum limiting is active.

5: It is not possible to increase the speed by 10% as the minimum limiting is active.

6: It is not possible to increase the speed by 10% as the suppression (skip) bandwidth is active.

7: It is not possible to increase the speed by 10% as the maximum limiting is active.
8: The torque difference after the speed setpoint step is too low in order to be able to still reliably identify the moment of inertia.
9: Too few data to be able to reliably identify the moment of inertia.
10: After the setpoint step, the speed either changed too little or in the incorrect direction.
11: The identified moment of inertia is not plausible. The measured moment of inertia is less than the 0.1x or greater than 500x the preset moment of inertia of the motor p0341.

Remedy: For fault value = 1:
- check the motor parameters (rating plate data). After the change: Calculate p0340 = 3.
- check the moment of inertia (p0341, p0342). After the change: Calculate p0340 = 3.
- carry out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

For fault value = 2, 5:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).

For fault value = 3, 6:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

For fault value = 4, 7:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).

For fault value = 8:
- the total drive moment of inertia is far higher than that of the motor (refer to p0341, p0342). De-select rotating measurement (p1960), enter the moment of inertia p0342, re-calculate the speed controller p0340 = 4 and repeat the measurement.

For fault value = 9:
- check the moment of inertia (p0341, p0342). After the change, re-calculate (p0340 = 3 or 4).

For fault value = 10:
- check the moment of inertia (p0341, p0342). After the change: Calculate p0340 = 3.

For fault value = 11:
- reduce the moment of inertia of the motor p0341 (e.g., factor of 0.2) or increase (e.g. factor of 5) and repeat the measurement.

Note:
The moment of inertia identification routine can be disabled using p1959.2.
See also: p1959 (Rotating measurement configuration)

F07985 Drive: Speed controller optimization (oscillation test)

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (NONE, OFF2)
Acknowledge: IMMEDIATELY
Cause: A fault has occurred during the vibration test.
Fault value (r0949, interpret decimal):
1: The speed did not reach a steady-state condition.
2: The speed setpoint was not able to be approached as the minimum limiting is active.
3: The speed setpoint was not able to be approached as the suppression (skip) bandwidth is active.
4: The speed setpoint was not able to be approached as the maximum limiting is active.
5: Torque limits too low for a torque step.
6: No suitable speed controller setting was found.

Remedy: For fault value = 1:
- check the motor parameters (rating plate data). After the change: Calculate p0340 = 3.
- check the moment of inertia (p0341, p0342). After the change: Calculate p0340 = 3.
- carry out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

For fault value = 2:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).

For fault value = 3:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

For fault value = 4:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).

For fault value = 5:
- increase the torque limits (e.g. p1520, p1521).
For fault value = 6:
- reduce the dynamic factor (p1967).
- disable the vibration test (p1959.4 = 0) and repeat the rotating measurement.
See also: p1959 (Rotating measurement configuration)

F07986 Drive: Rotating measurement ramp-function generator

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (NONE, OFF2)
Acknowledge: IMMEDIATELY
Cause: During the rotating measurements, problems with the ramp-function generator occurred.
Fault value (r0949, interpret decimal):
1: The positive and negative directions are inhibited.
Remedy: For fault value = 1:
Enable the direction (p1110 or p1111).

F07988 Drive: Rotating measurement, no configuration selected

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: When configuring the rotating measurement (p1959), no function was selected.
Remedy: Select at least one function for automatic optimization of the speed controller (p1959).
See also: p1959 (Rotating measurement configuration)

F07990 Drive: Incorrect motor data identification

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: A fault has occurred during the identification routine.
Fault value (r0949, interpret decimal):
1: Current limit value reached.
2: Identified stator resistance lies outside the expected range 0.1 ... 100% of Zn.
3: Identified rotor resistance lies outside the expected range 0.1 ... 100% of Zn.
4: Identified stator reactance lies outside the expected range 50 ... 500 % of Zn.
5: Identified magnetizing reactance lies outside the expected range 50 ... 500 % of Zn.
6: Identified rotor time constant lies outside the expected range 10 ms ... 5 s.
7: Identified total leakage reactance lies outside the expected range 4 ... 50 % of Zn.
8: Identified stator leakage reactance lies outside the expected range 2 ... 50% of Zn.
9: Identified rotor leakage reactance lies outside the expected range 2 ... 50% of Zn.
10: Motor has been incorrectly connected.
11: Motor shaft rotates.
12: Ground fault detected.
15: Pulse inhibit occurred during motor data identification.
20: Identified threshold voltage of the semiconductor devices lies outside the expected range 0 ... 10 V.
30: Current controller in voltage limiting.
40: At least one identification contains errors. The identified parameters are not saved to prevent inconsistencies.
Note:
Percentage values are referred to the rated motor impedance:
Zn = Vmot.nom / sqrt(3) / Imot,nom
Remedy: For fault value = 1 ... 40:
- check whether motor data have been correctly entered in p0300, p0304 ... p0311.
- is there an appropriate relationship between the motor power rating and that of the power unit? The ratio of the power unit to the rated motor current should not be less than 0.5 and not be greater than 4.
- check connection type (star-delta).

For fault value = 4, 7:
- check whether the inductance in p0233 is correctly set.
- check whether motor has been correctly connected (star-delta).
For fault value = 11 in addition:
- De-activate oscillation monitoring (p1909.7 = 1).
For fault value = 12:
- check the power cable connections.
- check the motor.
- check the CT.

A07991 (N) Drive: Motor data identification activated

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The motor data identification routine is activated.
The motor data identification routine is carried out at the next switch-on command.
If rotating measurement is selected (see p1900, p1960), it will not be possible to save the parameter assignment. Once motor data identification has been completed or de-activated, the option to save the parameter assignment will be made available again.
See also: p1910 (Motor data identification selection)
Remedy: Not necessary.
The alarm automatically disappears after the motor data identification routine has been successfully completed or for the setting p1900 = 0.

A07994 (F, N) Drive: motor data identification not performed

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The "vector control" mode has been selected and a motor data identification has still not been performed.
The alarm is initiated when changing the drive data set (see r0051) in the following cases:
- vector control is parameterized in the actual drive data set (p1300 >= 20).
and
- motor data identification has still not been performed in the actual drive data set (see r3925).
Note:
For SINAMICS G120, a check is made and an alarm is output also when exiting commissioning and when the system powers up.
Remedy: - Perform motor data identification (see p1900).
- if required, parameterize "U/f control" (p1300 < 20).
- switch over to a drive data set, in which the conditions do not apply.

F08000 (N, A) TB: +/-15 V power supply faulted

Message class: Supply voltage fault (undervoltage) (3)
Reaction: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: Terminal Board 30 detects an incorrect internal power supply voltage.
Fault value (r0949, interpret decimal):
0: Error when testing the monitoring circuit.
1: Fault in normal operation.
Remedy: - replace Terminal Board 30.
- replace Control Unit.

F08010 (N, A) TB: Analog-digital converter

Message class: Hardware/software error (1)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The analog/digital converter on Terminal Board 30 has not supplied any converted data.
Remedy: - check the power supply.
- replace Terminal Board 30.

F08501 (N, A) PROFINET: Setpoint timeout

Message class: Communication error to the higher-level control system (9)
Reaction: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Acknowledge: IMMEDIATELY
Cause: The reception of setpoints from PROFINET has been interrupted.
- bus connection interrupted.
- controller switched off.
- controller set into the STOP state.

Remedy: - Restore the bus connection and set the controller to RUN.
- if the error is repeated, check the update time set in the bus configuration (HW Config).

F08502 (A) PROFINET: Monitoring time sign-of-life expired

Message class: Communication error to the higher-level control system (9)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The monitoring time for the sign-of-life counter has expired.
The connection to the PROFINET interface was interrupted.
Remedy: - carry out a POWER ON (switch-off/switch-on).
- contact Technical Support.

A08511 (F) PROFINET: Receive configuration data invalid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The drive unit did not accept the receive configuration data.
Alarm value (r2124, interpret decimal):
Return value of the receive configuration data check.
2: Too many PZD data words for input or output. The number of possible PZD is specified by the number of indices in r2050/p2051.
3: Uneven number of bytes for input or output.
501: PROFIsafe parameter error (e.g. F_dest).
502: PROFIsafe telegram does not match.
Remedy: Check the receive configuration data.
For alarm value = 2:
- check the number of data words for output and input.
For alarm value = 501:
- check the set PROFIsafe address (p9610).
For alarm value = 502:
Check the enable of F-DI (p9501.30).

A08526 (F) PROFINET: No cyclic connection

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: There is no connection to a PROFINET controller.
Remedy: Establish the cyclic connection and activate the controller with cyclic operation.
Check the parameters "Name of Station" and "IP of Station" (r61000, r61001).

A08564 PN/COMM BOARD: syntax error in the configuration file

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: A syntax error has been detected in the ASCII configuration file for the Communication Board Ethernet. The saved configuration file has not been loaded.

Remedy: - correct the PROFINET interface configuration (p8920 and following) and activate (p8925 = 2).
- reinitialize the station (e.g. using the STARTER commissioning software)
Note:
The configuration is not applied until the next POWER ON!
See also: p8925 (PN interface configuration)

A08565 PROFINET: Consistency error affecting adjustable parameters

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: A consistency error was detected when activating the configuration (p8925) for the PROFINET interface. The currently set configuration has not been activated.
Alarm value (r2124, interpret decimal):
0: general consistency error
1: error in the IP configuration (IP address, subnet mask or standard gateway)
2: Error in the station names.
3: DHCP was not able to be activated, as a cyclic PROFINET connection already exists.
4: a cyclic PROFINET connection is not possible as DHCP is activated.
See also: p8920 (PN Name of Station), p8921 (PN IP address), p8922 (PN Def Gateway), p8923 (PN Subnet Mask)

Remedy: - check the required interface configuration (p8920 and following), correct if necessary, and activate (p8925).
or
- Reconfigure the station via the "Edit Ethernet node" screen form (e.g. with STARTER commissioning software).
See also: p8925 (PN interface configuration)

F08700 (A) CAN: Communications error

Message class: Communication error to the higher-level control system (9)

Reaction: OFF3 (NONE, OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A CAN communications error has occurred.
Fault value (r0949, interpret decimal):
1: The error counter for the send telegrams has exceeded the BUS OFF value 255. The bus disables the CAN controller.
- bus cable short circuit.
- incorrect baud rate.
- incorrect bit timing.
2: The master no longer interrogated the CAN node status longer than for its "life time". The "life time" is obtained from the "guard time" (p8604[0]) multiplied by the "life time factor" (p8604[1]).
- bus cable interrupted.
- bus cable not connected.
- incorrect baud rate.
- incorrect bit timing.
- master fault.
Note:
The fault response can be set as required using p8641.
See also: p8604 (CAN life guarding), p8641 (CAN Abort Connection Option Code)

Remedy: - check the bus cable
- check the baud rate (p8622).
- check the bit timing (p8623).
- check the master.
The CAN controller must be manually restarted with p8608 = 1 after the cause of the fault has been resolved!
See also: p8608 (CAN Clear Bus Off Error), p8622 (CAN bit rate), p8623 (CAN Bit Timing selection)

F08701 CAN: NMT state change

Message class: Communication error to the higher-level control system (9)
Reaction: OFF3
Acknowledge: IMMEDIATELY
Cause: A CANopen NMT state transition from "operational" to "pre-operational" or after "stopped".
Fault value (r0949, interpret decimal):
1: CANopen NMT state transition from "operational" to "pre-operational".
2: CANopen NMT state transition from "operational" to "stopped".
Note:
In the NMT state "pre-operational", process data cannot be transferred and in the NMT state "stopped", no process data and no service data can be transferred.
Remedy: Not necessary.
Acknowledge the fault and continue operation.

F08702 (A) CAN: RPDO Timeout

Message class: Communication error to the higher-level control system (9)
Reaction: OFF3 (NONE, OFF1, OFF2)
Acknowledge: IMMEDIATELY
Cause: The monitoring time of the CANopen RPDO telegram has expired because the bus connection was either interrupted or the CANopen Master was switched-off.
See also: p8699 (CAN: RPDO monitoring time)
Remedy: - check the bus cable
- check the master.
- if required, increase the monitoring time (p8699).

A08751 (N) CAN: Telegram loss

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The CAN controller has lost a receive message (telegram).
Remedy: Reduce the cycle times of the receive messages.

A08752 CAN: Error counter for error passive exceeded

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The error counter for the send or receive telegrams has exceeded the value 127.
Remedy: - check the bus cable
- set a higher baud rate (p8622).
- check the bit timing and if required optimize (p8623).
See also: p8622 (CAN bit rate), p8623 (CAN Bit Timing selection)

A08753 CAN: Message buffer overflow

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: A message buffer overflow.
Alarm value (r2124, interpret decimal):
1: Non-cyclic send buffer (SDO response buffer) overflow.
2: Non-cyclic receive buffer (SDO receive buffer) overflow.
3: Cyclic send buffer (PDO send buffer) overflow.
Remedy: - check the bus cable.
- set a higher baud rate (p8622).
- check the bit timing and if required optimize (p8623).
For alarm value = 2:
- reduce the cycle times of the SDO receive messages.
- SDO request from master only after SDO feedback for previous SDO request.
See also: p8622 (CAN bit rate), p8623 (CAN Bit Timing selection)

A08754 CAN: Incorrect communications mode

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: In the "operational" mode, an attempt was made to change parameters p8700 ... p8737.
Remedy: Change to the "pre-operational" or "stopped" mode.

A08755 CAN: Obj cannot be mapped

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The CANopen object is not provided for the Process Data Object (PDO) Mapping.
Remedy: Use a CANopen object intended for the PDO mapping or enter 0.
The following objects can be mapped in the Receive Process Data Object (RPDO) or Transmit Process Data Object (TPDO):
- RPDO: 6040 hex, 6060 hex, 60FF hex, 6071 hex; 5800 hex - 580F hex; 5820 hex - 5827 hex
- TPDO: 6041 hex, 6061 hex, 6063 hex, 6069 hex, 606B hex, 606C hex, 6074 hex; 5810 hex - 581F hex; 5830 hex - 5837 hex
Only sub-index 0 of the specified objects can be mapped.
Note:
As long as A08755 is present, the COB-ID cannot be set to valid.

A08756 CAN: Number of mapped bytes exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The number of bytes of the mapped objects exceeds the telegram size for net data. A max. of 8 bytes is permissible.
Remedy: Map fewer objects or objects with a smaller data type.
See also: p8710, p8711, p8712, p8713, p8714, p8715, p8716, p8717, p8730, p8731, p8732, p8733, p8734, p8735, p8736, p8737

A08757 CAN: Set COB-ID invalid

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: For online operation, the appropriate COB-ID must be set invalid before mapping.
Example:
Mapping for RPDO 1 should be changed (p8710[0]).
--> set p8700[0] = C00006E0 hex (invalid COB-ID)
--> set p8710[0] as required.
--> p8700[0] enter a valid COB-ID
Remedy: Set the COB-ID to invalid.

A08759 CAN: PDO COB-ID already available

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: An existing PDO COB-ID was allocated.
Remedy: Select another PDO COB-ID.

A08760 CAN: maximum size of the IF PZD exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The maximum size of the IF PZD was exceeded.
Alarm value (r2124, interpret decimal):
1: error for IF PZD receive.
2: error for IF PZD send.
Note:
IF: interface
Remedy: Map fewer process data in PDO.
Apply one of the following options to delete the alarm:
- POWER ON (switch-off/switch-on).
- carry out a warm restart (p0009 = 30, p0976 = 2).
- execute CANopen NMT command reset node.
- change CANopen NMT state.
- delete alarm buffer [0...7] (p2111 = 0).

A08800 PROFIenergy energy-saving mode active

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The PROFIenergy energy-saving mode is active
Alarm value (r2124, interpret decimal):
Mode ID of the active PROFIenergy energy-saving mode.
See also: r5600 (Pe energy-saving mode ID)
Remedy: The alarm is automatically withdrawn when the energy-saving mode is exited.
Note:
The energy-saving mode is exited after the following events:
- the PROFIenergy command end_pause is received from the higher-level control.
- the higher-level control has changed into the STOP operating state.
- the PROFINET connection to the higher-level control has been disconnected.

A13000 License not adequate

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause:
- for the drive unit, the options that require a license are being used but the licenses are not sufficient.
- an error occurred when checking the existing licenses.

Alarm value (r2124, interpret decimal):

0:

The existing license is not sufficient.

1:

An adequate license was not able to be determined as the memory card with the required licensing data was withdrawn in operation.

2:

An adequate license was not able to be determined as there is no licensing data available on the memory card.

3:

An adequate license was not able to be determined as there is a checksum error in the license key.

4:

An internal error occurred when checking the license.

Remedy:
For alarm value = 0:

Additional licenses are required and these must be activated (p9920, p9921).

For alarm value = 1:

With the system switched off, re-insert the memory card that matches the system.

For alarm value = 2:

Enter and activate the license key (p9920, p9921).

For alarm value = 3:

Compare the license key (p9920) entered with the license key on the certificate of license.

Re-enter the license key and activate (p9920, p9921).

For alarm value = 4:

- carry out a POWER ON.
- upgrade firmware to later version.
- contact Technical Support.

A13001 Error in license checksum

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: When checking the checksum of the license key, an error was detected.

Remedy: Compare the license key (p9920) entered with the license key on the certificate of license.

Re-enter the license key and activate (p9920, p9921).

F13009 Licensing OA application not licensed

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: At least one OA application which is under license does not have a license.

Note:

Refer to r4955 and p4955 for information about the installed OA applications.

Remedy:
- enter and activate the license key for OA applications under license (p9920, p9921).
- if necessary, de-activate unlicensed OA applications (p4956).

See also: p9920 (Licensing enter license key), p9921 (Licensing activate license key)

F13010 Licensing function module not licensed

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1
Acknowledge: IMMEDIATELY
Cause: At least one function module which is under license does not have a license.
Fault value (r0949, interpret hexadecimal):
Bit x = 1: The corresponding function module does not have a license.
Note:
Refer to p0108 or r0108 for the assignment between the bit number and function module.
Remedy: - enter and activate the license key for function modules under license (p9920, p9921).
- if necessary, de-activate unlicensed function modules (p0108, r0108).
See also: p9920 (Licensing enter license key), p9921 (Licensing activate license key)

F13100 Know-how protection: Copy protection error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1
Acknowledge: IMMEDIATELY
Cause: The know-how protection with copy protection for the memory card is active.
An error has occurred when checking the memory card.
Fault value (r0949, interpret decimal):
0: A memory card is not inserted.
1: An invalid memory card is inserted (not SIEMENS).
2: An invalid memory card is inserted.
3: The memory card is being used in another Control Unit.
12: An invalid memory card is inserted (OEM input incorrect, p7769).
13: The memory card is being used in another Control Unit (OEM input incorrect, p7759).
See also: p7765 (KHP configuration)
Remedy: For fault value = 0, 1:
- insert the correct memory card and carry out POWER ON.
For fault value = 2, 3, 12, 13:
- contact the responsible OEM.
- De-activate copy protection (p7765) and acknowledge the fault (p3981).
- De-activate know-how protection (p7766 ... p7768) and acknowledge the fault (p3981).
Note:
In general, the copy protection can only be changed when know-how protection is de-activated.
KHP: Know-How Protection
See also: p3981 (Faults acknowledge drive object), p7765 (KHP configuration)

F13101 Know-how protection: Copy protection cannot be activated

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: An error occurred when attempting to activate the copy protection for the memory card.
Fault value (r0949, interpret decimal):
0: A memory card is not inserted.
1: An invalid memory card is inserted (not SIEMENS).
Note:
KHP: Know-How Protection
Remedy: - insert a valid memory card.
- Try to activate copy protection again (p7765).
See also: p7765 (KHP configuration)

F13102 Know-how protection: Consistency error of the protected data

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: An error was identified when checking the consistency of the protected files. As a consequence, the project on the memory card cannot be run.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = object number, xxxx = fault cause
xxxx = 1:
A file has a checksum error.
xxxx = 2:
The files are not consistent with one another.
xxxx = 3:
The project files, which were loaded into the file system via load (download from the memory card), are inconsistent.
Note:
KHP: Know-How Protection

Remedy: - Replace the project on the memory card or replace project files for download from the memory card.
- Restore the factory setting and download again.

F30001 Power unit: Overcurrent

Message class: Power electronics faulted (5)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The power unit has detected an overcurrent condition.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: rated current of motor much greater than that of power unit.
- High discharge and post-charging current for line supply voltage interruptions.
- High post-charging currents for overload when motoring and DC link voltage dip.
- short-circuit currents at switch-on due to the missing line reactor.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.
- line phase interrupted.

Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.
Bit 3: Overcurrent in the DC link.
Note:
Fault value = 0 means that the phase with overcurrent is not recognized.

Remedy: - check the motor data - if required, carry out commissioning.
- check the motor circuit configuration (star/delta).
- U/f operation: Increase up ramp.
- U/f operation: Check assignment of rated currents of motor and power unit.
- check the line supply quality.
- reduce motor load.
- correct connection of line reactor.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.
- check the line supply phases.

F30002 Power unit: DC link voltage overvoltage

Message class: DC-link overvoltage (4)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The power unit has detected an overvoltage condition in the DC link.
- motor regenerates too much energy.
- line supply voltage too high.
- line phase interrupted.
- DC-link voltage control switched off.
- dynamic response of DC-link voltage controller excessive or insufficient.

Fault value (r0949, interpret decimal):
DC link voltage at the time of trip [0.1 V].

Remedy: -increase the ramp-down time (p1121).
- set the rounding times (p1130, p1136). This is particularly recommended in U/f operation to relieve the DC link voltage controller with rapid ramp-down times of the ramp-function generator.
- Activate the DC link voltage controller (p1240, p1280).
- adapt the dynamic response of the DC-link voltage controller (p1243, p1247, p1283, p1287).
- check the line supply and DC link voltage. set p0210 as low as possible (also see A07401, p1294 = 0).
- check and correct the phase assignment at the power unit.
- check the line supply phases.

See also: p0210 (Drive unit line supply voltage), p1240 (Vdc controller configuration (vector control))

F30003 Power unit: DC link voltage undervoltage

Message class: Infeed faulted (13)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The power unit has detected an undervoltage condition in the DC link.
- line supply failure
- line supply voltage below the permissible value.
- line phase interrupted.

Note:
The monitoring threshold for the DC link undervoltage is the minimum of the following values:
- for a calculation, refer to p0210.

Remedy: - check the line supply voltage
- check the line supply phases.

See also: p0210 (Drive unit line supply voltage)

F30004 Power unit: Overtemperature heat sink AC inverter

Message class: Power electronics faulted (5)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The temperature of the power unit heat sink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.

Fault value (r0949, interpret decimal):
Temperature [1 bit = 0.01 °C].

Remedy: - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05000 has been undershot.
See also: p1800 (Pulse frequency setpoint)

F30005 Power unit: Overload I2t

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The power unit was overloaded (r0036 = 100 %).
- the permissible rated power unit current was exceeded for an inadmissibly long time.
- the permissible load duty cycle was not maintained.
Fault value (r0949, interpret decimal):
I2t [100 % = 16384].
Remedy:
- reduce the continuous load.
- adapt the load duty cycle.
- check the motor and power unit rated currents.
- reduce the current limit (p0640).
- during operation with U/f characteristic: reduce the integral time of the current limiting controller (p1341).
See also: r0036 (Power unit overload I2t), r0206 (Rated power unit power), p0307 (Rated motor power)

F30011 Power unit: Line phase failure in main circuit

Message class: Network fault (2)
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: At the power unit, the DC link voltage ripple has exceeded the permissible limit value.
Possible causes:
- a line phase has failed.
- the 3 line phases are inadmissibly unsymmetrical.
- the capacitance of the DC link capacitor forms a resonance frequency with the line inductance and the reactor integrated in the power unit.
- the fuse of a phase of a main circuit has ruptured.
- a motor phase has failed.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy:
- check the main circuit fuses.
- check whether a single-phase load is distorting the line voltages.
- Detune the resonant frequency with the line inductance by using an upstream line reactor.
- Dampen the resonant frequency with the line inductance by switching over the DC link voltage compensation in the software (see p1810) – or increase the smoothing (see p1806). However, this can have a negative impact on the torque ripple at the motor output.
- check the motor feeder cables.

F30015 (N, A) Power unit: Phase failure motor cable

Message class: Application/technological function faulted (17)
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: A phase failure in the motor feeder cable was detected.
The signal can also be output in the following cases:
- the motor is correctly connected, but the drive has stalled in U/f control. In this case, a current of 0 A is possibly measured in one phase due to asymmetry of the currents.
- the motor is correctly connected, however the closed-speed control is instable and therefore an oscillating torque is generated.
Note:
Chassis power units do not feature phase failure monitoring.

Remedy: - check the motor feeder cables.
- increase the ramp-up or ramp-down time (p1120) if the drive has stalled in U/f control.
- check the speed controller settings.

A30016 (N) Power unit: Load supply switched out

Message class: Network fault (2)
Reaction: NONE
Acknowledge: NONE
Cause: The DC link voltage is too low.
Alarm value (r2124, interpret decimal):
DC link voltage at the time of trip [0.1 V].
Remedy: Under certain circumstances, the AC line supply is not switched on.

F30017 Power unit: Hardware current limit has responded too often

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The hardware current limitation in the relevant phase (see A30031, A30032, A30033) has responded too often. The number of times the limit has been exceeded depends on the design and type of power unit.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Fault value (r0949, interpret binary):
Bit 0: Phase U
Bit 1: Phase V
Bit 2: Phase W
Remedy: - check the motor data.
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

F30021 Power unit: Ground fault

Message class: Ground fault / inter-phase short-circuit detected (7)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The power has detected a ground fault.
Possible causes:
- ground fault in the power cables.
- ground fault at the motor.
- CT defective.
- when the brake closes, this causes the hardware DC current monitoring to respond.
- short-circuit at the braking resistor.

Fault value (r0949, interpret decimal):
0:
- the hardware DC current monitoring has responded.
- short-circuit at the braking resistor.

> 0:
Absolute value, summation current [32767 = 271 % rated current].

Remedy:
- check the power cable connections.
- check the motor.
- check the CT.
- check the cables and contacts of the brake connection (a wire is possibly broken).
- check the braking resistor.

See also: p0287 (Ground fault monitoring thresholds)

F30022 Power unit: Monitoring U_ce

Message class: Ground fault / inter-phase short-circuit detected (7)

Reaction: OFF2

Acknowledge: POWER ON

Cause: In the power unit, the monitoring of the collector-emitter voltage (U_ce) of the semiconductor has responded.
Possible causes:
- fiber-optic cable interrupted.
- power supply of the IGBT gating module missing.
- short-circuit at the power unit output.
- defective semiconductor in the power unit.

Fault value (r0949, interpret binary):
Bit 0: Short-circuit in phase U
Bit 1: Short circuit in phase V
Bit 2: Short-circuit in phase W
Bit 3: Light transmitter enable defective
Bit 4: U_ce group fault signal interrupted

See also: r0949 (Fault value)

Remedy:
- check the fiber-optic cable and if required, replace.
- check the power supply of the IGBT gating module (24 V).
- check the power cable connections.
- select the defective semiconductor and replace.

F30024 Power unit: Overtemperature thermal model

Message class: Power electronics faulted (5)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The temperature difference between the heat sink and chip has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.

See also: r0037 (Power unit temperatures)

Remedy:
- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.
- if DC braking is active: reduce braking current (p1232).

F30025 Power unit: Chip overtemperature

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The chip temperature of the semiconductor has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.

Fault value (r0949, interpret decimal):
Temperature difference between the heat sink and chip [0.01 °C].
Remedy:
- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05001 has been undershot.
See also: r0037 (Power unit temperatures)

F30027 Power unit: Precharging DC link time monitoring

Message class: Infeed faulted (13)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The power unit DC link was not able to be precharged within the expected time.
1) There is no line supply voltage connected.
2) The line contactor/line side switch has not been closed.
3) The line supply voltage is too low.
4) Line supply voltage incorrectly set (p0210).
5) The precharging resistors are overheated as there were too many precharging operations per time unit.
6) The precharging resistors are overheated as the DC link capacitance is too high.
7) The DC link has either a ground fault or a short-circuit.
8) Precharging circuit may be defective.

Fault value (r0949, interpret binary):
yyyyxxxx hex:
yyyy = power unit state
0: Fault status (wait for OFF and fault acknowledgment).
1: Restart inhibit (wait for OFF).
2: Overvoltage condition detected -> change into the fault state.
3: Undervoltage condition detected -> change into the fault state.
4: Wait for bridging contactor to open -> change into the fault state.
5: Wait for bridging contactor to open -> change into restart inhibit.
6: Commissioning.
7: Ready for precharging.
8: Precharging started, DC link voltage less than the minimum switch-on voltage.
9: Precharging, DC link voltage end of precharging still not detected.
10: Wait for the end of the de-bounce time of the main contactor after precharging has been completed.
11: Precharging completed, ready for pulse enable.
12: Reserved.
xxxx = Missing internal enable signals, power unit (inverted bit-coded, FFFF hex -> all internal enable signals available)
Bit 0: Power supply of the IGBT gating shut down.
Bit 1: Ground fault detected.

Bit 2: Peak current intervention.
Bit 3: I2t exceeded.
Bit 4. Thermal model overtemperature calculated.
Bit 5: (heat sink, gating module, power unit) overtemperature measured.
Bit 6: Reserved.
Bit 7: Overvoltage detected.
Bit 8: Power unit has completed precharging, ready for pulse enable.
Bit 9: Reserved.
Bit 10: Overcurrent detected.
Bit 11: Reserved.
Bit 12: Reserved.
Bit 13: Vce fault detected, transistor de-saturated due to overcurrent/short-circuit.
Bit 14: Undervoltage detected.
See also: p0210 (Drive unit line supply voltage)

Remedy: In general:
- check the line supply voltage at the input terminals.
- check the line supply voltage setting (p0210).
- wait until the precharging resistors have cooled down. For this purpose, preferably disconnect the infeed unit from the line supply.

For 5):
- carefully observe the permissible precharging frequency (refer to the appropriate Equipment Manual).

For 6):
- check the capacitance of the DC link and, if necessary, reduce it in accordance with the maximum permissible DC link capacitance (see relevant Equipment Manual).

For 7):
- check the DC link for a ground fault or short circuit.

See also: p0210 (Drive unit line supply voltage)

A30030 Power unit: Internal overtemperature alarm

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The temperature inside the drive converter has exceeded the permissible temperature limit.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.

Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy:
- possibly use an additional fan.
- check whether the ambient temperature is in the permissible range.

Notice:
This fault can only be acknowledged once the permissible temperature limit minus 5 K has been fallen below.

A30031 Power unit: Hardware current limiting in phase U

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: Hardware current limit for phase U responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Note:
Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.

Remedy: - check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star/delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

A30032 Power unit: Hardware current limiting in phase V

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: Hardware current limit for phase V responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Note:
Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.

Remedy: Check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star/delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

A30033 Power unit: Hardware current limiting in phase W

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: Hardware current limit for phase W responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Note:
Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.

Remedy: - check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star/delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

A30034 Power unit: Internal overtemperature

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The alarm threshold for internal overtemperature has been reached.
If the temperature inside the unit continues to increase, fault F30036 may be triggered.
- ambient temperature might be too high.
- insufficient cooling, fan failure.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - check the ambient temperature.
- check the fan for the inside of the unit.

F30036 Power unit: Internal overtemperature

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The temperature inside the drive converter has exceeded the permissible temperature limit.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged once the permissible temperature limit minus 5 K has been fallen below.

A30042 Power unit: Fan has reached the maximum operating hours

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: The maximum operating time of at least one fan will soon be reached, or has already been exceeded.
Alarm value (r2124, interpret binary):
Bit 0: heat sink fan will reach the maximum operating time in 500 hours.
Bit 1: heat sink fan has exceeded the maximum operating time.
Bit 8: internal device fan will reach the maximum operating time in 500 hours.
Bit 9: internal device fan has exceeded the maximum operating time.
Note:
The maximum operating time of the heat sink fan in the power unit is displayed in p0252.
The maximum operating time of the internal device fan in the power unit is internally specified and is fixed.
Remedy: For the fan involved, carry out the following:
- replace the fan.
- reset the operating hours counter (p0251, p0254).

F30051 Power unit: Motor holding brake short circuit detected

Message class: External measured value / signal state outside the permissible range (16)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A short-circuit at the motor holding brake terminals has been detected.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - check the motor holding brake for a short-circuit.
- check the connection and cable for the motor holding brake.

F30052	EEPROM data error
Message class:	Hardware/software error (1)
Reaction:	OFF2
Acknowledge:	POWER ON
Cause:	EEPROM data error of the power unit module. Fault value (r0949, interpret decimal): 0, 2, 3, 4: The EEPROM data read in from the power unit module is inconsistent. 1: EEPROM data is not compatible to the firmware of the Control Unit.
Remedy:	Replace power unit module.

A30054 (F, N)	Power unit: Undervoltage when opening the brake
Message class:	Supply voltage fault (undervoltage) (3)
Reaction:	NONE
Acknowledge:	NONE
Cause:	When the brake is being opened, it is detected that the power supply voltage is less than 21.4 V Alarm value (r2124, interpret decimal): Supply voltage fault [0.1 V]. Example: Alarm value = 195 --> voltage = 19.5 V
Remedy:	Check the 24 V voltage for stability and value.

A30057	Power unit: Line asymmetry
Message class:	Network fault (2)
Reaction:	NONE
Acknowledge:	NONE
Cause:	Frequencies have been detected on the DC link voltage that would suggest line asymmetry or failure of a line phase. It is also possible that a motor phase has failed. Fault F30011 is output if the alarm is present and at the latest after 5 minutes. The precise duration depends on the power unit type and the particular frequencies. For booksize and chassis power units, the duration also depends on how long the alarm has been active. Alarm value (r2124, interpret decimal): Only for internal Siemens troubleshooting.
Remedy:	- check the line phase connection. - check the motor feeder cable connections. If there is no phase failure of the line or motor, then line asymmetry is involved. - reduce the power in order to avoid fault F30011.

A30065 (F, N)	Voltage measured values not plausible
Message class:	Power electronics faulted (5)
Reaction:	NONE
Acknowledge:	NONE
Cause:	The voltage measurement is not supplying any plausible values Alarm value (r2124, interpret bitwise binary): Bit 1: Phase U. Bit 2: Phase V. Bit 3: Phase W.
Remedy:	- De-activate voltage measurement (p0247.0 = 0). - De-activate flying restart with voltage measurement (p0247.5 = 0) and de-activate fast flying restart (p1780.11 = 0).

F30071 No new actual values received from the Power Module

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: More than one actual value telegram from the power unit module has failed.
Remedy: Check the interface (adjustment and locking) to the power unit module.

F30072 Setpoints can no longer be transferred to the Power Module

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: More than one setpoint telegram was not able to be transferred to the power unit module.
Remedy: Check the interface (adjustment and locking) to the power unit module.

F30074 (A) Communication error between the Control Unit and Power Module

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Communications between the Control Unit (CU) and Power Module (PM) via the interface no longer possible. The CU may have been withdrawn or is incorrectly inserted.
Fault value (r0949, interpret hexadecimal):
0 hex:
- a Control Unit with external 24 V supply was withdrawn from the Power Module during operation.
- with the Power Module switched off, the external 24 V supply for the Control Unit was interrupted for some time.
1 hex:
The Control Unit was withdrawn from the Power Module during operation, although the encoderless safe motion monitoring functions are enabled. This is not supported. After re-inserting the Control Unit in operation, communications to the Power Module no longer possible.
20A hex:
The Control Unit was inserted on a Power Module, which has another code number.
20B hex:
The Control Unit was inserted on a Power Module, which although it has the same code number, has a different serial number. The Control Unit executes an automatic warm restart to accept the new calibration data.
Remedy: For fault value = 0 and 20A hex:
Insert the Control Unit on an appropriate Power Module and continue operation. If required, carry out a POWER ON of the Control Unit.
For fault value = 1 hex:
Carry out a POWER ON of the Control Unit.

F30075 Configuration of the power unit unsuccessful

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A communication error has occurred while configuring the power unit using the Control Unit. The cause is not clear.
Fault value (r0949, interpret decimal):
0:
The output filter initialization was unsuccessful.
1:
Activation/de-activation of the regenerative feedback functionality was unsuccessful.
Remedy: - acknowledge the fault and continue operation.
- if the fault reoccurs, carry out a POWER ON (switch-off/switch-on).
- if required, replace the power unit.

F30080 Power unit: Current increasing too quickly

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The power unit has detected an excessive rate of rise in the overvoltage range.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: rated current of motor much greater than that of power unit.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.

Remedy:
- check the motor data - if required, carry out commissioning.
- check the motor circuit configuration (star-delta)
- U/f operation: Increase up ramp.
- U/f operation: Check assignment of rated currents of motor and power unit.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

F30081 Power unit: Switching operations too frequent

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The power unit has executed too many switching operations for current limitation.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: rated current of motor much greater than that of power unit.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.

Remedy:
- check the motor data - if required, carry out commissioning.
- check the motor circuit configuration (star-delta)
- U/f operation: Increase up ramp.
- U/f operation: Check assignment of rated currents of motor and power unit.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

F30105 PU: Actual value sensing fault

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: At least one incorrect actual value channel was detected on the Power Stack Adapter (PSA).
The incorrect actual value channels are displayed in the following diagnostic parameters.
Remedy: Evaluate the diagnostic parameters.
If the actual value channel is incorrect, check the components and if required, replace.

A30502 Power unit: DC link overvoltage

Message class: DC-link overvoltage (4)
Reaction: NONE
Acknowledge: NONE
Cause: The power unit has detected overvoltage in the DC link on a pulse inhibit.
- device connection voltage too high.
- line reactor incorrectly dimensioned.
Alarm value (r0949, interpret decimal):
DC link voltage [1 bit = 100 mV].
See also: r0070 (Actual DC link voltage)
Remedy: - check the device supply voltage (p0210).
- check the dimensioning of the line reactor.
See also: p0210 (Drive unit line supply voltage)

F30600 SI P2: STOP A initiated

Message class: Safety monitoring channel has identified an error (10)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-integrated "Safety Integrated" function on processor 2 has detected an error and initiated a STOP A.
- forced checking procedure (test stop) of the safety switch-off signal path on processor 2 unsuccessful.
- subsequent response to fault F30611 (defect in a monitoring channel).
Fault value (r0949, interpret decimal):
0: Stop request from processor 1.
1005:
- Pulses suppressed although STO not selected and there is no internal STOP A present.
- For a Power Module with "STO via terminals at the Power Module" (STO_A/STO_B), these terminals are active (DIP switch to "ON"). However, the "STO via terminals at the Power Module" function has not been enabled (p9601.7 = p9801.7 = 0).
1010: Pulses enabled although STO is selected or an internal STOP A is present.
1011: Internal fault for the pulse enable in the Power Module.
1030: Feedback signal of the safety switch-off signal paths for the "STO via terminals at the Power Module" function different.
9999: Subsequent response to fault F30611.
Remedy: - select Safe Torque Off and de-select again.
- carry out a POWER ON (switch-off/switch-on) for all components.
- replace Power Module involved.
For fault value = 1005:
- de-activate terminals STO_A/STO_B on the Power Module (set both DIP-switches to "OFF") or enable the "STO via terminals at the Power Module" function.
For fault value = 1030:
- check the discrepancy time, and if required, increase the value (p9650/p9850).
- check the STO terminal at the Power Module (contact problems).
For fault value = 9999:
- carry out diagnostics for fault F30611.

Note:
PM: Power Module
STO: Safe Torque Off

F30611 (A) SI P2: Defect in a monitoring channel

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-integrated "Safety Integrated" function on processor 2 has detected a fault in the crosswise data comparison between the two monitoring channels and has initiated a STOP F.
As a consequence of this fault, fault F30600 (SI P2: STOP A initiated) is output.
Fault value (r0949, interpret decimal):
0: Stop request from the other monitoring channel.
1 ... 999:
Number of the cross-compared data that resulted in this fault. This number is also displayed in r9795.
2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.
3: SI F-DI changeover discrepancy time (p9650, p9850).
8: SI PROFIsafe address (p9610, p9810).
9: SI debounce time for STO (p9651, p9851).
1000: Watchdog timer has expired.
Within the time of approx. 5 x p9650, alternatively, the following was defined:
- the signal at F-DI continually changed with time intervals less than or equal to the discrepancy time (p9650/p9850).
- via PROFIsafe, STO (also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).
1001, 1002: Initialization error, change timer / check timer.
2000: Status of the STO selection for both monitoring channels different.
2001: Feedback signal of the safe pulse suppression for both monitoring channels different.
2002: Status of the delay timer SS1 for both monitoring channels different (status of the timer in p9650/p9850).
2003: Status of the STO terminal for processor 1 and processor 2 different.
6000 ... 6999:
Error in the PROFIsafe control.
For these fault values, the failsafe control signals (failsafe values) are transferred to the safety functions.
The significance of the individual message values is described in safety fault F01611.

Remedy: For fault values 1 ... 999 described in "Cause":
- check the cross data comparison that resulted in a STOP F.
- carry out a POWER ON (switch-off/switch-on).
For fault value = 1000:
- check the wiring of the F-DI (contact problems).
- PROFIsafe: Remove contact problems/faults at the PROFIBUS master/PROFINET controller.
- check the discrepancy time, and if required, increase the value (p9650/p9850).
For fault value = 1001, 1002:
- carry out a POWER ON (switch-off/switch-on).
For fault value = 2000, 2001, 2002, 2003:
- check the discrepancy time, and if required, increase the value (p9650/p9850).
- check the wiring of the F-DI (contact problems).
- check the causes of the STO selection in r9772. When the SI Motion functions are active (p9501 = 1), STO can also be selected using these functions.
For fault value = 6000 ... 6999:
Refer to the description of the message values in safety fault F01611.
For fault values that are described in "Cause":
- carry out a POWER ON (switch-off/switch-on).
- contact Technical Support.
- replace Control Unit.
Note:
F-DI: Failsafe Digital Input
STO: Safe Torque Off

N30620 (F, A) SI P2: Safe Torque Off active

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Torque Off" (STO) function has been selected on processor 2 using the input terminal and is active.
Note:
This message does not result in a safety stop response.
Remedy: Not necessary.
Note:
STO: Safe Torque Off

N30621 (F, A) SI P2: Safe Stop 1 active

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Stop 1" function (SS1) was selected on processor 2 and is active.
Note:
This message does not result in a safety stop response.
Remedy: Not necessary.
Note:
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

F30625 SI P2: Sign-of-life error in safety data

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-integrated "Safety Integrated" function on processor 2 has detected an error in the sign-of-life of the safety data and initiated a STOP A.
- there is a communication error between processor 1 and processor 2 or communication has failed.
- a time slice overflow of the safety software has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - select Safe Torque Off and de-select again.
- carry out a POWER ON (switch-off/switch-on).
- check whether additional faults are present and if required, perform diagnostics.
- check the electrical cabinet design and cable routing for EMC compliance

F30630 SI P2: Brake control error

Message class: Safety monitoring channel has identified an error (10)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The "Safety Integrated" function integrated in the drive on processor 2 (P2) has detected a brake control error and initiated a STOP A.
- motor cable is not shielded correctly.
- defect in the Safe Brake Module, in the Power Module or in the Control Unit.
Fault value (r0949, interpret decimal):
10:
Fault in "open holding brake" operation.
- parameter p1278 incorrectly set.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC de-activated)).
- ground fault in brake cable.

30:
Fault in "close holding brake" operation.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC de-activated)).
- short-circuit in brake winding.
40:
Fault in "brake closed" state.
60, 70:
Fault in the brake control circuit of processor 1 or communication error between processor 1 and processor 2 (brake control diagnostics).

Remedy:
- check parameter p1278 (for SBC, only p1278 = 0 is permissible).
- select Safe Torque Off and de-select again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check the Safe Brake Module connection.
- check that the electrical cabinet design and cable routing are in compliance with EMC regulations (e.g. shield of the motor cable and brake conductors are connected with the shield connecting plate and the motor connectors are tightly screwed to the housing).
- replace the Safe Brake Module.
- replace Power Module.
- replace the Control Unit.

Note:
SBC: Safe Brake Control
SI: Safety Integrated

F30649 SI P2: Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An internal error in the Safety Integrated software on processor 2 has occurred.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy:
- carry out a POWER ON (switch-off/switch-on).
- re-commission the "Safety Integrated" function and carry out a POWER ON.
- contact Technical Support.
- replace Control Unit.

F30650 SI P2: Acceptance test required

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-integrated "Safety Integrated" function on processor 2 requires an acceptance test.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
130: Safety parameters for processor 2 not available.
Note:
This fault value is always output when Safety Integrated is commissioned for the first time.
1000: Reference and actual checksum on processor 2 are not identical (booting).
- at least one checksum-checked piece of data is defective.
- safety parameters set offline and loaded into the Control Unit.
2000: Reference and actual checksum on processor 2 are not identical (commissioning mode).
- reference checksum incorrectly entered on processor 2 (p9899 not equal to r9898).
2003: Acceptance test is required as a safety parameter has been changed.

2010: Enable of safety-related brake control between the two monitoring channels differ (p9602 not equal to p9802).
9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.

Remedy: For fault value = 130:
- carry out safety commissioning routine.

For fault value = 1000:
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.
- Using STARTER, activate the safety parameters for the drive involved (change settings, copy parameters, activate settings).

For fault value = 2000:
- check the safety parameters on processor 2 and adapt the reference checksum (p9899).

For fault value = 2003:
- carry out an acceptance test and generate an acceptance report.

For fault value = 2010:
- check the enable the safety-related brake control on both monitoring channels (p9602 = p9802).

For fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.

See also: p9799 (SI setpoint checksum SI parameters (processor 1)), p9899 (SI setpoint checksum SI parameters (processor 2))

F30651 SI P2: Synchronization with Control Unit unsuccessful

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-integrated "Safety Integrated" function requires synchronization of the safety time slices on processor 1 and processor 2. This synchronization routine was unsuccessful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: Carry out a POWER ON (switch-off/switch-on).

F30655 SI P2: Align monitoring functions

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An error has occurred when aligning the Safety Integrated monitoring functions on processor 1 and processor 2. No common set of supported SI monitoring functions was able to be determined.
- there is a communication error between processor 1 and processor 2 or communication has failed.

Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance

F30656 SI P2: Parameter processor 2 parameter error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: When accessing the Safety Integrated parameters for the processor 2 in the non-volatile memory, an error has occurred.
Note:
This fault results in a STOP A that can be acknowledged.

Fault value (r0949, interpret decimal):
129: Safety parameters for processor 2 corrupted.
131: Internal software error on processor 1.
255: Internal software error on processor 2.

Remedy: - re-commission the safety functions.
- replace the memory card or Control Unit.
For fault value = 129:
- activate the safety commissioning mode (p0010 = 95).
- start the copy function for SI parameters (p9700 = D0 hex).
- acknowledge data change (p9701 = DC hex).
- exit the safety commissioning mode (p0010 = 0).
- save all parameters (p0971 = 1 or "copy RAM to ROM").
- carry out a POWER ON (switch-off/switch-on) for the Control Unit.

F30659 SI P2: Write request for parameter rejected

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The write request for one or several Safety Integrated parameters on processor 2 was rejected.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
10: An attempt was made to enable the STO function although this cannot be supported.
15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.
16: An attempt was made to enable the PROFIsafe communications although this cannot be supported.
18: An attempt was made to enable the PROFIsafe function for Basic Functions although this cannot be supported.
20: An attempt was made to simultaneously enable both the drive-integrated motion monitoring functions via integrated F-DI and STO via terminals, even though these cannot be supported at the same time.
28: An attempt was made to enable the "STO via terminals at the Power Module" function although this cannot be supported.
See also: r9771 (SI common functions (processor 1)), r9871 (SI common functions (processor 2))

Remedy: For fault value = 10, 15, 16, 18:
- check whether there are faults in the safety function alignment (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Control Unit that supports the required function.
For fault value = 28:
- use the power unit with the feature "STO via terminals at the Power Module".
Note:
F-DI: Failsafe Digital Input
STO: Safe Torque Off

F30662 Error in internal communications

Message class: Hardware/software error (1)

Reaction: OFF2

Acknowledge: POWER ON

Cause: A module-internal communication error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.

F30664 Error while booting

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An error has occurred during booting.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.

F30665 SI P2: System is defective

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A system defect was detected before the last boot or in the actual one. The system might have been rebooted (reset).
Fault value (r0949, interpret hexadecimal):
40 hex:
- For a Power Module with "STO via terminals at the Power Module" (STO_A/STO_B), these terminals are active (DIP switch to "ON"). However, the "STO via terminals at the Power Module" function has not been enabled (p9601.7 = p9801.7 = 0).
200000 hex, 4000yy hex:
- fault in the actual booting/operation.
Additional values:
- defect before the last time that the system booted.
Remedy: - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.
For fault value = 40 hex:
- de-activate terminals STO_A/STO_B on the Power Module (set both DIP-switches to "OFF") or enable the "STO via terminals at the Power Module" function.
For fault value = 4000yy hex:
- ensure that the Control Unit is connected to the Power Module.
- deselect the "STO via terminals at the Power Module" function.

A30666 (F) SI Motion P2: Steady-state (static) 1 signal at the F-DI for safe acknowledgment

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: A logical 1 signal is present at the F-DI configured in p10106 for more than 10 seconds.
If, at the F-DI no acknowledgment was performed for safe acknowledgment, then a steady-state logical and 0 signal must be present. This avoids unintentional safety-relevant acknowledgment (or the "Internal Event Acknowledge" signal) if a wire breaks or one of the two digital inputs bounces.
Remedy: Set the fail-safe digital input (F-DI) to a logical 0 signal (p10106).
Note:
F-DI: Failsafe Digital Input

F30680 SI Motion P2: Checksum error safety monitoring functions

Message class: Safety monitoring channel has identified an error (10)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual checksum calculated by processor 2 and entered in r9398 over the safety-relevant parameters does not match the reference checksum saved in p9399 at the last machine acceptance.
Safety-relevant parameters have been changed or a fault is present.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
0: Checksum error for SI parameters for motion monitoring.
1: Checksum error for SI parameters for component assignment.

Remedy: - check the safety-relevant parameters and if required, correct.
- set the reference checksum to the actual checksum.
- execute the function "Copy RAM to ROM".
- perform a POWER ON if safety parameters requiring a POWER ON have been modified.
- carry out an acceptance test.

F30681 SI Motion P1: Incorrect parameter value

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameter cannot be parameterized with this value.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
yyyy = 0:
No information available.

xxxx = 9301:
It is not permissible to enable the function "n < nx hysteresis and filtering" (p9301.16) in conjunction with the function "Extended functions without selection" (p9801.5).
xxxx = 9385:
For Safety without encoder and synchronous motor, p9385 must be set to 4.

Remedy: Correct the parameter value.
Note:
For different values in the two monitoring channels, start the copy function for SI parameters on the drive (p9700 = 57 hex).

F30682 SI Motion P2: Monitoring function not supported

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The monitoring function enabled in p9301, p9501, p9601 or p9801 is not supported in this firmware version.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
1: Monitoring function SLP not supported (p9301.1).
2: Monitoring function SCA not supported (p9301.7 and p9301.8 ... 15).
3: Monitoring function SLS override not supported (p9301.5).
4: Monitoring function external ESR activation not supported (p9301.4).
5: Monitoring function F-DI in PROFIsafe not supported (p9301.30).
6: Enable actual value synchronization not supported (p9301.3).

9: Monitoring function not supported by the firmware or enable bit not used.
24: Monitoring function SDI not supported.

Remedy: Deselect the monitoring function involved.
Note:
ESR: Extended Stop and Retract
F-DI: Failsafe Digital Input
SCA: Safe Cam
SLP: Safely Limited Position
SLS: Safely Limited Speed
SDI: Safe Direction (safe motion direction)
See also: p9301, p9501, p9601, p9801, r9871

F30683 SI Motion P2: SLS enable missing

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The safety-relevant function "SLS" is not enabled in p9301 although other safety-relevant monitoring functions are enabled.
Note:
This message does not result in a safety stop response.
Remedy: Enable the function "SLS" (p9301.0) and carry out a POWER ON.
Note:
Save the changes before POWER ON (copy from RAM to ROM).
SLS: Safely Limited Speed
See also: p9301 (SI Motion enable safety functions (processor 2))

F30692 SI Motion P2: Parameter value not permitted for encoderless

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: For encoderless motion monitoring functions, the parameter cannot be parameterized with this value.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Parameter number with the incorrect value.
See also: p9301 (SI Motion enable safety functions (processor 2))
Remedy: Correct the parameter specified in the fault value.
See also: p9301 (SI Motion enable safety functions (processor 2)), p9501 (SI Motion enable safety functions (processor 1))

A30693 (F) SI P2: Safety parameter settings changed, POWER ON required

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Safety parameters have been changed; these will only take effect following a POWER ON.
Notice:
All changed parameters of the safety motion monitoring functions will only take effect following a POWER ON.
Alarm value (r2124, interpret decimal):
Parameter number of the safety parameter which has changed, necessitating a POWER ON.
Remedy: - execute the function "Copy RAM to ROM".
- carry out a POWER ON (switch-off/switch-on).

C30700 SI Motion P2: STOP A initiated

Message class: Safety monitoring channel has identified an error (10)

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP A (pulses are suppressed via the safety switch-off signal path of processor 1).
Possible causes:
- stop request from processor 1.
- Pulses not suppressed after test stop selection.
- subsequent response to the message C30706 "SI Motion P2: SAM/SBR limit exceeded".
- subsequent response to the message C30714 "SI Motion P2: Safely Limited Speed exceeded".
- subsequent response to the message C30701 "SI Motion P2: STOP B initiated".

Remedy:
- remove the cause of the fault on the monitoring channel of processor 1.
- check the switch-off signal path of processor 2.
- carry out a diagnostics routine for message C30706.
- carry out a diagnostics routine for message C30714.
- carry out a diagnostics routine for message C30701.
- replace Power Module.
- replace Control Unit.

This message can be acknowledged using "Acknowledge internal event".
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe brake ramp monitoring)

C30701 SI Motion P2: STOP B initiated

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE (OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP B (braking along the OFF3 deceleration ramp).
As a result of this fault, after the speed threshold parameterized in p9360 is fallen below, message C30700 "STOP A initiated" is output.
Possible causes:
- stop request from processor 1.
- subsequent response to the message C30714 "SI Motion P2: Safely Limited Speed exceeded".
- subsequent response to the message C30711 "SI Motion P2: Defect in a monitoring channel".
- subsequent response to the message C30707 "SI Motion P2: tolerance for safe operating stop exceeded".

Remedy:
- remove the cause of the fault on the monitoring channel of processor 1.
- carry out a diagnostics routine for message C30714.
- carry out a diagnostics routine for message C30711.
- carry out a diagnostics routine for message C30707.

Note:
This message can be acknowledged using "Acknowledge internal event".

C30706 SI Motion P2: SAM/SBR limit exceeded

Message class: Safety monitoring channel has identified an error (10)

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Motion monitoring functions with set acceleration monitoring (SAM, p9306 = 3):
- after initiating STOP B (SS1) the velocity has exceeded the selected tolerance.

Motion monitoring functions with set brake ramp monitoring (SBR, p9306 = 1):
- after initiating STOP B (SS1) or SLS changeover to the lower speed stage, the speed has exceeded the selected tolerance.

The drive is shut down by the message C30700 "SI Motion P2: STOP A initiated".

Remedy: Check the braking behavior and, if necessary, adapt the parameterization of the parameter settings of the "SAM" or the "SBR" function.
This message can be acknowledged without a POWER ON using "Acknowledge internal event".
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe brake ramp monitoring)
SI: Safety Integrated
See also: p9348 (SI Motion SAM actual velocity tolerance (processor 2)), p9381 (SI Motion brake ramp reference value (processor 2)), p9382 (SI Motion brake ramp delay time (processor 2)), p9383 (SI Motion brake ramp monitoring time (processor 2)), p9548 (SI Motion SAM actual velocity tolerance (processor 1))

C30711 SI Motion P2: Defect in a monitoring channel

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: When cross-comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.
If at least one monitoring function is active, then message C30701 "SI Motion: STOP B initiated" is output.
The following message values may also occur in the following cases if the cause that is explicitly mentioned does not apply:
- synchronization error between processor 1 and processor 2.
Message value (r2124, interpret decimal):
0 ... 999:
Number of the cross-compared data that resulted in this message.
The significance of the individual message values is described in safety message C01711.
1000: Watchdog timer has expired. Too many signal changes have occurred at the F-DI.
1001: Initialization error of watchdog timer.
1011: Acceptance test status between the monitoring channels differ.
1020: Cyc. communication failure between the monit. cycles.
1040: Pulses suppressed with active encoderless monitoring functions.
1041: Current absolute value too low (encoderless)
1042: Current/voltage plausibility error
1043: Too many acceleration phases
1044: Actual current values plausibility error.
See also: r9725 (SI Motion diagnostics STOP F)
Remedy: For message value = 1040:
- de-select encoderless monitoring functions, select and de-select STO.
- if monitoring function is active, issue "SLS" pulse enable within 5 s of de-selecting STO.
For other message values:
- the significance of the individual message values is described in safety message C01711.
Note:
This message can be acknowledged using "Acknowledge internal event".

C30712 SI Motion P2: Defect in F-IO processing

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: When cross checking and comparing the two monitoring channels, the drive detected a difference between parameters or results of the F-IO processing and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.
The safety message C30711 with message value 0 is also displayed due to initiation of STOP F.
If at least one monitoring function is active, then safety message C30701 "SI Motion: STOP B initiated" is output.
Message value (r2124, interpret decimal):
Number of the cross-compared data that resulted in this message.
See safety message C01712 for a description of the message values.

Remedy: - check parameterization in the parameters involved and correct if required.
- ensure equality by copying the SI data to processor 2 and then carry out an acceptance test.
Note:
This message can be acknowledged via F-DI or PROFIsafe.

C30714 SI Motion P2: Safely limited speed exceeded

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive had moved faster than that specified by the velocity limit value (p9331). The drive is stopped as a result of the configured stop response (p9363).
Message value (r2124, interpret decimal):
100: SLS1 exceeded.
200: SLS2 exceeded.
300: SLS3 exceeded.
400: SLS4 exceeded.
Remedy: - check the traversing/motion program in the control.
- check the limits for "SLS" function and if required, adapt (p9331).
Note:
This message can be acknowledged using "Acknowledge internal event".
SLS: Safely Limited Speed
See also: p9331 (SI Motion SLS limit values (processor 2)), p9363 (SI Motion SLS stop response (processor 2))

C30716 SI Motion P2: Tolerance for safe motion direction exceeded

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The tolerance for the "safe motion direction" function was exceeded. The drive is stopped as a result of the configured stop response (p9366).
Message value (r2124, interpret decimal):
0: Tolerance for the "safe motion direction positive" function exceeded.
1: Tolerance for the "safe motion direction negative" function exceeded.
Remedy: - check the traversing/motion program in the control.
- check the tolerance for "SDI" function and if required, adapt (p9364).
This message can be acknowledged as follows:
- Deselect the "SDI" function and select again.
- carry out safe acknowledgment via "Acknowledgment internal event".
Note:
SDI: Safe Direction (safe motion direction)
SI: Safety Integrated
See also: p9364 (SI Motion SDI tolerance (processor 2)), p9365 (SI Motion SDI delay time (processor 2)), p9366 (SI Motion SDI stop response (processor 2))

C30770 SI Motion P2: Discrepancy error affecting the failsafe inputs

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The fail-safe digital inputs (F-DI) show a different state longer than that parameterized in p10002 / p10102.
Fault value (r0949, interpret binary):
Bit 0: Discrepancy error for F-DI 0
Bit 1: Discrepancy error for F-DI 1
...
Note:
If several discrepancy errors occur consecutively, then this message is only signaled for the first error that occurs.

Remedy: - check the wiring of the F-DI (contact problems).
Note:
This message can be acknowledged via F-DI or PROFIsafe.
Discrepancy errors of an F-DI can only be acknowledged if safe acknowledgment was carried out once after the cause of the error was resolved (p10106, acknowledgment via PROFIsafe, extended message acknowledgment). As long as safety acknowledgment was not carried out, the corresponding F-DI stays in the safe state internally.
When the "Extended message acknowledgment" function (p9307.0) is active, the following applies:
If the F-DI assigned for STO or SS1 is in a fail-safe state due to a discrepancy error, then when deselecting via this F-DI, safe acknowledgment can no longer be executed.
For cyclic switching operations at the F-DI, it may be necessary to adapt the discrepancy time to the switching frequency.
If the period of a cyclic switching pulse corresponds to twice the value of p10102, then the following formulas should be checked:
- p10102 < (tp / 2) - td (discrepancy time must be less than half the period minus the actual discrepancy time)
- p10102 >= 12 ms (discrepancy time must be no less than 12 ms)
- p10102 > td (discrepancy time must be greater than the switch discrepancy time that may actually occur)
td = possible actual discrepancy time (in ms) that can occur with a switching operation. It must be at least 12 ms.
tp = period for a switching operation in ms.
When debounce p10117 is active, the discrepancy time is directly specified by the debounce time.
If the period of a cyclic switching pulse corresponds to twice the debounce time, then the following formulas should be checked.
- p10102 < p10117 + 1 ms - td
- p10102 > td
- p10102 >= 12 ms
Example:
For a 110 ms switching frequency and p10117 = 0, the maximum discrepancy time that can be set is as follows:
p10102 <= (110/2 ms) - 12 ms = 43 ms
Rounded off, p10102 <= 36 ms is obtained (as the discrepancy time is rounded off as a multiple of 12 ms).
Note:
F-DI: Failsafe Digital Input

A30772 SI Motion P2: Test stop for fail-safe digital outputs running

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: The forced checking procedure (test stop) for the fail-safe digital inputs is currently in progress.
Remedy: The alarm is automatically withdraw after successfully ending or canceling (when a fault condition occurs) the test stop.
Note:
F-DO: Failsafe Digital Output

F30773 SI Motion P2: Test stop fail-safe digital output error

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: A fault has occurred on processor 2 during the forced checking procedure (test stop) of the fail-safe digital output.
Fault value (r0949, interpret hexadecimal):
RRRVWXYZ hex:
R: Reserved.
V: Actual state of the DO channel concerned (see X) on processor 2 (corresponds to the states read back from the hardware, bit 0 = DO 0, bit 1 = DO 1, etc.).
W: Required state of the DO channel concerned (see X, bit 0 = DO 0, bit 1 = DO 1, etc.).
X: DO channels involved, which indicate an error (bit 0 = DO 0, bit 1 = DO 1, etc.).
Y: Reason for the test stop fault.
Z: State of the test stop in which the fault has occurred.

Y: Reason for the test stop fault
Y = 1: Processor 1 in incorrect test stop state (internal fault).
Y = 2: Expected states of the DOs were not fulfilled (CU240D-2: readback via DI 5 / CU250S-2 readback via DI 6).
Y = 3: Incorrect timer state on processor 1 (internal fault)
Y = 4: Expected states of the diag DOs were not fulfilled (CU240D-2: internal readback on processor 1 channel / CU250S-2 readback via DI6).
Y = 5: Expected states of the second diag DOs were not fulfilled (CU240D-2: internal readback on processor 2).
X and V indicate the DI or Diag-DO state dependent upon the reason for the fault (2, 4 or 5).
In the event of multiple test stop faults, the first one that occurred is shown.

Z: Test stop state and associated test actions
Z = 0 ... 3: Synchronization phase of test stop between processor 1 and processor 2 no switching operations
Z = 4: DO + OFF and DO - OFF
Z = 5: Check to see if states are as expected
Z = 6: DO + ON and DO - ON
Z = 7: Check to see if states are as expected
Z = 8: DO + OFF and DO - ON
Z = 9: Check to see if states are as expected
Z = 10: DO + ON and DO - OFF
Z = 11: Check to see if states are as expected
Z = 12: DO + OFF and DO - OFF
Z = 13: Check to see if states are as expected
Z = 14: End of test stop

Diag expected states in table format:
Test stop state: Expectation Mode 1 / Mode 2 / Mode 3 / Mode 4
5: 0/-/-/1
7: 0/-/-/0
9: 0/-/-/0
11: 1/-/-/1
13: 0/-/-/1
Second diag expected states in table format:
Test stop state: Expectation Mode 1 / Mode 2 / Mode 3 / Mode 4
5: -/-/-/1
7: -/-/-/0
9: -/-/-/1
11: -/-/-/0
13: -/-/-/1
DI expected states in table format:
Test stop state: Expectation Mode 1 / Mode 2 / Mode 3 / Mode 4
5: -/1/1/-
7: -/0/0/-
9: -/0/1/-
11: -/0/1/-
13: -/1/1/-

Example:
Fault F01773 (P1) is signaled with fault value = 0001_0127 and fault F30773 (P2) is signaled with fault value 0000_0127.
This means that in state 7 (Z = 7) the state of the external readback signal was not set correctly (Y = 2) after DO-0 (X = 1) was switched to ON/ON.
Fault value 0001_0127 indicates that 0 was expected (W = 0) and 1 (V = 1) was read back from the hardware.
Fault value 0000_0127 on the processor 2 indicates that the states were as expected.
In the case of fault F30773, W and V are always identical; a value of 0 always means that 0 was expected at the readback input but was not present on processor 1.

Remedy: Check the wiring of the fail-safe digital output (F-DO) and restart the test stop.
Note:
- the fault is withdrawn if the test stop is successfully completed.
- in the event of multiple test stop faults, the first one that occurred is shown. Once the test stop has been restarted the next queued test stop fault will be signaled (if there is one).
F-DO: Failsafe Digital Output

A30788 Automatic test stop: wait for STO deselection via SMM

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: NONE
Cause: The automatic test stop was not able to be carried out after powering up.
Possible causes:
- the STO function is selected via Safety Extended Functions.
- a safety message is present, that resulted in a STO.
Remedy: - Deselect STO via Safety Extended Functions.
- remove the cause of the safety messages and acknowledge the messages.
The automatic test stop is performed after removing the cause.

C30798 SI Motion P2: Test stop for motion monitoring functions running

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The forced checking procedure (test stop) for the safe motion monitoring functions is currently in progress.
Remedy: Not necessary.
The message is automatically withdrawn when the test stop has been completed.
Note:
SI: Safety Integrated

C30799 SI Motion P2: Acceptance test mode active

Message class: Safety monitoring channel has identified an error (10)
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The acceptance test mode is active.
Remedy: Not necessary.
The message is withdrawn when exiting the acceptance test mode.

N30800 (F) Power unit: Group signal

Message class: Power electronics faulted (5)
Reaction: OFF2
Acknowledge: NONE
Cause: The power unit has detected at least one fault.
Remedy: Evaluate the other messages that are presently available.

F30802 Power unit: Time slice overflow

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A time slice overflow has occurred.
Fault value (r0949, interpret decimal):
xx: Time slice number xx
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

F30804 (N, A) Power unit: CRC

Message class: Hardware/software error (1)
Reaction: OFF2 (OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: A checksum error (CRC error) has occurred for the power unit.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

F30805 Power unit: EEPROM checksum error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
Remedy: Replace the module.

F30809 Power unit: Switching information not valid

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: For 3P gating unit, the following applies:
The last switching status word in the setpoint telegram is identified by the end ID. Such an end ID was not found.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

A30810 (F) Power unit: Watchdog timer

Message class: Hardware/software error (1)
Reaction: NONE
Acknowledge: NONE
Cause: When booting it was detected that the cause of the previous reset was an SAC watchdog timer overflow.
Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

F30850 Power unit: Internal software error

Message class: Hardware/software error (1)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: POWER ON
Cause: An internal software error has occurred in the power unit.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - replace power unit.
- if required, upgrade the firmware in the power unit.
- contact Technical Support.

F30895 PU DRIVE-CLiQ (CU): Alternating cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: Communication error to the power unit.

Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F30903 Power unit: I2C bus error occurred

Message class: Hardware/software error (1)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: Communications error with an EEPROM or an analog/digital converter.
Fault value (r0949, interpret hexadecimal):
80000000 hex:
- internal software error.
00000001 hex ... 0000FFFF hex:
- module fault.
Remedy: For fault value = 80000000 hex:
- upgrade firmware to later version.
For fault value = 00000001 hex ... 0000FFFF hex:
- replace the module.

A30920 (F) Temperature sensor fault

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY: R > 2120 Ohm, PT1000: R > 2120 Ohm
2: Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm
Remedy: - make sure that the sensor is connected correctly.
- replace the sensor.

F30950 Power unit: Internal software error

Message class: Hardware/software error (1)
Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.
Remedy: - if necessary, upgrade the firmware in the power unit to a later version.
- contact Technical Support.

A30999 (F, N) Power unit: Unknown alarm

Message class: Power electronics faulted (5)
Reaction: NONE
Acknowledge: NONE
Cause: An alarm occurred on the power unit that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
Remedy: - replace the firmware on the power unit by an older firmware version (r0128).
- upgrade the firmware on the Control Unit (r0018).

F31100 (N, A) Encoder 1: Zero mark distance error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- replace the encoder or encoder cable.

F31101 (N, A) Encoder 1: Zero mark failed

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

F31103 (N, A) Encoder 1: Amplitude error track R

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause: The amplitude of the reference track signal (track R) does not lie within the tolerance bandwidth for encoder 1.
The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)
The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.
The response threshold for the differential signal level of the encoder is < -1600 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.
The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).

The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).

See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly.
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

F31110 (N, A) Encoder 1: Serial communications error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Fault value (r0949, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 7: Timeout for the register communication.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Bit 13: Data line incorrect.
Bit 14: Fault for the register communication.
Bit 15: Internal communication error.
Note:
For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.

Remedy:
For fault value, bit 0 = 1:
- Enc defect F31111 may provide additional details.

For fault value, bit 1 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 2 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 3 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable.

For fault value, bit 4 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 5 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 6 = 1:
- Update Sensor Module firmware.

For fault value, bit 7 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 8 = 1:
- check parameterization (p0429.2).

For fault value, bit 9 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
For fault value, bit 10 = 1:
- check parameterization (p0429.2, p0449).
For fault value, bit 11 = 1:
- check parameterization (p0436).
For fault value, bit 12 = 1:
- check parameterization (p0429.6).
For fault value, bit 13 = 1:
- check data line.
For fault value, bit 14 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

F31111 (N, A) Encoder 1: Absolute encoder internal error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause: The absolute encoder fault word supplies fault bits that have been set.
Fault value (r0949, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.
yyyy = 1:
Bit 0: Signal amplitude outside the control range.
Bit 1: Error multiturn interface
Bit 2: Internal data error (singleturn/multiturn not with single steps).
Bit 3: Error EEPROM interface.
Bit 4: SAR converter error.
Bit 5: Fault for the register data transfer.
Bit 6: Internal error identified at the error pin (nErr).
Bit 7: Temperature threshold exceeded or fallen below.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: For yyyy = 0:
For fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
For fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.

For fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).
For yyyy = 1:
Encoder is defective. Replace encoder.

F31112 (N, A) Encoder 1: Error bit set in the serial protocol

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The encoder sends a set error bit via the serial protocol.
Fault value (r0949, interpret binary):
Bit 0: Fault bit in the position protocol.
Remedy: For fault value, bit 0 = 1:
In the case of an EnDat encoder, F31111 may provide further details.

F31115 (N, A) Encoder 1: Amplitude error track A or B (A^2 + B^2)

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The amplitude (root of A^2 + B^2) for encoder 1 exceeds the permissible tolerance.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 170 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response thresholds are < 1070 mV and > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note when using the internal resolver evaluation (CU250S):
The nominal signal level is at 1300 mV. The response thresholds are < 490 mV and > 1616 mV.
A signal level of 1300 mV peak value corresponds to the numerical value 2DE6 hex = 11750 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
The following applies to measuring systems without their own bearing system:
- adjust the scanning head and check the bearing system of the measuring wheel.
The following applies for measuring systems with their own bearing system:
- ensure that the encoder housing is not subject to any axial force.

F31116 (N, A) Encoder 1: Amplitude error monitoring track A + B

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: IMMEDIATELY
Cause: The amplitude of the rectified encoder signals A and B and the amplitude from the roots of A^2 + B^2 for encoder 1 are not within the tolerance bandwidth.

Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 130 mV (observe the frequency response of the encoder) and > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).

F31117 (N, A) Encoder 1: Inversion error signals A/B/R

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: IMMEDIATELY

Cause:
For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.
Fault value (r0949, interpret binary):
Bits 0 ... 15: Only for internal Siemens troubleshooting.
Bit 16: Error track A.
Bit 17: Error track B.
Bit 18: Error track R.
Note:
For SMC30 (order no.. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), CUA32, and CU310, the following applies:
A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check the encoder/cable.
- Does the encoder supply signals and the associated inverted signals?
Note:
For SMC30 (order no. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), the following applies:
- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).
For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30) or X23 (CUA32, CU310):
- pin 10 (reference signal R) <--> pin 7 (encoder power supply, ground)
- pin 11 (reference signal R inverted) <--> pin 4 (encoder power supply)

F31118 (N, A) Encoder 1: Speed difference outside the tolerance range

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause:
For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Encoder 1 is used as motor encoder and can be effective has fault response to change over to encoderless operation.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also: p0491 (Motor encoder fault response ENCODER), p0492 (Maximum speed difference per sampling cycle)

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

F31120 (N, A) Encoder 1: Power supply voltage fault

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause: A power supply fault was detected for encoder 1.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line.
Bit 1: Overcurrent condition for the encoder power supply.
Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.
Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.
Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.
Bit 5: Overcurrent at the EnDat connection of the converter.
Bit 6: Overvoltage at the EnDat connection of the converter.
Bit 7: Hardware fault at the EnDat connection of the converter.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).
For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 2 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 3 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 5 = 1:
- Measuring unit correctly connected at the converter?
- Replace the measuring unit or the cable to the measuring unit.
For fault value, bit 6, 7 = 1:
- Replace the defective EnDat 2.2 converter.

F31121 (N, A) Encoder 1: Coarse position error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (NONE)

Acknowledge: PULSE INHIBIT

Cause: For the actual value sensing, an error was detected on the module.
As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

F31122 Encoder 1: Internal power supply voltage faulty

Message class: Supply voltage fault (undervoltage) (3)

Reaction: ENCODER

Acknowledge: IMMEDIATELY

Cause: Fault in internal reference voltage of ASICs for encoder 1.
Fault value (r0949, interpret decimal):
1: Reference voltage error.
2: Internal undervoltage.
3: Internal overvoltage.

Remedy: Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

F31123 (N, A) Encoder 1: Signal level A/B unipolar outside tolerance

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The unipolar level (AP/AN or BP/BN) for encoder 1 is outside the permissible tolerance.
Fault value (r0949, interpret binary):
Bit 0 = 1: Either AP or AN outside the tolerance.
Bit 16 = 1: Either BP or BN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - make sure that the encoder cables and shielding are installed in an EMC-compliant manner.
- check the plug connections and contacts of the encoder cable.
- check the short-circuit of a signal cable with mass or the operating voltage.
- replace the encoder cable.

F31125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The amplitude of track A or B for encoder 1 exceeds the permissible tolerance band.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is > 750 mV. This fault also occurs if the analog/digital converter is overcontrolled.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note when using the internal resolver evaluation (CU250S):
The nominal signal level is at 1300 mV. The response threshold is > 1616 mV.
A signal level of 1300 mV peak value corresponds to the numerical value 2DE6 hex = 11750 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

F31126 (N, A) Encoder 1: Amplitude AB too high

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The amplitude (root of A^2 + B^2 or |A| + |B|) for encoder 1 exceeds the permissible tolerance.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)

The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold for (|A| + |B|) is > 1120 mV or the root of (A^2 + B^2) > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

F31129 (N, A) Encoder 1: Position difference hall sensor/track C/D and A/B too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause:
The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A31429.
Fault value (r0949, interpret decimal):
For track C/D, the following applies:
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).
For Hall signals, the following applies:
Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

F31130 (N, A) Encoder 1: Zero mark and position error from the coarse synchronization

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause:
After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.
When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of +/-60 ° electrical.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Determined mechanical zero mark position (can only be used for track C/D).
xxxx: Deviation of the zero mark from the expected position as electrical angle.
Scaling: 32768 dec = 180 °
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check p0431 and, if necessary, correct (trigger via p1990 = 1 if necessary).
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

F31131 (N, A) Encoder 1: Deviation position incremental/absolute too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause:
Absolute encoder:
When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.
Limit value for the deviation:
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.

Incremental encoder:
When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.

For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.

Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).

F31135 Encoder 1: Fault when determining the position

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause:
The encoder supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

Remedy:
- determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.

Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

F31136 Encoder 1: Error when determining multiturn information

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The encoder supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).

Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

Remedy:
- determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.

Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

F31137 Encoder 1: Internal fault when determining the position

Message class: Hardware/software error (1)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
For yy = 08 hex (bit 27 = 1), the following bit definition applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) fault position word 1.
Bit 9: F2 (safety status display) fault position word 2.
Bit 16: LED monitoring iC-LG (opto ASIC).
Bit 17: Fault in the multiturn.
Bit 23: Temperature outside the limit values.
Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

Remedy:
- determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

F31138 Encoder 1: Internal error when determining multiturn information

Message class: Hardware/software error (1)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
For yy = 08 hex (bit 27 = 1), the following bit definition applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) fault position word 1.
Bit 9: F2 (safety status display) fault position word 2.
Bit 16: LED monitoring iC-LG (opto ASIC).
Bit 17: Fault in the multiturn.
Bit 23: Temperature outside the limit values.

Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

Remedy:
- determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

F31142 (N, A) Encoder 1: Battery voltage fault

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.
Remedy: Replace battery.

F31150 (N, A) Encoder 1: Initialization error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
Encoder malfunction.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).
See also: p0404 (Encoder configuration effective), p0491 (Motor encoder fault response ENCODER)
Remedy:
- check that p0404 is correctly set.
- check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable.
- if relevant, note additional fault messages that describe the fault in detail.

F31151 (N, A) Encoder 1: Encoder speed for initialization AB too high

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The encoder speed is too high while initializing the Sensor Module.
Remedy: Reduce the speed of the encoder accordingly during initialization.
If necessary, de-activate monitoring (p0437.29).
See also: p0437 (Sensor Module configuration extended)

F31152 (N, A) Encoder 1: Maximum input frequency exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The maximum input frequency of the encoder evaluation has been exceeded.
Fault value (r0949, interpret decimal):
Actual input frequency in Hz.
See also: p0408 (Rotary encoder pulse number)
Remedy:
- reduce the speed.
- Use an encoder with a lower pulse number (p0408).

F31153 (N, A) Encoder 1: Identification error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: An error has occurred when identifying the encoder (waiting) p0400 = 10100.
The connected encoder was not able to be identified.
Fault value (r0949, interpret hexadecimal):
Bit 0: Data length incorrect.
See also: p0400 (Encoder type selection)

Remedy: Manually configure the encoder according to the data sheet.

F31160 (N, A) Encoder 1: Analog sensor channel A failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4673).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
Remedy: For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4673).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

F31161 (N, A) Encoder 1: Analog sensor channel B failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
Remedy: For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4675).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

F31163 (N, A) Encoder 1: Analog sensor position value exceeds limit value

Message class: Actual position/speed value incorrect or not available (11)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The position value has exceeded the permissible range of -0.5 ... +0.5.
Fault value (r0949, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.
Remedy: For fault value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For fault value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

A31400 (F, N) Encoder 1: Alarm threshold zero mark distance error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

A31401 (F, N) Encoder 1: Alarm threshold zero mark failed

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

F31405 (N, A) Encoder 1: Temperature in the encoder evaluation inadmissible

Message class: Overtemperature of the electronic components (6)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an inadmissible temperature.
The fault threshold is 125 ° C.
Fault value (r0949, interpret decimal):
Measured board/module temperature in 0.1 °C.

Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

A31407 (F, N) Encoder 1: Function limit reached

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The encoder has reached one of its function limits. A service is recommended.
Alarm value (r2124, interpret decimal):
1: Incremental signals
3: Absolute track
4: Code connection

Remedy: Perform service. Replace the encoder if necessary.
Note:
The actual functional reserve of an encoder can be displayed via r4651.
See also: p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)

A31410 (F, N) Encoder 1: Serial communications

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

A31411 (F, N) Encoder 1: Absolute encoder signals internal alarms

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The absolute encoder fault word includes alarm bits that have been set.
Alarm value (r2124, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.
yyyy = 1:
Bit 0: Signal amplitude outside the control range.
Bit 1: Error multiturn interface
Bit 2: Internal data error (singleturn/multiturn not with single steps).
Bit 3: Error EEPROM interface.
Bit 4: SAR_converter error.
Bit 5: Fault for the register data transfer.
Bit 6: Internal error identified at the error pin (nErr).
Bit 7: Temperature threshold exceeded or fallen below.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Replace encoder.

A31412 (F, N) Encoder 1: Error bit set in the serial protocol

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The encoder sends a set error bit via the serial protocol.
Alarm value (r2124, interpret binary):
Bit 0: Fault bit in the position protocol.
Bit 1: Alarm bit in the position protocol.

Remedy:
- carry out a POWER ON (switch-off/switch-on) for all components.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

A31414 (F, N) Encoder 1: Amplitude error track C or D (C^2 + D^2)

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track D (16 bits with sign).
xxxx = Signal level, track C (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- check the Hall sensor box.

N31415 (F, A) Encoder 1: Amplitude alarm track A or B (A^2 + B^2)

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (root of A^2 + B^2) for encoder 1 exceeds the permissible tolerance.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 230 mV (observe the frequency response of the encoder).
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
Note when using the internal resolver evaluation (CU250S):
The nominal signal level is at 1300 mV. The response threshold is < 650 mV.
A signal level of 1300 mV peak value corresponds to the numerical value 16F3 hex = 5875 dec.

Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- if the coding disk is soiled or the lighting aged, replace the encoder.

A31418 (F, N) Encoder 1: Speed difference per sampling rate exceeded

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
See also: p0492 (Maximum speed difference per sampling cycle)

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

A31419 (F, N) Encoder 1: Track A or B outside tolerance

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude/phase/offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxxx1: Minimum of the offset correction, track B
xxxx2: Maximum of the offset correction, track B
xxx1x: Minimum of the offset correction, track A
xxx2x: Maximum of the offset correction, track A
xx1xx: Minimum of the amplitude correction, track B/A
xx2xx: Maximum of the amplitude correction, track B/A
x1xxx: Minimum of the phase error correction
x2xxx: Maximum of the phase error correction
1xxxx: Minimum of the cubic correction
2xxxx: Maximum of the cubic correction
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

A31421 (F, N) Encoder 1: Coarse position error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: For the actual value sensing, an error was detected. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.

Alarm value (r2124, interpret decimal):

3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.

Remedy: For alarm value = 3:

- For a standard encoder with cable, contact the manufacturer where relevant.
- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A* and B with B*) or, for a programmable encoder, check the zero offset of the position.

A31422 (F, N) Encoder 1: Pulses per revolution square-wave encoder outside tolerance bandwidth

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.

This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.

The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).

Alarm value (r2124, interpret decimal):

accumulated differential pulses in encoder pulses.

See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

A31429 (F, N) Encoder 1: Position difference hall sensor/track C/D and A/B too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.

One period of track C/D corresponds to 360 ° mechanical.

One period of the Hall signal corresponds to 360 ° electrical.

The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.

Alarm value (r2124, interpret decimal):

For track C/D, the following applies:

Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

For Hall signals, the following applies:

Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

A31431 (F, N) Encoder 1: Deviation position incremental/absolute too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.

For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.

Alarm value (r2124, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- Clean coding disk or remove strong magnetic fields.

A31432 (F, N) Encoder 1: Rotor position adaptation corrects deviation

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: For track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected.
Alarm value (r2124, interpret decimal):
Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

A31442 (F, N) Encoder 1: Battery voltage pre-alarm

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.

Remedy: Replace battery.

A31443 (F, N) Encoder 1: Unipolar CD signal level outside specification

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The unipolar level (CP/CN or DP/DN) for encoder 1 is outside the permissible tolerance.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Either CP or CN outside the tolerance.
Bit 16 = 1: Either DP or DN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.

Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- are the C/D tracks connected correctly (have the signal lines CP and CN or DP and DN been interchanged)?
- replace the encoder cable.

A31460 (N) Encoder 1: Analog sensor channel A failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside measuring range set in p4673.
3: The absolute value of the input voltage has exceeded the range limit (p4676).
Remedy: For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4673).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

A31461 (N) Encoder 1: Analog sensor channel B failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
Remedy: For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4675).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

A31462 (N) Encoder 1: Analog sensor no channel active

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Channel A and B are not activated for the analog sensor.
Remedy:
- activate channel A and/or channel B (p4670).
- check the encoder configuration (p0404.17).
See also: p4670 (Analog sensor configuration)

A31463 (N) Encoder 1: Analog sensor position value exceeds limit value

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The position value has exceeded the permissible range of -0.5 ... +0.5.
Alarm value (r2124, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.

Remedy: For alarm value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For alarm value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

A31470 (F, N) Encoder 1: Soiling detected

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: In the case of the alternative encoder system interface on the Sensor Module Cabinet 30 (SMC30), encoder soiling is signaled via a 0 signal at terminal X521.7.

Remedy: - check the plug connections.
- replace the encoder or encoder cable.

F31500 (N, A) Encoder 1: Position tracking traversing range exceeded

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.
For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.
For p0411.3 = 1, the maximum traversing range for the configured linear axis is pre-set (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).

Remedy: The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- de-select encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

F31501 (N, A) Encoder 1: Position tracking encoder position outside tolerance window

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When switched off, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.
Fault value (r0949, interpret decimal):
Deviation (difference) to the last encoder position in increments of the absolute value.
The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r0477.
See also: p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)

Remedy: Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- de-select encoder commissioning (p0010 = 0).

The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also: p0010 (Drive commissioning parameter filter), p2507 (LR absolute encoder adjustment status)

F31502 (N, A) Encoder 1: Encoder with measuring gear without valid signals

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The encoder with measuring gear no longer provides any valid signals.
Remedy: It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.

F31503 (N, A) Encoder 1: Position tracking cannot be reset

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The position tracking for the measuring gear cannot be reset.
Remedy: The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- de-select encoder commissioning (p0010 = 0).

The fault should then be acknowledged and the absolute encoder adjusted.

F31802 (N, A) Encoder 1: Time slice overflow

Message class: Hardware/software error (1)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: IMMEDIATELY
Cause: A time slice overflow has occurred in encoder 1.
Fault value (r0949, interpret hexadecimal):
yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved
x = 9:
Time slice overflow of the fast (current controller clock cycle) time slice.
x = A:
Time slice overflow of the average time slice.
x = C:
Time slice overflow of the slow time slice.
yx = 3E7:
Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation).
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Increase the current controller sampling time
Note:
For a current controller sampling time = 31.25 µs, use an SMx20 with order number 6SL3055-0AA00-5xA3.

F31805 (N, A) Encoder 1: EEPROM checksum error

Message class: Hardware/software error (1)
Reaction: ENCODER (IASC/DCBRK, NONE)
Acknowledge: IMMEDIATELY
Cause: Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Replace the module.

F31850 (N, A) Encoder 1: Encoder evaluation internal software error

Message class: Hardware/software error (1)

Reaction: ENCODER (IASC/DCBRK, NONE)

Acknowledge: POWER ON

Cause: An internal software error has occurred in the Sensor Module of encoder 1.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.
11000 ... 11499: Descriptive data from EEPROM incorrect.
11500 ... 11899: Calibration data from EEPROM incorrect.
11900 ... 11999: Configuration data from EEPROM incorrect.
12000 ... 12008: communication with analog/digital converter faulted.
16000: DRIVE-CLiQ encoder initialization application error.
16001: DRIVE-CLiQ encoder initialization ALU error.
16002: DRIVE-CLiQ encoder HISI / SISI initialization error.
16003: DRIVE-CLiQ encoder safety initialization error.
16004: DRIVE-CLiQ encoder internal system error.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

F31899 (N, A) Encoder 1: Unknown fault

Message class: Actual position/speed value incorrect or not available (11)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

F31905 (N, A) Encoder 1: Parameterization error

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: A parameter of encoder 1 was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
xxxx = 421:
For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.
yyyy = 0:
No information available.
yyyy = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).

yyyy = 2:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.
yyyy = 3:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number < 10000.
yyyy = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.
yyyy = 5:
For SQW encoder, value in p4686 greater than in p0425.
yyyy = 6:
DRIVE-CLiQ encoder cannot be used with this firmware version.
yyyy = 7:
For an SQW encoder, the Xact1 correction (p0437.2) is only permitted with equidistant zero marks.
yyyy = 8:
The motor pole pair width is not supported by the linear scale being used.
yyyy = 9:
The length of the position in the EnDat protocol may be a maximum of 32 bits.
yyyy = 10:
The connected encoder is not supported.
yyyy = 11:
The hardware does not support track monitoring.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.
- re parameter number = 314:
- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

A31915 (F, N) Encoder 1: Configuration error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: The configuration for encoder 1 is incorrect.
Alarm value (r2124, interpret decimal):
1:
Re-parameterization between fault/alarm is not permissible.
419:
When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.

Remedy:
For alarm value = 1:
No re-parameterization between fault/alarm.
For alarm value = 419:
Reduce the fine resolution (p0419) or de-activate the monitoring (p0437.25), if the complete multiturn range is not required.

A31920 (F, N) Encoder 1: Temperature sensor fault

Message class: External measured value / signal state outside the permissible range (16)
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the temperature sensor, an error occurred.
Fault cause:
1 (= 01 hex):
Wire breakage or sensor not connected.
KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm

2 (= 02 hex):
Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm
Additional values:
Only for internal Siemens troubleshooting.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = channel number, xx = error cause
See also: p0491 (Motor encoder fault response ENCODER)

Remedy:
- check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).

A31930 (N) Encoder 1: Data logger has saved data

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.
The diagnostics data is saved in the following folder:
/USER/SINAMICS/DATA/SMTRC00.BIN
...
/USER/SINAMICS/DATA/SMTRC07.BIN
/USER/SINAMICS/DATA/SMTRCIDX.TXT
The following information is contained in the TXT file:
- Display of the last written BIN file.
- Number of write operations that are still possible (from 10000 downwards).
Note:
Only Siemens can evaluate the BIN files.

Remedy: Not necessary.
The alarm disappears automatically.
The data logger is ready to record the next fault case.

F31950 Encoder 1: Internal software error

Message class: Hardware/software error (1)

Reaction: ENCODER (OFF2)

Acknowledge: POWER ON

Cause: An internal software error has occurred.
Fault value (r0949, interpret decimal):
The fault value contains information regarding the fault source.
Only for internal Siemens troubleshooting.

Remedy:
- if necessary, upgrade the firmware in the Sensor Module to a later version.
- contact Technical Support.

A31999 (F, N) Encoder 1: Unknown alarm

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: A alarm has occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

F32100 (N, A) Encoder 2: Zero mark distance error

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- replace the encoder or encoder cable.

F32101 (N, A) Encoder 2: Zero mark failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

F32103 (N, A) Encoder 2: Amplitude error track R

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The amplitude of the reference track signal (track R) does not lie within the tolerance bandwidth for encoder 2.
The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)
The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.
The response threshold for the differential signal level of the encoder is < -1600 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.
The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).

The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).

Remedy:
- check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly.
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

F32110 (N, A) Encoder 2: Serial communications error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Fault value (r0949, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 7: Timeout for the register communication.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Bit 13: Data line incorrect.
Bit 14: Fault for the register communication.
Bit 15: Internal communication error.
Note:
For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.

Remedy:
For fault value, bit 0 = 1:
- Enc defect F31111 may provide additional details.

For fault value, bit 1 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 2 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 3 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable.

For fault value, bit 4 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 5 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 6 = 1:
- Update Sensor Module firmware.

For fault value, bit 7 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 8 = 1:
- check parameterization (p0429.2).

For fault value, bit 9 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 10 = 1:
- check parameterization (p0429.2, p0449).

For fault value, bit 11 = 1:
- check parameterization (p0436).

For fault value, bit 12 = 1:
- check parameterization (p0429.6).

For fault value, bit 13 = 1:
- check data line.

For fault value, bit 14 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

F32111 (N, A) Encoder 2: Absolute encoder internal fault

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The absolute encoder fault word supplies fault bits that have been set.

Fault value (r0949, interpret binary):

yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause

yyyy = 0:

Bit 0: Lighting system failed.

Bit 1: Signal amplitude too low.

Bit 2: Position value incorrect.

Bit 3: Encoder power supply overvoltage condition.

Bit 4: Encoder power supply undervoltage condition.

Bit 5: Encoder power supply overcurrent condition.

Bit 6: The battery must be changed.

yyyy = 1:

Bit 0: Signal amplitude outside the control range.

Bit 1: Error multiturn interface

Bit 2: Internal data error (singleturn/multiturn not with single steps).

Bit 3: Error EEPROM interface.

Bit 4: SAR converter error.

Bit 5: Fault for the register data transfer.

Bit 6: Internal error identified at the error pin (nErr).

Bit 7: Temperature threshold exceeded or fallen below.

Remedy: For yyyy = 0:

For fault value, bit 0 = 1:

Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.

For fault value, bit 1 = 1:

Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.

For fault value, bit 2 = 1:

Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.

For fault value, bit 3 = 1:

5 V power supply voltage fault.

When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.

When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.

For fault value, bit 4 = 1:

5 V power supply voltage fault.

When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.

When using a motor with DRIVE-CLiQ: Replace the motor.

For fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).
For yyyy = 1:
Encoder is defective. Replace encoder.

F32115 (N, A) Encoder 2: Amplitude error track A or B (A^2 + B^2)

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (root of A^2 + B^2) for encoder 2 exceeds the permissible tolerance.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 170 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response thresholds are < 1070 mV and > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note when using the internal resolver evaluation (CU250S):
The nominal signal level is at 1300 mV. The response thresholds are < 490 mV and > 1616 mV.
A signal level of 1300 mV peak value corresponds to the numerical value 2DE6 hex = 11750 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

Remedy: - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
The following applies to measuring systems without their own bearing system:
- adjust the scanning head and check the bearing system of the measuring wheel.
The following applies for measuring systems with their own bearing system:
- ensure that the encoder housing is not subject to any axial force.

F32116 (N, A) Encoder 2: Amplitude error monitoring track A + B

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The amplitude of the rectified encoder signals A and B and the amplitude from the roots of A^2 + B^2 for encoder 2 are not within the tolerance bandwidth.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 130 mV (observe the frequency response of the encoder) and > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

Remedy: - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).

F32117 (N, A) Encoder 2: Inversion error signals A/B/R

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.
Fault value (r0949, interpret binary):
Bits 0 ... 15: Only for internal Siemens troubleshooting.
Bit 16: Error track A.
Bit 17: Error track B.
Bit 18: Error track R.
Note:
For SMC30 (order no.. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), CUA32, and CU310, the following applies:
A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.
Remedy: - check the encoder/cable.
- Does the encoder supply signals and the associated inverted signals?
Note:
For SMC30 (order no. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), the following applies:
- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).
For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30) or X23 (CUA32, CU310):
- pin 10 (reference signal R) <--> pin 7 (encoder power supply, ground)
- pin 11 (reference signal R inverted) <--> pin 4 (encoder power supply)

F32118 (N, A) Encoder 2: Speed difference outside the tolerance range

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also: p0492 (Maximum speed difference per sampling cycle)
Remedy: - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

F32120 (N, A) Encoder 2: Power supply voltage fault

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: A power supply fault was detected for encoder 2.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line.
Bit 1: Overcurrent condition for the encoder power supply.
Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.
Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.
Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.
Bit 5: Overcurrent at the EnDat connection of the converter.

Bit 6: Overvoltage at the EnDat connection of the converter.
Bit 7: Hardware fault at the EnDat connection of the converter.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.

Remedy: For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).

For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.

For fault value, bit 2 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.

For fault value, bit 3 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.

For fault value, bit 5 = 1:
- Measuring unit correctly connected at the converter?
- Replace the measuring unit or the cable to the measuring unit.

For fault value, bit 6, 7 = 1:
- Replace the defective EnDat 2.2 converter.

F32121 (N, A) Encoder 2: Coarse position error

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: For the actual value sensing, an error was detected on the module.
As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.
Remedy: Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

F32122 Encoder 2: Internal power supply voltage faulty

Message class: Supply voltage fault (undervoltage) (3)
Reaction: OFF1
Acknowledge: IMMEDIATELY
Cause: Fault in internal reference voltage of ASICs for encoder 2.
Fault value (r0949, interpret decimal):
1: Reference voltage error.
2: Internal undervoltage.
3: Internal overvoltage.
Remedy: Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

F32123 (N, A) Encoder 2: Signal level A/B unipolar outside tolerance

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The unipolar level (AP/AN or BP/BN) for encoder 2 is outside the permissible tolerance.
Fault value (r0949, interpret binary):
Bit 0 = 1: Either AP or AN outside the tolerance.
Bit 16 = 1: Either BP or BN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.

Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).

Remedy:
- make sure that the encoder cables and shielding are installed in an EMC-compliant manner.
- check the plug connections and contacts of the encoder cable.
- check the short-circuit of a signal cable with mass or the operating voltage.
- replace the encoder cable.

F32125 (N, A) Encoder 2: Amplitude error track A or B overcontrolled

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The amplitude of track A or B for encoder 2 exceeds the permissible tolerance band.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is > 750 mV. This fault also occurs if the analog/digital converter is overcontrolled.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note when using the internal resolver evaluation (CU250S):
The nominal signal level is at 1300 mV. The response threshold is > 1616 mV.
A signal level of 1300 mV peak value corresponds to the numerical value 2DE6 hex = 11750 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

Remedy:
- check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

F32126 (N, A) Encoder 2: Amplitude AB too high

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (root of A^2 + B^2 or |A| + |B|) for encoder 2 exceeds the permissible tolerance.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold for (|A| + |B|) is > 1120 mV or the root of (A^2 + B^2) > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

Remedy:
- check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

F32129 (N, A) Encoder 2: Position difference hall sensor/track C/D and A/B too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.

One period of track C/D corresponds to 360 ° mechanical.

One period of the Hall signal corresponds to 360 ° electrical.

The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.

After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A32429.

Fault value (r0949, interpret decimal):

For track C/D, the following applies:

Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

For Hall signals, the following applies:

Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

Remedy: - track C or D not connected.

- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

F32130 (N, A) Encoder 2: Zero mark and position error from the coarse synchronization

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause: After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.

When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.

When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of +/-60 ° electrical.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex

yyyy: Determined mechanical zero mark position (can only be used for track C/D).

xxxx: Deviation of the zero mark from the expected position as electrical angle.

Scaling: 32768 dec = 180 °

Remedy: - check that the encoder cables are routed in compliance with EMC.

- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

F32131 (N, A) Encoder 2: Deviation position incremental/absolute too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Absolute encoder:

When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.

Limit value for the deviation:

- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.

Incremental encoder:
When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.
For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.
Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).

F32135 Encoder 2: Fault when determining the position

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The encoder supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).

Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

Remedy: - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

F32136 Encoder 2: Error when determining multiturn information

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The encoder supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

Remedy: - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

F32137 Encoder 2: Internal fault when determining the position

Message class: Hardware/software error (1)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
For yy = 08 hex (bit 27 = 1), the following bit definition applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) fault position word 1.
Bit 9: F2 (safety status display) fault position word 2.
Bit 16: LED monitoring iC-LG (opto ASIC).
Bit 17: Fault in the multiturn.
Bit 23: Temperature outside the limit values.
Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

Remedy: - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

F32138 Encoder 2: Internal error when determining multiturn information

Message class: Hardware/software error (1)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
For yy = 08 hex (bit 27 = 1), the following bit definition applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) fault position word 1.
Bit 9: F2 (safety status display) fault position word 2.
Bit 16: LED monitoring iC-LG (opto ASIC).
Bit 17: Fault in the multiturn.
Bit 23: Temperature outside the limit values.
Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

Remedy: - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

F32142 (N, A) Encoder 2: Battery voltage fault

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.

Remedy: Replace battery.

F32150 (N, A) Encoder 2: Initialization error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
Encoder malfunction.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).
Remedy: - check that p0404 is correctly set.
- check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable.
- if relevant, note additional fault messages that describe the fault in detail.

F32151 (N, A) Encoder 2: Encoder speed for initialization AB too high

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The encoder speed is too high while initializing the Sensor Module.
Remedy: Reduce the speed of the encoder accordingly during initialization.
If necessary, de-activate monitoring (p0437.29).
See also: p0437 (Sensor Module configuration extended)

F32152 (N, A) Encoder 2: Maximum input frequency exceeded

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: PULSE INHIBIT
Cause: The maximum input frequency of the encoder evaluation has been exceeded.
Fault value (r0949, interpret decimal):
Actual input frequency in Hz.
See also: p0408 (Rotary encoder pulse number)
Remedy: - reduce the speed.
- Use an encoder with a lower pulse number (p0408).

F32153 (N, A) Encoder 2: Identification error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: An error has occurred when identifying the encoder (waiting) p0400 = 10100.
The connected encoder was not able to be identified.
Fault value (r0949, interpret hexadecimal):
Bit 0: Data length incorrect.
See also: p0400 (Encoder type selection)
Remedy: Manually configure the encoder according to the data sheet.

F32160 (N, A) Encoder 2: Analog sensor channel A failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE)
Acknowledge: PULSE INHIBIT
Cause: The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4673).
3: The absolute value of the input voltage has exceeded the range limit (p4676).

Remedy: For fault value = 1:
- check the output voltage of the analog sensor.

For fault value = 2:
- check the voltage setting for each encoder period (p4673).

For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

F32161 (N, A) Encoder 2: Analog sensor channel B failed

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause: The input voltage of the analog sensor is outside the permissible limits.

Fault value (r0949, interpret decimal):

1: Input voltage outside detectable measuring range.

2: Input voltage outside the measuring range set in (p4675).

3: The absolute value of the input voltage has exceeded the range limit (p4676).

Remedy: For fault value = 1:
- check the output voltage of the analog sensor.

For fault value = 2:
- check the voltage setting for each encoder period (p4675).

For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

F32163 (N, A) Encoder 2: Analog sensor position value exceeds limit value

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (IASC/DCBRK, NONE)

Acknowledge: PULSE INHIBIT

Cause: The position value has exceeded the permissible range of -0.5 ... +0.5.

Fault value (r0949, interpret decimal):

1: Position value from the LVDT sensor.

2: Position value from the encoder characteristic.

Remedy: For fault value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.

For fault value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

A32400 (F, N) Encoder 2: Alarm threshold zero mark distance error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.

For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.

The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).

Alarm value (r2124, interpret decimal):

Last measured zero mark distance in increments (4 increments = 1 encoder pulse).

The sign designates the direction of motion when detecting the zero mark distance.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

A32401 (F, N) Encoder 2: Alarm threshold zero mark failed

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

F32405 (N, A) Encoder 2: Temperature in the encoder evaluation inadmissible

Message class: Overtemperature of the electronic components (6)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an inadmissible temperature.
The fault threshold is 125 ° C.
Fault value (r0949, interpret decimal):
Measured board/module temperature in 0.1 °C.

Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

A32407 (F, N) Encoder 2: Function limit reached

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The encoder has reached one of its function limits. A service is recommended.
Alarm value (r2124, interpret decimal):
1: Incremental signals
3: Absolute track
4: Code connection

Remedy: Perform service. Replace the encoder if necessary.
Note:
The actual functional reserve of an encoder can be displayed via r4651.
See also: p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)

A32410 (F, N) Encoder 2: Serial communications

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.

Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

A32411 (F, N) Encoder 2: Absolute encoder signals internal alarms

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The absolute encoder fault word includes alarm bits that have been set.
Alarm value (r2124, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.
yyyy = 1:
Bit 0: Signal amplitude outside the control range.
Bit 1: Error multiturn interface
Bit 2: Internal data error (singleturn/multiturn not with single steps).
Bit 3: Error EEPROM interface.
Bit 4: SAR converter error.
Bit 5: Fault for the register data transfer.
Bit 6: Internal error identified at the error pin (nErr).
Bit 7: Temperature threshold exceeded or fallen below.

Remedy: Replace encoder.

A32412 (F, N) Encoder 2: Error bit set in the serial protocol

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The encoder sends a set error bit via the serial protocol.
Alarm value (r2124, interpret binary):
Bit 0: Fault bit in the position protocol.
Bit 1: Alarm bit in the position protocol.

Remedy:
- carry out a POWER ON (switch-off/switch-on) for all components.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

A32414 (F, N) Encoder 2: Amplitude error track C or D (C^2 + D^2)

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track D (16 bits with sign).
xxxx = Signal level, track C (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.

Note:
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

Remedy:
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- check the Hall sensor box.

N32415 (F, A) Encoder 2: Amplitude alarm track A or B (A^2 + B^2)

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (root of A^2 + B^2) for encoder 2 exceeds the permissible tolerance.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 230 mV (observe the frequency response of the encoder).
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
Note when using the internal resolver evaluation (CU250S):
The nominal signal level is at 1300 mV. The response threshold is < 650 mV.
A signal level of 1300 mV peak value corresponds to the numerical value 16F3 hex = 5875 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

Remedy:
- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- if the coding disk is soiled or the lighting aged, replace the encoder.

A32418 (F, N) Encoder 2: Speed difference per sampling rate exceeded

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
See also: p0492 (Maximum speed difference per sampling cycle)

Remedy:
- check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

A32419 (F, N) Encoder 2: Track A or B outside tolerance

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude/phase/offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxxx1: Minimum of the offset correction, track B
xxxx2: Maximum of the offset correction, track B
xxx1x: Minimum of the offset correction, track A
xxx2x: Maximum of the offset correction, track A
xx1xx: Minimum of the amplitude correction, track B/A
xx2xx: Maximum of the amplitude correction, track B/A
x1xxx: Minimum of the phase error correction
x2xxx: Maximum of the phase error correction
1xxxx: Minimum of the cubic correction
2xxxx: Maximum of the cubic correction

Remedy: - check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

A32421 (F, N) Encoder 2: Coarse position error

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: For the actual value sensing, an error was detected. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.
Alarm value (r2124, interpret decimal):
3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.

Remedy: For alarm value = 3:
- For a standard encoder with cable, contact the manufacturer where relevant.
- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A* and B with B*) or, for a programmable encoder, check the zero offset of the position.

A32422 (F, N) Encoder 2: Pulses per revolution square-wave encoder outside tolerance bandwidth

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The measured zero mark distance does not correspond to the parameterized zero mark distance.
This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.
The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).
Alarm value (r2124, interpret decimal):
accumulated differential pulses in encoder pulses.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

A32429 (F, N) Encoder 2: Position difference hall sensor/track C/D and A/B too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
Alarm value (r2124, interpret decimal):
For track C/D, the following applies:
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).
For Hall signals, the following applies:
Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

Remedy: - track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

A32431 (F, N) Encoder 2: Deviation position incremental/absolute too large

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.
For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.
Alarm value (r2124, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- Clean coding disk or remove strong magnetic fields.

A32432 (F, N) Encoder 2: Rotor position adaptation corrects deviation

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: For track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected.
Alarm value (r2124, interpret decimal):
Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

Remedy: - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

A32442 (F, N) Encoder 2: Battery voltage pre-alarm

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.
Remedy: Replace battery.

A32443 (F, N) Encoder 2: Unipolar CD signal level outside specification

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The unipolar level (CP/CN or DP/DN) for encoder 2 is outside the permissible tolerance.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Either CP or CN outside the tolerance.
Bit 16 = 1: Either DP or DN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).
Remedy: - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- are the C/D tracks connected correctly (have the signal lines CP and CN or DP and DN been interchanged)?
- replace the encoder cable.

A32460 (N) Encoder 2: Analog sensor channel A failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside measuring range set in p4673.
3: The absolute value of the input voltage has exceeded the range limit (p4676).
Remedy: For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4673).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

A32461 (N) Encoder 2: Analog sensor channel B failed

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).

Remedy: For alarm value = 1:
- check the output voltage of the analog sensor.

For alarm value = 2:
- check the voltage setting for each encoder period (p4675).

For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

A32462 (N) Encoder 2: Analog sensor no channel active

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: NONE
Acknowledge: NONE
Cause: Channel A and B are not activated for the analog sensor.
Remedy:
- activate channel A and/or channel B (p4670).
- check the encoder configuration (p0404.17).

See also: p4670 (Analog sensor configuration)

A32463 (N) Encoder 2: Analog sensor position value exceeds limit value

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: The position value has exceeded the permissible range of -0.5 ... +0.5.
Alarm value (r2124, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.
Remedy: For alarm value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.

For alarm value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

A32470 (F, N) Encoder 2: Soiling detected

Message class: Actual position/speed value incorrect or not available (11)
Reaction: NONE
Acknowledge: NONE
Cause: In the case of the alternative encoder system interface on the Sensor Module Cabinet 30 (SMC30), encoder soiling is signaled via a 0 signal at terminal X521.7.
Remedy:
- check the plug connections.
- replace the encoder or encoder cable.

F32500 (N, A) Encoder 2: Position tracking traversing range exceeded

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.
For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.
For p0411.3 = 1, the maximum traversing range for the configured linear axis is pre-set (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).
Remedy: The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- de-select encoder commissioning (p0010 = 0).

The fault should then be acknowledged and the absolute encoder adjusted.

F32501 (N, A) Encoder 2: Position tracking encoder position outside tolerance window

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When switched off, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.
Fault value (r0949, interpret decimal):
Deviation (difference) to the last encoder position in increments of the absolute value.
The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r0477.
See also: p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)

Remedy: Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- de-select encoder commissioning (p0010 = 0).
The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also: p0010 (Drive commissioning parameter filter), p2507 (LR absolute encoder adjustment status)

F32502 (N, A) Encoder 2: Encoder with measuring gear without valid signals

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The encoder with measuring gear no longer provides any valid signals.

Remedy: It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.

F32503 (N, A) Encoder 2: Position tracking cannot be reset

Message class: Actual position/speed value incorrect or not available (11)

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The position tracking for the measuring gear cannot be reset.

Remedy: The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- de-select encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

F32802 (N, A) Encoder 2: Time slice overflow

Message class: Hardware/software error (1)

Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A time slice overflow has occurred in encoder 2.
Fault value (r0949, interpret hexadecimal):
yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved
x = 9:
Time slice overflow of the fast (current controller clock cycle) time slice.
x = A:
Time slice overflow of the average time slice.
x = C:
Time slice overflow of the slow time slice.
yx = 3E7:
Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation).

Remedy: Increase the current controller sampling time
Note:
For a current controller sampling time = 31.25 µs, use an SMx20 with order number 6SL3055-0AA00-5xA3.

F32805 (N, A) Encoder 2: EEPROM checksum error

Message class: Hardware/software error (1)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
Remedy: Replace the module.

F32850 (N, A) Encoder 2: Encoder evaluation internal software error

Message class: Hardware/software error (1)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Acknowledge: POWER ON
Cause: An internal software error has occurred in the Sensor Module of encoder 2.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.
11000 ... 11499: Descriptive data from EEPROM incorrect.
11500 ... 11899: Calibration data from EEPROM incorrect.
11900 ... 11999: Configuration data from EEPROM incorrect.
12000 ... 12008: communication with analog/digital converter faulted.
16000: DRIVE-CLiQ encoder initialization application error.
16001: DRIVE-CLiQ encoder initialization ALU error.
16002: DRIVE-CLiQ encoder HISI / SISI initialization error.
16003: DRIVE-CLiQ encoder safety initialization error.
16004: DRIVE-CLiQ encoder internal system error.
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

F32899 (N, A) Encoder 2: Unknown fault

Message class: Actual position/speed value incorrect or not available (11)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: A fault occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.
Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

F32905 (N, A) Encoder 2: Parameterization error

Message class: Error in the parameterization / configuration / commissioning procedure (18)
Reaction: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: A parameter of encoder 2 was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).

Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
xxxx = 421:
For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.
yyyy = 0:
No information available.
yyyy = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
yyyy = 2:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.
yyyy = 3:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number < 10000.
yyyy = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.
yyyy = 5:
For SQW encoder, value in p4686 greater than in p0425.
yyyy = 6:
DRIVE-CLiQ encoder cannot be used with this firmware version.
yyyy = 7:
For an SQW encoder, the Xact1 correction (p0437.2) is only permitted with equidistant zero marks.
yyyy = 8:
The motor pole pair width is not supported by the linear scale being used.
yyyy = 9:
The length of the position in the EnDat protocol may be a maximum of 32 bits.
yyyy = 10:
The connected encoder is not supported.
yyyy = 11:
The hardware does not support track monitoring.

Remedy:
- check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.
- re parameter number = 314:
- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

A32915 (F, N) Encoder 2: Configuration error

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: The configuration for encoder 2 is incorrect.
Alarm value (r2124, interpret decimal):
1:
Re-parameterization between fault/alarm is not permissible.
419:
When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.

Remedy: For alarm value = 1:
No re-parameterization between fault/alarm.
For alarm value = 419:
Reduce the fine resolution (p0419) or de-activate the monitoring (p0437.25), if the complete multiturn range is not required.

A32930 (N) Encoder 2: Data logger has saved data

Message class: Error in the parameterization / configuration / commissioning procedure (18)

Reaction: NONE

Acknowledge: NONE

Cause: For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.
The diagnostics data is saved in the following folder:
/USER/SINAMICS/DATA/SMTRC00.BIN
...
/USER/SINAMICS/DATA/SMTRC07.BIN
/USER/SINAMICS/DATA/SMTRCIDX.TXT
The following information is contained in the TXT file:
- Display of the last written BIN file.
- Number of write operations that are still possible (from 10000 downwards).
Note:
Only Siemens can evaluate the BIN files.

Remedy: Not necessary.
The alarm disappears automatically.
The data logger is ready to record the next fault case.

F32950 Encoder 2: Internal software error

Message class: Hardware/software error (1)

Reaction: OFF1 (OFF2)

Acknowledge: POWER ON

Cause: An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.

Remedy: - if necessary, upgrade the firmware in the Sensor Module to a later version.
- contact Technical Support.

A32999 (F, N) Encoder 2: Unknown alarm

Message class: Actual position/speed value incorrect or not available (11)

Reaction: NONE

Acknowledge: NONE

Cause: A alarm has occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

Remedy: - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

F34851 VSM DRIVE-CLiQ (CU): Sign-of-life missing

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.

Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Upgrade the firmware of the component involved.

F34860 VSM DRIVE-CLiQ (CU): Telegram error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F34875 VSM DRIVE-CLiQ (CU): Supply voltage failed

Message class: Supply voltage fault (undervoltage) (3)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

F34885 VSM DRIVE-CLiQ (CU): Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: - check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F34886 VSM DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Carry out a POWER ON.

F34887 VSM DRIVE-CLiQ (CU): Component fault

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component (Voltage Sensing Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F34895 VSM DRIVE-CLiQ (CU): Alternating cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F34896 VSM DRIVE-CLiQ (CU): Inconsistent component properties

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowledge: IMMEDIATELY
Cause: The properties of the DRIVE-CLiQ component (Voltage Sensing Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

Remedy: - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

F35851 TM DRIVE-CLiQ (CU): Sign-of-life missing

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: Upgrade the firmware of the component involved.

F35860 TM DRIVE-CLiQ (CU): Telegram error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.

25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F35875 TM DRIVE-CLiQ (CU): Supply voltage failed

Message class: Supply voltage fault (undervoltage) (3)

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

F35885 TM DRIVE-CLiQ (CU): Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F35886 TM DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: Carry out a POWER ON.

F35887 TM DRIVE-CLiQ (CU): Component fault

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component (Terminal Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F35895 TM DRIVE-CLiQ (CU): Alternating cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F35896 TM DRIVE-CLiQ (CU): Inconsistent component properties

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component (Terminal Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

Remedy: - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

F35950 TM: Internal software error

Message class: Hardware/software error (1)

Reaction: OFF2 (NONE)

Acknowledge: POWER ON

Cause: An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.

Remedy: - if necessary, upgrade the firmware in the Terminal Module to a later version.
- contact Technical Support.

F36851 Hub DRIVE-CLiQ (CU): Sign-of-life missing

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Upgrade the firmware of the component involved.

F36860 Hub DRIVE-CLiQ (CU): Telegram error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.

6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

F36875 HUB DRIVE-CLiQ (CU): Supply voltage failed

Message class: Supply voltage fault (undervoltage) (3)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

F36885 Hub DRIVE-CLiQ (CU): Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.

34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- check the supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

F36886 Hub DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: Carry out a POWER ON.

F36887 Hub DRIVE-CLiQ (CU): Component fault

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F36895 Hub DRIVE-CLiQ (CU): Alternating cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F36896 Hub DRIVE-CLiQ (CU): Inconsistent component properties

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

Remedy: - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

F40799 CX32: Configured transfer end time exceeded

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The configured transfer end time when transferring the cyclic actual values was exceeded.

Remedy: - carry out a POWER ON (switch-off/switch-on) for all components.
- contact Technical Support.

F40820 CX32 DRIVE-CLiQ: Telegram error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F40825 CX32 DRIVE-CLiQ: Supply voltage failed

Message class: Supply voltage fault (undervoltage) (3)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- check the supply voltage wiring of the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the DRIVE-CLiQ component power supply.

F40835 CX32 DRIVE-CLiQ: Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F40836 CX32 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Carry out a POWER ON (switch-off/switch-on).

F40837 CX32 DRIVE-CLiQ: Component fault

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F40845 CX32 DRIVE-CLiQ: Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Carry out a POWER ON (switch-off/switch-on).
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F40851 CX32 DRIVE-CLiQ (CU): Sign-of-life missing

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: Upgrade the firmware of the component involved.

F40860 CX32 DRIVE-CLiQ (CU): Telegram error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F40875 CX32 DRIVE-CLiQ (CU): Supply voltage failed

Message class: Supply voltage fault (undervoltage) (3)
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: - carry out a POWER ON (switch-off/switch-on).
- check the supply voltage wiring of the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the DRIVE-CLiQ component power supply.

F40885 CX32 DRIVE-CLiQ (CU): Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
Remedy: - check the power supply voltage of the component involved.
- carry out a POWER ON (switch-off/switch-on).
- replace the component involved.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F40886 CX32 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

Message class: Internal (DRIVE-CLiQ) communication error (12)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.

Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Carry out a POWER ON (switch-off/switch-on).

F40887 CX32 DRIVE-CLiQ (CU): Component fault

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy:
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

F40895 CX32 DRIVE-CLiQ (CU): Cyclic data transfer error

Message class: Internal (DRIVE-CLiQ) communication error (12)

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

Remedy: Carry out a POWER ON (switch-off/switch-on).
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

A50001 (F) PROFINET configuration error

Message class: Communication error to the higher-level control system (9)

Reaction: NONE

Acknowledge: NONE

Cause: A PROFINET controller attempts to establish a connection using an incorrect configuring telegram. The "Shared Device" function has been activated (p8929 = 2).
Alarm value (r2124, interpret decimal):
10: A/F-CPU configures mixed PZD/PROFIsafe telegram.
13: F-CPU and PROFIsafe is not activated (p9601.3).
15: PROFIsafe telegram of the F-CPU does not match the setting in p9501.30.
See also: p9601 (SI enable functions integrated in the drive (processor 1))

Remedy: Check the configuration of the PROFINET controllers as well as the p8929 setting.

A50010 (F) PROFINET: Consistency error affecting adjustable parameters

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: A consistency error was detected when activating the configuration (p8925) for the PROFINET interface. The currently set configuration has not been activated.
Alarm value (r2124, interpret decimal):
0: general consistency error
1: error in the IP configuration (IP address, subnet mask or standard gateway).
2: Error in the station names.
3: DHCP was not able to be activated, as a cyclic PROFINET connection already exists.
4: a cyclic PROFINET connection is not possible as DHCP is activated.
Note:
DHCP: Dynamic Host Configuration Protocol
See also: p8920 (PN Name of Station), p8921 (PN IP address), p8922 (PN Def Gateway), p8923 (PN Subnet Mask), p8924 (PN DHCP Mode)
Remedy: - check the required interface configuration (p8920 and following), correct if necessary, and activate (p8925).
or
- Reconfigure the station via the "Edit Ethernet node" screen form (e.g. with STARTER commissioning software).
See also: p8925 (PN interface configuration)

A50011 (F) Ethernet/IP: configuration error

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: An EtherNet/IP controller attempts to establish a connection using an incorrect configuring telegram.
The telegram length set in the controller does not match the parameterization in the drive device.
Remedy: Check the set telegram length.
For p0922 not equal to 999, then the length of the selected telegram applies.
For p0922 = 999, the maximum interconnected PZD (r2067) applies.
See also: p0922 (PROFIdrive PZD telegram selection), r2067 (PZD maximum interconnected)

A50020 (F) PROFINET: Second controller missing

Message class: Communication error to the higher-level control system (9)
Reaction: NONE
Acknowledge: NONE
Cause: The PROFINET function "Shared Device" has been activated (p8929 = 2). However, only the connection to a PROFINET controller is present.
Remedy: Check the configuration of the PROFINET controllers as well as the p8929 setting.

F50510 FBLOCKS: Logon of the run-time group rejected

Message class: General drive fault (19)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: When the run-time groups of the free function blocks attempted to log on with the sampling time management, the logon of at least one run-time group was rejected.
Too many different hardware sampling times may have been assigned to the free function blocks.
Remedy: - check number of available hardware sampling times (T_sample < 8 ms) (r7903).

F50511 FBLOCKS: Memory no longer available for free function blocks

Message class: General drive fault (19)
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: When the free function blocks were activated, more memory was requested than was available on the Control Unit.

Remedy: Not necessary.

A50513 (F) FBLOCKS: Run sequence value already assigned

Message class: General drive fault (19)
Reaction: NONE
Acknowledge: NONE
Cause: An attempt was made to assign a run sequence value already assigned to a function block on this drive object to another additional function block on the same drive object. A run sequence value can only be precisely assigned to one function block on one drive object.
Remedy: Set another value that is still available on this drive object for the run sequence.

A50517 FBLOCKS: Int. meas. active

Message class: General drive fault (19)
Reaction: NONE
Acknowledge: NONE
Cause: A Siemens internal measurement has been activated.
Remedy: Carry out a POWER ON (switch-off/switch-on) for the Control Unit involved.

F50518 FBLOCKS: Sampling time of free run-time group differs at download

Message class: General drive fault (19)
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: In the STARTER/SCOUT project that was downloaded, the hardware sampling time of a free run-time group (1 <= p20000[i] <= 256) was set to a value that was either too low or too high.
The sampling time must be between 1 ms and the value r20003 - r20002.
If the sampling time of the selected free run-time group is < 1 ms, the equivalent value of 1 ms is used.
If the value >= r20003, then the sampling time is set to the next higher or the same software sampling time >= r21003.
Fault value (r0949, interpret decimal):
Number of the p20000 index of the run-time group where the sampling time is incorrectly set.
Number of the run-time group = fault value + 1
Remedy: - correctly set the sampling time of the run-time group.
- if required, take all of the blocks from the run-time group.
Note:
Fault F50518 only detects an incorrectly parameterized run-time group. If, after correcting p20000[i] in the project, this error occurs again at download, then the run-time group involved should be identified using the fault value (r0949) and the sampling time correctly set.

Appendix

A

Content

A.1 ASCII table (characters that can be displayed)

The following table includes the decimal and hexadecimal notation of ASCII characters that can be displayed (printable).

Table A-1 ASCII table (characters that can be displayed)

Character	Decimal	Hexadecimal	Meaning
	32	20	Space
!	33	21	Exclamation mark
"	34	22	Quotation mark
#	35	23	Number sign
$	36	24	Dollar
%	37	25	Percent
&	38	26	Ampersand
’	39	27	Apostrophe, closing single quotation mark
(	40	28	Opening parenthesis
)	41	29	Closing parenthesis
*	42	2A	Asterisk
+	43	2B	Plus
,	44	2C	Comma
-	45	2D	Hyphen, minus
.	46	2E	Period, decimal point
/	47	2F	Slash, slant
0	48	30	Digit 0
1	49	31	Digit 1
2	50	32	Digit 2
3	51	33	Digit 3
4	52	34	Digit 4
5	53	35	Digit 5
6	54	36	Digit 6
7	55	37	Digit 7
8	56	38	Digit 8
9	57	39	Digit 9
:	58	3A	Colon
;	59	3B	Semicolon
<	60	3C	Less than
=	61	3D	Equals
>	62	3E	Greater than
?	63	3F	Question mark
@	64	40	Commercial At

Table A-1 ASCII table (characters that can be displayed), continued

Character	Decimal	Hexadecimal	Meaning
A	65	41	Capital letter A
B	66	42	Capital letter B
C	67	43	Capital letter C
D	68	44	Capital letter D
E	69	45	Capital letter E
F	70	46	Capital letter F
G	71	47	Capital letter G
H	72	48	Capital letter H
I	73	49	Capital letter I
J	74	4A	Capital letter J
K	75	4B	Capital letter K
L	76	4C	Capital letter L
M	77	4D	Capital letter M
N	78	4E	Capital letter N
O	79	4F	Capital letter O
P	80	50	Capital letter P
Q	81	51	Capital letter Q
R	82	52	Capital letter R
S	83	53	Capital letter S
T	84	54	Capital letter T
U	85	55	Capital letter U
V	86	56	Capital letter V
W	87	57	Capital letter W
X	88	58	Capital letter X
Y	89	59	Capital letter Y
Z	90	5A	Capital letter Z
[	91	5B	Opening bracket
\	92	5C	Backslash
]	93	5D	Closing bracket
^	94	5E	Circumflex
_	95	5F	Underline
‘	96	60	Opening single quotation mark
a	97	61	Small letter a
b	98	62	Small letter b
c	99	63	Small letter c
d	100	64	Small letter d

Table A-1 ASCII table (characters that can be displayed), continued

Character	Decimal	Hexadecimal	Meaning
e	101	65	Small letter e
f	102	66	Small letter f
g	103	67	Small letter g
h	104	68	Small letter h
i	105	69	Small letter i
j	106	6A	Small letter j
k	107	6B	Small letter k
l	108	6C	Small letter l
m	109	6D	Small letter m
n	110	6E	Small letter n
o	111	6F	Small letter o
p	112	70	Small letter p
q	113	71	Small letter q
r	114	72	Small letter r
s	115	73	Small letter s
t	116	74	Small letter t
u	117	75	Small letter u
v	118	76	Small letter v
w	119	77	Small letter w
x	120	78	Small letter x
y	121	79	Small letter y
z	122	7A	Small letter z
{	123	7B	Opening brace
|	124	7C	Vertical line
}	125	7D	Closing brace
~	126	7E	Tilde

A.2 List of abbreviations

Note

The following list of abbreviations includes all abbreviations and their meanings used in the entire SINAMICS family of drives.

Abbreviation	Source of abbreviation	Significance
A		
A…	Alarm	Warning
AC	Alternating Current	Alternating current
ADC	Analog Digital Converter	Analog-Digital converter
AI	Analog Input	Analog input
AIM	Active Interface Module	Active Interface Module
ALM	Active Line Module	Active Line Module
AO	Analog Output	Analog output
AOP	Advanced Operator Panel	Advanced Operator Panel
APC	Advanced Positioning Control	Advanced Positioning Control
AR	Automatic Restart	Automatic restart
ASC	Armature Short Circuit	Armature short-circuit
ASCII	American Standard Code for Information Interchange	American coding standard for the exchange of information
AS-i	AS-Interface (Actuator Sensor Interface)	AS interface (open bus system in automation technology)
ASM	Asynchronmotor	Induction motor
B		
BB	Betriebsbedingung	Operation condition
BERO	-	Contactless proximity switch
BI	Binector Input	Binector input
BIA	Berufsgenossenschaftliches Institut für Arbeitssicherheit	BG-Institute for Occupational Safety and Health
BICO	Binector Connector Technology	Binector connector technology
BLM	Basic Line Module	Basic Line Module
BO	Binector Output	Binector output
BOP	Basic Operator Panel	Basic operator panel
C		
C	Capacitance	Capacitance
C…	-	Safety message
CAN	Controller Area Network	Serial bus system
CBC	Communication Board CAN	Communication Board CAN
CBE	Communication Board Ethernet	PROFINET communication module (Ethernet)
CD	Compact Disc	Compact disk
CDS	Command Data Set	Command data set
CF Card	CompactFlash Card	CompactFlash card
CI	Connector Input	Connector input

Abbreviation	Source of abbreviation	Significance
CLC	Clearance Control	Clearance control
CNC	Computer Numerical Control	Computer-supported numerical control
CO	Connector Output	Connector output
CO/BO	Connector Output / Binector Output	Connector Output / Binector Output
COB ID	CAN Object-Identification	CAN Object-Identification
CoL	Certificate of License	Certificate of License
COM	Common contact of a changeover relay	Center contact of a changeover contact
COMM	Commissioning	Startup
CP	Communication Processor	Communications processor
CPU	Central Processing Unit	Central processing unit
CRC	Cyclic Redundancy Check	Cyclic redundancy check
CSM	Control Supply Module	Control Supply Module
CU	Control Unit	Control Unit
CUA	Control Unit Adapter	Control Unit Adapter
CUD	Control Unit DC	Control Unit DC
D		
DAC	Digital Analog Converter	Digital analog converter
DC	Direct Current	DC current
DCB	Drive Control Block	Drive Control Block
DCBRK	DC Brake	DC braking
DCC	Drive Control Chart	Drive Control Chart
DCN	Direct Current Negative	Direct current negative
DCP	Direct Current Positive	Direct current positive
DDC	Dynamic Drive Control	Dynamic Drive Control
DDS	Drive Data Set	Drive Data Set
DI	Digital Input	Digital input
DI/DO	Digital Input / Digital Output	Digital input/output, bidirectional
DMC	DRIVE-CLiQ Hub Module Cabinet	DRIVE-CLiQ Hub Module Cabinet
DME	DRIVE-CLiQ Hub Module External	DRIVE-CLiQ Hub Module External
DMM	Double Motor Module	Double Motor Module
DO	Digital Output	Digital output
DO	Drive Object	Drive object
DP	Decentralized Peripherals	Distributed I/O
DPRAM	Dual-Port Random Access Memory	Dual-Port Random Access Memory
DQ	DRIVE-CLiQ	DRIVE-CLiQ
DRAM	Dynamic Random Access Memory	Dynamic Random Access Memory
DRIVE-CLiQ	Drive Component Link with IQ	Drive Component Link with IQ
DSC	Dynamic Servo Control	Dynamic Servo Control
DTC	Digital Time Clock	Timer
E		
EASC	External Armature Short-Circuit	External armature short-circuit
EDS	Encoder Data Set	Encoder data set

Abbreviation	Source of abbreviation	Significance
EEPROM	Electrically Erasable Programmable Read-Only Memory	Electrically Erasable Programmable Read-Only-Memory
EGB	Elektrostatisch gefährdete Baugruppen	Electrostatic sensitive devices
ELCB	Earth Leakage Circuit-Breaker	Residual current operated circuit breaker
ELP	Earth Leakage Protection	Ground-fault monitoring
EMC	Electromagnetic Compatibility	Electromagnetic compatibility
EMF	Electromotive Force	Electromotive force
EMK	Elektromotorische Kraft	Electromotive force
EMV	Elektromagnetische Verträglichkeit	Electromagnetic compatibility
EN	Europäische Norm	European Standard
EnDat	Encoder-Data-Interface	Encoder interface
EP	Enable Pulses	Pulse enable
EPOS	Einfachpositionierer	Basic positioner
ES	Engineering System	Engineering system
ESB	Ersatzschaltbild	Equivalent circuit diagram
ESD	Electrostatically Sensitive Devices	Electrostatic sensitive devices
ESM	Essential Service Mode	Essential service mode
ESR	Extended Stop and Retract	Extended stop and retract
F		
F…	Fault	Fault
FAQ	Frequently Asked Questions	Frequently Asked Questions
FBLOCKS	Free Blocks	Free function blocks
FCC	Function control chart	Function control chart
FCC	Flux Current Control	Flux current control
FD	Function Diagram	Function diagram
F-DI	Fail-safe Digital Input	Failsafe digital input
F-DO	Fail-safe Digital Output	Fail-safe digital output
FEPROM	Flash-EPROM	Non-volatile write and read memory
FG	Function Generator	Function Generator
FI	-	Fault current
FOC	Fiber-Optic Cable	Fiber-optic cable
FP	Funktionsplan	Function diagram
FPGA	Field Programmable Gate Array	Field Programmable Gate Array
FW	Firmware	Firmware
G		
GB	Gigabyte	Gigabyte
GC	Global Control	Global control telegram (broadcast telegram)
GND	Ground	Reference potential for all signal and operating voltages, usually defined as 0 V (also referred to as M)
GSD	Gerätestammdatei	Generic Station Description: Describes the features of a PROFIBUS slave
GSV	Gate Supply Voltage	Gate supply voltage
GUID	Globally Unique Identifier	Globally Unique Identifier

Abbreviation	Source of abbreviation	Significance
H		
HF	High Frequency	High frequency
HFD	Hochfrequenzdrossel	Radio frequency reactor
HLA	Hydraulic Linear Actuator	Hydraulic linear actuator
HLG	Hochlaufgeber	Ramp-function Generator
HM	Hydraulic Module	Hydraulic Module
HMI	Human Machine Interface	Human Machine Interface
HTL	High-Threshold Logic	Logic with high interference threshold
HW	Hardware	Hardware
I		
i. V.	In Vorbereitung	Under development: This property is currently not available
I/O	Input/Output	Input/output
I2C	Inter-Integrated Circuit	Internal serial data bus
IASC	Internal Armature Short-Circuit	Internal armature short-circuit
IBN	Inbetriebnahme	Startup
ID	Identifier	Identification
IE	Industrial Ethernet	Industrial Ethernet
IEC	International Electrotechnical Commission	International Electrotechnical Commission
IF	Interface	Interface
IGBT	Insulated Gate Bipolar Transistor	Insulated gate bipolar transistor
IGCT	Integrated Gate-Controlled Thyristor	Semiconductor power switch with integrated control electrode
IL	Impulslöschung	Pulse suppression
IP	Internet Protocol	Internet protocol
IPO	Interpolator	Interpolator
IT	Isolé Terre	Non-grounded three-phase line supply
IVP	Internal Voltage Protection	Internal voltage protection
J		
JOG	Jogging	Jogging
K		
KDV	Kreuzweiser Datenvergleich	Data cross-check
KHP	Know-How Protection	Know-how protection
KIP	Kinetische Pufferung	Kinetic buffering
Kp	-	Proportional gain
KTY84	-	Temperature sensor
L		
L	-	Symbol for inductance
LED	Light Emitting Diode	Light emitting diode
LIN	Linearmotor	Linear motor
LR	Lageregler	Position controller
LSB	Least Significant Bit	Least Significant Bit
LSC	Line-side converter	Line-side converter

Abbreviation	Source of abbreviation	Significance
LSS	Line-Side Switch	Line-side switch
LU	Length Unit	Length unit
LWL	Lichtwellenleiter	Fiber-optic cable
M		
M	-	Symbol for torque
M	Masse	Reference potential for all signal and operating voltages, usually defined as 0 V (also referred to as GND)
MB	Megabyte	Megabyte
MCC	Motion Control Chart	Motion Control Chart
MDI	Manual Data Input	Manual data input
MDS	Motor Data Set	Motor data set
MLFB	Maschinenlesbare Fabrikatebezeichnung	Machine-readable product code
MM	Motor Module	Motor Module
MMC	Man-Machine Communication	Man-machine communication
MMC	Micro Memory Card	Micro memory card
MSB	Most Significant Bit	Most significant bit
MSC	Motor Side Converter	Motor-side converter
MSCY_C1	Master Slave Cycle Class 1	Cyclic communication between master (class 1) and slave
MSC	Motorstromrichter	Motor-side converter
MT	Messtaster	Probe
N		
N. C.	Not Connected	Not connected
N…	No Report	No report or internal message
NAMUR	Normenarbeitsgemeinschaft für Mess- und Regeltechnik in der chemischen Industrie	Standardization association for measurement and control in chemical industries
NC	Normally Closed (contact)	NC contacts
NC	Numerical Control	Numerical control
NEMA	National Electrical Manufacturers Association	Standardization association in USA (United States of America)
NM	Nullmarke	Zero mark
NO	Normally Open (contact)	NO contacts
NSR	Netzstromrichter	Line-side converter
NVRAM	Non-Volatile Random Access Memory	Non-volatile read/write memory
O		
OA	Open Architecture	Software component (technology package) which provides additional functions for the SINAMICS drive system
OAIF	Open Architecture Interface	Version of the SINAMICS firmware as of which the OA-application can be used
OASP	Open Architecture Support Package	Expands the STARTER commissioning tool by the corresponding OA-application
OC	Operating Condition	Operation condition
OEM	Original Equipment Manufacturer	Original equipment manufacturer

Abbreviation	Source of abbreviation	Significance
OLP	Optical Link Plug	Bus connector for fiber-optic cable
OMI	Option Module Interface	Option Module Interface
P		
p…	-	Adjustable parameters
P1	Processor 1	CPU 1
P2	Processor 2	CPU 2
PB	PROFIBUS	PROFIBUS
PcCtrl	PC Control	Master control
PD	PROFIdrive	PROFIdrive
PDS	Power Unit Data Set	Power unit data set
PE	Protective Earth	Protective ground
PELV	Protective Extra-Low Voltage	Safety extra-low voltage
PFH	Probability of dangerous failure per hour	Probability of dangerous failure per hour
PG	Programmiergerät	Programming device
PI	Proportional integral	Proportional integral
PID	Proportional integral differential	Proportional integral differential
PLC	Programmable Logic Controller	Programmable logic controller
PLL	Phase-locked loop	Phase-locked loop
PM	Power Module	Power Module
PMSM	Permanent-Magnet Synchronous Motor	Permanent-magnet synchronous motor
PN	PROFINET	PROFINET
PNO	PROFIBUS Nutzerorganisation	PROFIBUS user organization
PPI	Point-to-Point Interface	Point-to-point interface
PRBS	Pseudo Random Binary Signal	White noise
PROFIBUS	Process Field Bus	Serial data bus
PS	Power Supply	Power supply
PSA	Power Stack Adapter	Power Stack Adapter
PT1000	-	Temperature sensor
PTC	Positive Temperature Coefficient	Positive temperature coefficient
PTP	Point-To-Point	Point-to-point
PWM	Pulse Width Modulation	Pulse width modulation
PZD	Prozessdaten	Process data
Q		
R		
r…	-	Display parameters (read only)
RAM	Random Access Memory	Speicher zum Lesen und Schreiben
RCCB	Residual Current Circuit Breaker	Residual current operated circuit breaker
RCD	Residual Current Device	Residual current operated circuit breaker
RCM	Residual Current Monitor	Residual current monitor
REL	Reluctance motor textile	Reluctance motor textile
RESM	Reluctance Synchronous Motor	Synchronous reluctance motor
RFG	Ramp-Function Generator	Ramp-function Generator

Abbreviation	Source of abbreviation	Significance
RJ45	Registered Jack 45	Term for an 8-pin socket system for data transmission with shielded or non-shielded multi-wire copper cables
RKA	Rückkühlanlage	Cooling unit
RLM	Renewable Line Module	Renewable Line Module
RO	Read Only	Read only
ROM	Read-Only Memory	Read-only memory
RPDO	Receive Process Data Object	Receive Process Data Object
RS232	Recommended Standard 232	Interface standard for a cable-connected serial data transmission between a sender and receiver (also known as EIA232)
RS485	Recommended Standard 485	Interface standard for a cable-connected differential, parallel, and/or serial bus system (data transmission between a number of senders and receivers, also known as EIA485)
RTC	Real-Time Clock	Real-time clock
RZA	Raumzeigerapproximation	Space-vector approximation
S		
S1	-	Continuous operation
S3	-	Intermittent duty
SAM	Safe Acceleration Monitor	Safe acceleration monitoring
SBC	Safe Brake Control	Safe brake control
SBH	Sicherer Betriebshalt	Safe operating stop
SBR	Safe Brake Ramp	Safe brake ramp monitoring
SBT	Safe Brake Test	Safe brake test
SCA	Safe Cam	Safe cam
SCC	Safety Control Channel	Safety Control Channel
SD Card	SecureDigital Card	Secure digital memory card
SDC	Standard Drive Control	Standard Drive Control
SDI	Safe Direction	Safe motion direction
SE	Sicherer Software-Endschalter	Safe software limit switch
SESM	Separately Excited Synchronous Motor	Separately excited synchronous motor
SG	Sicher reduzierte Geschwindigkeit	Safely-limited speed
SGA	Sicherheitsgerichteter Ausgang	Safety-related output
SGE	Sicherheitsgerichteter Eingang	Safety-related input
SH	Sicherer Halt	Safe stop
SI	Safety Integrated	Safety Integrated
SIC	Safety Info Channel	Safety Info Channel
SIL	Safety Integrity Level	Safety Integrity Level
SLM	Smart Line Module	Smart Line Module
SLP	Safely Limited Position	Safely Limited Position
SLS	Safely-Limited Speed	Safely-limited speed
SLVC	Sensorless Vector Control	Sensorless vector control
SM	Sensor Module	Sensor Module

Abbreviation	Source of abbreviation	Significance
SMC	Sensor Module Cabinet	Sensor Module Cabinet
SME	Sensor Module External	Sensor Module External
SMI	SINAMICS Sensor Module Integrated	SINAMICS Sensor Module Integrated
SMM	Single Motor Module	Single Motor Module
SN	Sicherer Software-Nocken	Safe software cam
SOS	Safe Operating Stop	Safe operating stop
SP	Service Pack	Service pack
SP	Safe Position	Safe position
SPC	Setpoint Channel	Setpoint channel
SPI	Serial Peripheral Interface	Serial peripheral interface
SPS	Speicherprogrammierbare Steuerung	Programmable logic controller
SS1	Safe Stop 1	Safe Stop 1 (monitored for time and ramp)
SS2	Safe Stop 2	Safe Stop 2
SSI	Synchronous Serial Interface	Synchronous serial interface
SSM	Safe Speed Monitor	Safe feedback from speed monitor
SSP	SINAMICS support package	SINAMICS support package
STO	Safe Torque Off	Safe torque off
STW	Steuerwort	Control word
T		
TB	Terminal Board	Terminal Board
TIA	Totally Integrated Automation	Totally Integrated Automation
TM	Terminal Module	Terminal module
TN	Terre Neutre	Grounded three-phase line supply
Tn	-	Integral time
TPDO	Transmit Process Data Object	Transmit Process Data Object
TT	Terre Terre	Grounded three-phase line supply
TTL	Transistor-Transistor Logic	Transistor-Transistor-Logik
Tv	-	Rate time
U		
UL	Underwriters Laboratories Inc.	Underwriters Laboratories Inc.
UPS	Uninterruptible Power Supply	Uninterruptible power supply
USV	Unterbrechungsfreie Stromversorgung	Uninterruptible power supply
UTC	Universal Time Coordinated	Universal time coordinated
V		
VC	Vector Control	Vector control
Vdc	-	DC-link voltage
VdcN	-	Partial DC-link voltage negative
VdcP	-	Partial DC-link voltage positive
VDE	Verband Deutscher Elektrotechniker	Verband Deutscher Elektrotechniker [Association of German Electrical Engineers]
VDI	Verein Deutscher Ingenieure	Verein Deutscher Ingenieure [Association of German Engineers]

Abbreviation	Source of abbreviation	Significance
VPM	Voltage Protection Module	Voltage Protection Module
Vpp	Volt peak to peak	Volt peak to peak
VSM	Voltage Sensing Module	Voltage Sensing Module
W		
WEA	Wiedereinschaltautomatik	Automatic restart
WZM	Werkzeugmaschine	Machine tool
X		
XML	Extensible Markup Language	Extensible markup language (standard language for Web publishing and document management)
Y		
Z		
ZK	Zwischenkreis	DC link
ZM	Zero Mark	Zero mark
ZSW	Zustandswort	Status Word

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