Faults and Alarms

3

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3.1 Overview of faults and alarms

3.1.1 General information about faults and alarms

Indicating faults and alarms

If a fault occurs, the drive indicates the fault and/or alarm.

The following methods for displaying faults and alarms are available:

- Display via the fault and alarm buffer with PROFIBUS.
- Display online via the commissioning software.

Differences between faults and alarms

The differences between faults and alarms are as follows:

Table 3-1 Differences between faults and alarms

Type	Description
Faults	What happens when a fault occurs? • The appropriate fault reaction is triggered. • Status signal 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 in the alarm buffer. How are alarms eliminated? • Alarms acknowledge themselves. If the cause of the alarm is no longer present, then they automatically reset themselves.

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Fault reactions

The following fault reactions are defined:

Table 3-2 Fault reactions

List	PROFIdrive	Reaction	Description
NONE	-	None	No reaction when a fault occurs. **Note:** When the "Basic positioner" function module is activated (r0108.4 = 1) the following applies: When a fault occurs with fault reaction "NONE", an active traversing task is interrupted and a change is made into tracking mode until the fault has been rectified and acknowledged.
OFF1	ON/ OFF	Brake along the ramp generator deceleration ramp followed by pulse disable	**Closed-loop speed control (p1300 = 20, 21)** • n_set = 0 is input immediately to brake the drive along the deceleration ramp (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. **Closed-loop torque control (p1300 = 23)** • The following applies to closed-loop torque control mode: Reaction as for OFF2. • When changing over to closed-loop control using p1501, the following applies: There is no dedicated braking response. If the actual speed drops below the speed threshold (p1226), or the timer stage (p1227) has expired, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the brake application time (p1217) expires.
OFF2	COAST STOP	Internal/external pulse disable	**Closed-loop 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.

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Table 3-2 Fault reactions, continued

List	PROFIdrive	Reaction	Description
OFF3	QUICK STOP	Brake along the OFF3 deceleration 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 deceleration ramp (p1135). • When zero speed is detected, the motor holding brake (if parameterized) is closed. 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. • Switching on inhibited is activated. **Closed-loop torque control (p1300 = 23)** • Changeover to speed-controlled operation and other reactions as described for speed-controlled operation.
STOP1	-	-	In preparation
STOP2	-	n_set = 0	• n_set = 0 is input immediately to brake the drive along the OFF3 deceleration ramp (p1135). • The drive remains in closed-loop speed control mode.
DCBRAKE	-	-	In preparation
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.

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Acknowledgement of faults

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

Table 3-3 Acknowledgement of faults

Acknowledgment	Description
POWER ON	The fault is acknowledged by a POWER ON process (switch drive unit off and on again). **Note:** If this action has not eliminated the fault cause, the fault is displayed again immediately after power up.
IMMEDIATELY	Faults can be acknowledged at an individual drive object (Points 1 to 3) or at all drive objects (point 4) as follows: 1 Acknowledge by setting parameter: p3981 = 0 --> 1 2 Acknowledge via binector inputs: p2103 BI: 1. Acknowledge faults p2104 BI: 2. Acknowledge faults p2105 BI: 3. Acknowledge faults 3 Acknowledge using PROFIBUS control signal: STW1.7 = 0 --> 1 (edge) 4 Acknowledging all faults p2102 BI: Acknowledging all faults All of the faults at all of the drive objects of the drive system can be acknowledged using this binector input. **Note:** • These faults can also be acknowledged by a POWER ON operation. • If this action has not eliminated the fault cause, the fault is displayed again immediately after power up. • Safety Integrated faults The "Safe Stop" (SH) function must be deselected before these faults are acknowledged.
PULSE INHIBIT	The fault can only be acknowledged with a pulse inhibit (r0899.11 = 0). The same possibilities are available for acknowledging as described under acknowledge IMMEDIATELY.

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Save fault buffer on POWER OFF

The contents of the fault buffer are saved to non-volatile storage when the Control Unit 320 (CU320) is powered down, i.e. the fault buffer history is still available when the unit is powered up again.

Note:

Preconditions:

- Firmware with version V2.2 or later.
- Control Unit 320 (CU320) with hardware version C or higher.
  The hardware version is shown on the rating plate or can be displayed online with the commissioning software (in Project Navigator under "Drive Unit" --> Configuration --> Version Overview).

If these conditions are not fulfilled, the contents of the fault buffer are deleted on every POWER ON.

The fault buffer of a drive object comprises the following parameters:

- r0945[0...63], r0947[0...63], r0948[0...63], r0949[0...63]
- r2109[0...63], r2130[0...63], r2133[0...63], r2136[0...63]

The fault buffer contents can be deleted manually as follows:

- Delete fault buffer for all drive objects:
  p2147 = 1 --> p2147 = 0 is automatically set after execution.
- Delete fault buffer for a specific drive object:
  p0952 = 0 --> The parameter belongs to the specified drive object.

The fault buffer contents are automatically deleted in response to the following events:

- Restore factory setting (p0009 = 30 and p0976 = 1).
- Download with modified structure (e.g. number of drive objects changed).
- Power-up after other parameter values have been loaded (e.g. p0976 = 10).
- Firmware release upgrade.

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3.1.2 Explanation of the List of Faults and Alarms

The data in the following example has been chosen at random. A description can contain the information listed below. Some of the information is optional.

The list of faults and alarms (See Section 3.2) has the following layout:

- Start of example -

Axxxxx (F, N)	**Fault location (optional): Name**
Drive object:	List of objects.
Reaction:	NONE
Acknowledg-ment:	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.
Reaction to F:	A_INFEED: OFF2 (OFF1, NONE) SERVO: NONE (OFF1, OFF2, OFF3) VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowledge-ment for F:	IMMEDIATELY (POWER ON)
Reaction to N:	NONE
Acknowledge-ment for N:	NONE

- 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 F or N)**
Nxxxxx	**No message**
Nxxxxx (A)	**No message (message type can be changed to A)**
Cxxxxx	**Safety message (separate message buffer)**

A report 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 Report" or "Internal Report"
- C means "Safety message"

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

Information about reaction and acknowledgement is specified independently for a report with adjustable report type (e.g. reaction to F, acknowledgement for F).

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Note:

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

References: /IH1/ SINAMICS S120 Commissioning Manual
Chapter "Diagnostics"

The list of faults and alarms (see Chapter 3.2) provide information referred to the properties of a message/report that have been set as standard. If the properties of a specific message/report are changed, then the appropriate 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 report number all serve to identify the report (e.g. with the commissioning software).

Drive object:

For each message (fault/alarm) it is specified in which drive object this message is present.

A message can belong to either one, several, or all drive objects.

Reaction: Default fault reaction (adjustable fault reaction)

Specifies the default reaction in the event of a fault.

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

Note:

See Chapter 3.1.1

Acknowledgment: Default acknowledgement (adjustable acknowledgement)

Specifies the default method of fault acknowledgement after the cause has been eliminated.

The optional brackets indicate whether the default acknowledgement can be changed and which acknowledgement can be adjusted via parameter (p2126, p2127).

Note:

See Chapter 3.1.1

Cause:

Description of the possible causes of the fault/alarm A fault or alarm value is also specified as an option.

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Fault value (r0949, format):

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

Alarm value (r2124, format):

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

The alarm value is entered in the alarm buffer in r2124[0...7] and specifies additional, precise information about an alarm.

Remedy:

Description of the potential methods for eliminating the cause of the active fault or alarm.

Alarm

In individual cases, the servicing and maintenance personnel are responsible for choosing a suitable method for eliminating the cause of faults.

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3.1.3 Numerical ranges of faults and alarms

Note:

The following numerical ranges for the faults and alarms represent a complete overview for SINAMICS.

The faults and alarms for the product described in this List Manual are described in detail in Chapter 3.2.

Faults and alarms are organized into the following numerical ranges:

Table 3-4 Numerical ranges of faults and alarms

from	to	Range
1000	3999	Control Unit
4000	4999	Reserved
5000	5999	Power unit
6000	6899	Infeed
6900	6999	Braking Module
7000	7999	Drive
8000	8999	Option Board
9000	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 alarm if the encoder is parameterized as 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 alarm if the encoder is parameterized as 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)

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Table 3-4 Numerical ranges of faults and alarms, continued

from	to	Range
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	OEM external

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3.2 List of faults and alarms

Product: SINAMICS S, Version: 2503100, Language: eng

F01000 Internal software error

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.

F01001 Internal software error

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

F01002 Internal software error

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

F01003 Acknowledgement delay when accessing the memory

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
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 (power off/on) for all components.
- contact the Hotline.

N01004 (F, A) Internal software error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An internal software error has occurred.
Fault value (r0949, hexadecimal):
Only for internal Siemens troubleshooting.

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Remedy: - read-out diagnostics parameter (r9999).
- contact the Hotline.
See also: r9999 (Software error internal supplementary diagnostics)

Reaction upon F: OFF2

Acknowl. upon F: POWER ON

Reaction upon A: NONE

Acknowl. upon A: NONE

F01005 Firmware download for DRIVE-CLiQ component unsuccessful

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Firmware was not able to be downloaded into a DRIVE-CLiQ component.
Fault value (r0949, interpret hexadecimal):
xxyyyy hex: xx = component number, yyyy = cause of the fault
yyyy = 000B hex = 11 dec:
DRIVE-CLiQ component has detected a checksum error.
yyyy = 000F hex = 15 dec:
The selected DRIVE-CLiQ component did not accept the contents of the firmware file.
yyyy = 0012 hex = 18 dec:
Firmware version is too old and is not accepted by the component.
yyyy = 0013 hex = 19 dec:
Firmware version is not suitable for the hardware release of the component.
yyyy = 0065 hex = 101 dec:
After several communication attempts, not response from the DRIVE-CLiQ component.
yyyy = 008B hex = 139 dec:
Initially, a new boot loader is loaded (must be repeated after POWER ON).
yyyy = 008C hex = 140 dec:
Firmware file for the DRIVE-CLiQ component not available on the CompactFlash card.
yyyy = 008F hex = 142 dec:
Component has not changed into the mode for firmware download.
yyyy = 009C hex = 156 dec:
Component with the specified component number is not available (p7828).
yyyy = Additional values:
Only for internal Siemens troubleshooting.

Remedy: - check the selected component number (p7828).
- check the DRIVE-CLiQ connection.
- save suitable firmware file for download in the directory /siemens/sinamics/code/sac/.
- after POWER ON has been carried out again for the DRIVE-CLiQ component, download the firmware again.

A01006 Firmware update for DRIVE-CLiQ component required

Drive object: All objects

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.

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A01007 POWER ON for DRIVE-CLiQ component required

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A DRIVE-CLiQ component must be powered-up again (POWER ON) as, for example, the firmware was updated.
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-out the power supply of the specified DRIVE-CLiQ component and switch-in again.

F01008 (N) Upload not possible

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: It is neither possible to upload parameters nor the topology because this would lead to inconsistent data sets due to the activation of certain drive functions.
Fault value (r0949, interpret decimal):
Number of active functions that result in the upload being canceled.
Remedy: For all vector drives, check the following functions and if required, de-activate:
- rotating measurement (p1960).
- record the friction characteristic (p3845).
- synchronize line-drive (p3800).

Reaction upon N: NONE
Acknowl. upon N: NONE

A01009 (N) CU: Control board overtemperature

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The temperature (r0037[0]) of the control board (Control Unit) has exceeded the specified limit value.
Remedy: - check the air intake for the Control Unit.
- check the fan for the Control Unit (only for CU310).

Note:
The alarm automatically disappears after the limit value has been fallen below.
Reaction upon N: NONE
Acknowl. upon N: NONE

F01010 Drive type unknown

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: An unknown drive type was found.
Fault value (r0949, interpret decimal):
Drive object type (refer to p0101, p0107).
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

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F01011 (N) Download interrupted

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The project download was interrupted.
- the user prematurely interrupted the project download.
- the communication cable was interrupted (cable breakage, cable withdrawn).
Note:
The response to an interrupted download is the state "first commissioning".

Remedy:
- check the communication cable.
- download the project again.
- boot from previously saved files (power-down/power-up or p0976).

Reaction upon N: NONE
Acknowl. upon N: NONE

F01012 (N) Project conversion error

Drive object: SERVO, VECTOR
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: When converting the project of an older FW version, a fatal error occurred.
The fault value (r0949) specifies the number of the parameter that caused the error.
Notice:
For fault value 600, the motor temperature monitoring is no longer guaranteed.

Remedy: The parameter specified in fault value (r0949) must be checked.
Notice: For fault value 600 the parameterization of p0600 (motor temperature sensor for monitoring) must be corrected (refer to the function diagram 8016 and parameter description for p0600).

Reaction upon N: NONE
Acknowl. upon N: NONE

F01015 Internal software error

Drive object: All objects
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 (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

A01016 (F) CompactFlash card changed

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: On the CompactFlash card, at least one file in the directory /SIEMENS/SINAMICS/ has been illegally changed with respect to that supplied from the factory. No changes are permitted in this directory.
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.
See also: r9925 (CompactFlash card file error)

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Remedy: For the CompactFlash card, restore the status when originally supplied from the factory.
Note:
The file involved can be read-out using parameter r9925.
See also: r9926 (CompactFlash card check status)

Reaction upon F: OFF2

Acknowl. upon F: POWER ON

A01017 Component lists changed

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: On the CompactFlash 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):
The problem is indicated in the first digit of the alarm value:
1: File does not exist.
2: Firmware version of the file does not match-up with the software version.
3: The file checksum is incorrect.
The second digit of the alarm value indicates in which directory the file is located:
0: Directory /SIEMENS/SINAMICS/DATA/
1: Directory /ADDON/SINAMICS/DATA/
The third digit of the alarm value indicates the file:
0: File MOTARM.ACX
1: File MOTSRM.ACX
2: File MOTSLM.ACX
3: File ENCDATA.ACX
4: File FILTDATA.ACX
5: File BRKDATA.ACX

Remedy: For the CompactFlash card file involved, restore the status when originally supplied from the factory.

F01030 Sign of life failure for master control

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR

Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF3 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)
VECTOR: OFF3 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, 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 communications fail!

F01031 Sign of life failure for AOP off in remote

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR

Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF3 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)
VECTOR: OFF3 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: With the off mode active in remove, 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 AOP or disable completely.
Notice:
The monitoring time should be set as short as possible. A long monitoring time means a late response when the communications fail!
The monitoring time is set in milliseconds via the Main menu -> Settings -> Control settings -> Timeout monitoring

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F01033 Units changeover: Reference parameter value invalid

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When changing over the units into the referred representation type, it is not permissible that any of the reference parameters required are equal to 0.0
Fault value (r0949, parameter):
Reference parameter, whose value is 0.0.
See also: p0349 (System of units, motor equivalent circuit diagram data), p0505 (Selecting the system of units), p0595 (Selecting technological units)

Remedy: Set the value of the reference parameter to a number different than 0.0.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

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

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The change of a reference parameter meant that for a parameter involved, the selected value was not able to be recalculated in the per unit notation. 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 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

Remedy: Select the value of the reference parameters so that the parameter involved can be calculated in the per unit notation.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

A01035 (F) ACX: Boot from the back-up parameter back-up files

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: When the Control Unit 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. Instead, a back-up data set or a back-up parameter back-up file is downloaded.
Alarm value (r2124, interpret hexadecimal):
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 p0977 = 1 so that all of the parameter files are again completely written into the CompactFlash card.

Reaction upon F: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

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

Drive object: All objects

Reaction: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When downloading the device parameterization, a parameter back-up file associated with a drive object cannot be found. Neither a PSxxxyyy.ACX, a PSxxxyyy.NEW nor a PSxxxyyy.BAK parameter back-up file exists on the CompactFlash card for this drive object.
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 your project data using the commissioning software, carry out a new download for your project.
Save using the function "Copy RAM to ROM" or with p0977 = 1 so that all of the parameter files are again completely written into the CompactFlash card.
If you have not saved the project data, then the system must be again commissioned for the first time.

Reaction upon A: NONE

Acknowl. upon A: NONE

F01037 (A) ACX: Re-naming the parameter back-up file not successful

Drive object: All objects

Reaction: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The re-naming after saving a parameter back-up file on the CompactFlash card or in the volatile memory was unsuccessful.
One of the parameter back-up files to be re-named had the "read only" attribute. The parameter back-up files are saved on the CompactFlash card in the directory \USER\SINAMICS\DATA.
It is possible that the CompactFlash card is defective.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file names PSxxxyyy.* or CAxxxyyy.* or CCxxxyyy.*
yyy = 000 --> consistency back-up file
yyy = 099 --> PROFIBUS parameter back-up file PSxxx099.*
Byte 2: xxx in the file name PSxxxyyy.*
xxx = 000 --> data save started with p0977 = 1
xxx = 010 --> data save started with p0977 = 10
xxx = 011 --> data save started with p0977 = 11
xxx = 012 --> data save started with p0977 = 12
Byte 4, 3:
Only for internal Siemens troubleshooting.

Remedy: - check whether one of the files to be overwritten has the attribute "read only" and change this file attribute into "writable". Check all of the files (PSxxxyyy.*, CCxxxyyy.*, CAxxxyyy.*) that belong to drive yyy designated in the fault value.
- replace the CompactFlash card.

Reaction upon A: NONE

Acknowl. upon A: NONE

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F01038 (A) ACX: Loading the parameter back-up file not successful

Drive object: All objects

Reaction: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: An error occurred when loading PSxxxyyy.ACX or PTxxxyyy.ACX files from the CompactFlash card or from the volatile memory of the Control Unit.
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 4, 3, 2:
Only for internal Siemens troubleshooting.

Remedy: - if you have saved your project data using the commissioning software, carry out a new download for your project. Save using the function "Copy RAM to ROM" or with p0977 = 1 so that all of the parameter files are again completely written into the CompactFlash card.
- replace the CompactFlash card.

Reaction upon A: NONE

Acknowl. upon A: NONE

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

Drive object: All objects

Reaction: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Writing to at least one parameter-back-up file PSxxxyyy.NEW on the CompactFlash card was unsuccessful.
- on the CompactFlash card in the directory /USER/SINAMICS/DATA/ at least one parameter back-up file has the "read only" file attribute and cannot be overwritten.
- there is not sufficient free memory space on the CompactFlash card.
- the CompactFlash card is defective and cannot be written to.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.NEW
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2: xxx in the file name PSxxxyyy.NEW
xxx = 000 --> data save started with p0977 = 1
xxx = 010 --> data save started with p0977 = 10
xxx = 011 --> data save started with p0977 = 11
xxx = 012 --> data save started with p0977 = 12
Byte 4, 3:
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 on the CompactFlash card. Approx. 40 kbyte of free memory space is required for every drive object in the system.
- replace the CompactFlash card.

Reaction upon A: NONE

Acknowl. upon A: NONE

F01040 Save parameter settings and carry out a POWER ON

Drive object: All objects

Reaction: OFF2

Acknowledge: POWER ON

Cause: A parameter was changed in the drive system that means that it is necessary to save the parameters and re-boot (e.g. p0110).

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Remedy: - save the parameters (p0971/p0977).
- carry out a POWER ON (power off/on) for all components.

F01041 Parameter save necessary

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Defective or missing files were detected on the CompactFlash card when booting.
Fault value (r0949, interpret decimal):
-1: Source file cannot be opened.
-2: Source file cannot be read.
-3: Target directory cannot be set-up.
-4: Target file cannot be set-up/opened.
-5: Target file cannot be written into.
Additional values:
Only for internal Siemens troubleshooting.
Remedy: - save the parameters (p0977).
- download the project again into the drive unit.
- update the firmware
- if required, replace the Control Unit and/or CompactFlash card.

F01042 Parameter error for a project download

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (NONE, OFF1, OFF3)
VECTOR: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: An error was detected when downloading a project using the commissioning (start-up) software (e.g. incorrect parameter value).
For the specified parameter, it was detected that dynamic limits were exceeded that could possibly depend on other parameters.
Fault value (r0949, interpret decimal):
Low word: Parameter number (16 bits without sign)
Byte 3: Parameter index
Byte 4: Error ID
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 present.
17: Task cannot be executed due to operating status.
20: Illegal value.
21: Response too long.
22: Parameter address illegal.
23: Format illegal.
24: Number of values not consistent.
25: Drive object does not exist.
101: Presently de-activated.
104: Illegal value.
107: Write access not permitted when controller enabled.
108: Units unknown.
109: Write access only in the commissioning state, encoder (p0010 = 4).
110: Write access only in the commissioning state, motor (p0010 = 3).
111: Write access only in the commissioning state, power unit (p0010 = 2).
112: Write access only in the quick commissioning mode (p0010 = 1).

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113: Write access only in the ready mode (p0010 = 0).
114: Write access only in the commissioning state, parameter reset (p0010 = 30).
115: Write access only in the Safety Integrated commissioning state (p0010 = 95).
116: Write access only in the commissioning state, technological application/units (p0010 = 5).
117: Write access only in the commissioning state (p0010 not equal to 0).
118: Write access only in the commissioning state, download (p0010 = 29).
119: Parameter may not be written into in download.
120: Write access only in the commissioning state – drive basis configuration (device: p0009 = 3).
121: Write access only in the commissioning state – define drive type (device: p0009 = 2).
122: Write access only in the commissioning state – data set basis configuration (device: p0009 = 4).
123: Write access only in the commissioning state – device configuration (device: p0009 = 1).
124: Write access only in the commissioning state – device download (device: p0009 = 29).
125: Write access only in the commissioning state – device parameter reset (device: p0009 = 30).
126: Write access only in the commissioning state – device ready (device: p0009 = 0).
127: Write access only in the commissioning state – device (device: p0009 not equal to 0).
129: Parameter may not be written into in download.
130: Transfer of the master control is inhibited via BI: p0806.
131: Required BICO interconnection not possible, because BICO output does not supply floating value
132: Free BICO interconnection inhibited via p0922.
133: Access method not defined.
200: Below the valid values.
201: Above the valid values.
202: Cannot be accessed from the Basic Operator Panel (BOP).
203: Cannot be read from the Basic Operator Panel (BOP).
204: Write access not permitted.

Remedy: - enter the correct value into the specified parameter.
- identify the parameter that narrows (restricts) the limits of the specified parameter.

F01043 Fatal error at project download

Drive object: All objects

Reaction: A_INFEED: OFF2 (OFF1)
SERVO: OFF2 (OFF1, OFF3)
VECTOR: OFF2 (OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: A fatal error was detected when downloading a project using the commissioning (start-up) software.
Fault value (r0949, interpret decimal):
1: Device status cannot be changed to Device Download (drive object ON?).
2: Incorrect drive object number.
3: A drive object that has already been deleted is deleted again.
4: Deletes drive object that has already been registered for generation.
5: Deletes a drive object that no longer exists.
6: Generating an undeleted drive object that already existed.
7: Regeneration of a drive object already registered for generation.
8: Maximum number of drive objects that can be generated exceeded.
9: Error while generating a device drive object.
10: Error while generating target topology parameters (p9902 and p9903).
11: Error when generating a drive object (global component).
12: Error when generating a drive object (drive component).
13: Unknown drive object type.
14: Drive status cannot be changed to Ready (p0947 and p0949).
15: Drive status cannot be changed to Drive Download.
16: Device status cannot be changed to Ready.
17: It is not possible to download the topology. The component wiring should be checked, taking into account the various messages/signals.
18: A new download is only possible if the factory settings are re-established for the drive unit.
19: The slot for the option module has been configured several times (e.g. CAN and COMM BOARD)
20: The configuration is inconsistent (e.g. CAN for Control Unit, however no CAN configured for drive objects A_INF, SERVO or VECTOR).

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Remedy: - use the current version of the commissioning software.
- modify the offline project and carry out a new download (e.g. compare the number of drive objects, motor, encoder, power unit in the offline project and at the drive).
- change the drive system (is a drive rotating or is there a message/signal?).
- carefully note any other messages/signals and remove their cause.

F01044 CU CompactFlash: Message incorrectly written

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: An error was detected when loading the message descriptions (FDxxxyyy.ACX) saved on the CompactFlash card.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: Replace the CompactFlash card.

A01045 CU CompactFlash: Configuring data invalid

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An invalid data type was detected when evaluating parameter files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX or CCxxxyyy.ACX, saved on the CompactFlash card.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Operation without any restrictions is then possible.
After downloading the project, save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1. This means that the incorrect parameter files are overwritten on the CompactFlash card.

A01046 (F) CU CompactFlash: Configuring data invalid

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An invalid data type was detected when evaluating the parameter files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX or CCxxxyyy.ACX saved on the CompactFlash card.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Operation without any restrictions is then possible.
After downloading the project, save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1, so that the incorrect parameter files are overwritten on the CompactFlash card.
Reaction upon F: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A01047 (F) ACX: Write to parameter error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: When evaluating the parameters files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX or CCxxxyyy.ACX, saved on the CompactFlash card, a parameter value was not able to be transferred into the Control Unit memory.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Operation without any restrictions is then possible.
After downloading the project, save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1. This means that the incorrect parameter files are overwritten on the CompactFlash card.

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Reaction upon F: A_INFEED: NONE (OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

A01049 CU CompactFlash: It is not possible write to file

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: It is not possible to write into a write-protective 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 on the CompactFlash card under .../USER/SINAMICS/DATA/... When required, remove write protection and save again (e.g. set p0971 to 1).

F01050 CompactFlash card and device not compatible

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (NONE, OFF1, OFF3)
VECTOR: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: The CompactFlash card and the device type do not match (e.g. a CompactFlash card for SINAMICS S is inserted in SINAMICS G).

Remedy: - insert the matching CompactFlash card
- use the matching Control Unit or power unit.

F01051 Drive object type is not available

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The drive object type in conjunction with the selected application-specific perspective is not available. The required descriptive file (PDxxxyyy.ACX) does not exist on the CompactFlash card.
Fault value (r0949, interpret decimal):
Index of p0103 and p0107.
See also: p0103 (Application-specific view), r0103 (Application-specific view), p0107 (Drive object type), r0107 (Drive object type)

Remedy: - for this drive object type (p0107), select a valid application-specific perspective (p0103).
- save the required descriptive file (PDxxxyyy.ACX) on the CompactFlash card.
See also: p0103 (Application-specific view), r0103 (Application-specific view), p0107 (Drive object type), r0107 (Drive object type)

A01052 CU: System overload calculated for the complete target topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: A system overload was calculated based on a complete active target topology.
Alarm value (r2124, interpret decimal):
2: Computation time load too high.
6: Cyclic computation time load too high.

Remedy: - reduce the sampling time.
- only use one data set (CDS, DDS).
- de-activate the function module.
- de-activate the drive object.
- remove the drive object from the target topology.
Note:
After executing the appropriate counter-measure, a new calculation must be initiated with p9974 = 1.

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A01053 CU: System overload measured

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A system overload was determined based on measured values.
Alarm value (r2124, interpret decimal):
2: Computation time load too high.
6: Cyclic computation time load too high.
See also: r9976 (System load)
Remedy: - reduce the sampling time.
- only use one data set (CDS, DDS).
- de-activate the function module.
- de-activate the drive object.
- remove the drive object from the target topology.

A01064 (F) CU: Internal error (CRC)

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: CRC error in the Control Unit program memory
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3, STOP2)
VECTOR: NONE (OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

A01065 Drive: Fault for non-active encoder

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: On or several inactive encoders indicate an error.
Remedy: Remove the error for the inactive encoder.

A01099 Tolerance window of the timer synchronization exited

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The clock (time) master exited the selected tolerance window for clock synchronization.
See also: p3109 (RTC real time synchronization, tolerance window)
Remedy: Select the re-synchronization interval so that the synchronization deviation between the clock master and drive system lies within the tolerance window.
See also: r3108 (RTC last synchronization deviation)

A01100 CU: CompactFlash card withdrawn

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The CompactFlash card (non-volatile memory) was withdrawn in operation.
Notice:
It is not permissible that the CompactFlash card is withdrawn or inserted under voltage.
Remedy: - power-down the drive system.
- re-insert the CompactFlash card that was withdrawn - this card must match the drive system.
- power-up the drive system again.

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F01105 (A) CU: Insufficient memory

Drive object: All objects
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 drive, function modules, data sets, OA applications, blocks, etc).
- use an additional Control Unit.
Reaction upon A: NONE
Acknowl. upon A: NONE

F01107 CU: Save to CompactFlash card unsuccessful

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A data save on the CompactFlash card was not able to be successfully carried out.
- CompactFlash card is defective.
- CompactFlash card does not have sufficient memory space.
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 was not able to be set-up on the CompactFlash card.
-4: A new file was not able to be set-up on the CompactFlash card.
-5: A new file was not able to be written onto the CompactFlash card.
Remedy: - try to save again.
- use another CompactFlash card.

F01110 CU: More than one SINAMICS G on one Control Unit

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: More than one SINAMICS G power unit type is being operated from the Control Unit.
Fault value (r0949, interpret decimal):
Number of the second drive with a SINAMICS G power unit type.
Remedy: Only one SINAMICS G drive type is permitted.

F01111 CU: SINAMICS S and G together on one Control Unit

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: SINAMICS S and G drive units are being operated together on one Control Unit.
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

Drive object: All objects
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. PM240).
2: DC/AC power unit connected to CU310 not permissible.
Remedy: Replace the power unit that is not permissible by a component that is permissible.

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F01120 (A) Terminal initialization has failed

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An internal software error has occurred when initializing the terminal functions on the CU3xx, the TB30 or the TM31.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: All objects
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)
1001: DI/DO 9 (X122.8), initialization error
1002: DI/DO 10 (X122.10), initialization error
1004: DI/DO 11 (X122.11), initialization error
1008: DI/DO 13 (X132.8), initialization error
1016: DI/DO 14 (X132.10), initialization error
1032: DI/DO 15 (X132.11), initialization error
Remedy: Reduce the frequency of the pulses at the measuring probe input.
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The maximum permissible number of instances of a drive object type was exceeded.
Fault value (r0949, interpret decimal):
Byte 1: Drive object type (p0107).
Byte 2: Max. permissible number of instances for this drive object type.
Byte 3: Actual number of instances for this drive object type.
Remedy: - power-down the unit.
- suitably restrict the number of instances of a drive object type by reducing the number of inserted components.
- re-commission the unit.

F01205 CU: Time slice overflow

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: Insufficient processing time is available for the existing topology.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - reduce the number of drives.
- increase the sampling times.

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F01210 CU: Basic clock cycle selection and DRIVE-CLiQ clock cycles do not match

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The parameter to select the basic clock cycle does not match the drive topology. Drives connected to the same DRIVE-CLiQ port of the Control Unit have been assigned different basic clock cycles.
Fault value (r0949, interpret decimal):
The fault value specifies the parameter involved.
See also: r0111 (Basis sampling time selection)
Remedy: Only those drive objects may be connected to the same DRIVE-CLiQ socket of the Control Unit that should run with the same basic clock cycle.
For example, Active Line Modules and Motor Modules should be inserted at different DRIVE-CLiQ sockets as their basic clock cycles and current controller clock cycles are generally different.
See also: r0111 (Basis sampling time selection)

F01220 CU: Bas clk cyc too low

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The parameter for the basic clock cycle is set too short for the number of connected drives.
Fault value (r0949, interpret decimal):
The fault value specifies the parameter involved.
See also: r0110 (Basis sampling times)
Remedy: - increase the basic clock cycle.
- reduce the number of connected drives and start to re-commission the unit.
See also: r0110 (Basis sampling times)

F01221 CU: Bas clk cyc too low

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The closed-loop control / monitoring cannot maintain the intended clock cycle.
The runtime of the closed-loop control/monitoring is too long for the particular clock cycle or the computation 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 communications.
See also: p0112 (Sampling times pre-setting p0115)

A01223 CU: Sampling time inconsistent

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: When changing a sampling time (p0115[0], p0799 or p4099), inconsistency between the clock cycles has been identified.
Alarm value (r2124, interpret decimal):
1: Value, low minimal value.
2: Value, high maximum value.
3: Value not a multiple of 1.25 µs.
4: Value does not match clock cycle synchronous PROFIBUS operation.
5: Value not a multiple of 125 µs.
6: Value not a multiple of 250 µs.
7: Value not a multiple of 375 µs.
8: Value not a multiple of 400 µs.
10: Special restriction of the drive object violated.
20: For a SERVO with a 62.5 µs sampling time, more than a maximum of two SERVO-type drive objects were detected on the DRIVE-CLiQ line (no other drive object is permitted on this line).
21: Value can be a multiple of the current controller sampling time of a servo or vector drive in the system (e.g. for TB30, the values of all of the indices should be taken into account).

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30: Value less than 31.25 µs.
31: Value less than 62.5 µs.
32: Value less than 125 µs.
40: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125 µs. Further, none of the nodes (devices) has a sampling tine of less than 125 µs.
41: A chassis unit was identified on the DRIVE-CLiQ line. Further, the highest common denominator of the sampling times of the all of the nodes (devices) connected to the line is less than 250 µs.
42: An Active Line Module was identified on the DRIVE-CLiQ line as device. Further, the highest common denominator of the sampling times of the all of the nodes (devices) connected to the line is less than 125 µs.
43: A Voltage Sensing Module (VSM) was identified on the DRIVE-CLiQ line as device. Further, the highest common denominator of the sampling times of the all of the nodes (devices) connected to the line is not equal to the current controller sampling time of the drive object of the VSM.
44: The highest common denominator of the sampling times of all of the components connected to the DRIVE-CLiQ line is not the same for all components of this drive object (e.g. there are components on different DRIVE-CLiQ lines on which different highest common denominators are generated).
52: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 31.25 µs.
54: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 62.5 µs.
56: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125 µs.
58: Nodes (devices) have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 250 µs.
99: Inconsistency identified cross drive objects.
116: Recommended clock cycle in r0116[0...1].
Note:
The topology rules should be noted when connected-up DRIVE-CLiQ.
The rules are, provided in the following document:
SINAMICS S120 Function Manual
The parameters of the sampling times can also be changed with automatic calculations.

Remedy: - check the DRIVE-CLiQ cables.
- set a valid sampling time.
See also: p0115 (Sampling time for supplementary functions), p0799 (CU inputs/outputs, sampling time), p4099 (TB30 inputs/outputs, sampling time)

A01224 CU: Pulse frequency inconsistent

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: When changing the minimum pulse frequency (p0113) inconsistency between the pulse frequencies was identified.
Alarm value (r2124, interpret decimal):
1: Value, low minimal value.
2: Value, high maximum value.
3: Resulting sampling time is not a multiple of 1.25 µs.
4: Value does not match clock cycle synchronous PROFIBUS operation.
10: Special restriction of the drive object violated.
99: Inconsistency identified cross drive objects.
116: Recommended clock cycle in r0116[0...1].
Remedy: Set a valid pulse frequency.
See also: p0113 (Pulse frequency, minimum selection)

F01250 CU: CU-EEPROM incorrect read-only data

Drive object: All objects
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.

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A01251 CU: CU-EEPROM incorrect read-write data

Drive object: All objects
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:
- for the drive object with this alarm, clear the fault memory (p0952 = 0).
- as an alternative, clear the fault memory of all drive objects (p2147 = 1).
- replace the Control Unit.

F01255 CU: Option Board EEPROM read-only data error

Drive object: All objects
Reaction: NONE (OFF2)
Acknowledge: POWER ON
Cause: Error when reading the read-only data of the EEPROM in the Option Board.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON.
- replace the Control Unit.

A01256 CU: Option Board EEPROM Read-Write data error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error when reading the read-write data of the EEPROM in the Option Board.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON.
- replace the Control Unit.

F01303 DRIVE-CLiQ component does not support the required function

Drive object: All objects
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):
1: The component does not support the de-activation.
101: The Motor Module does not support an internal armature short-circuit.
102: The Motor Module does not support the de-activation.
201: The Sensor Module does not support actual value inversion (p0410.0 = 1) when using a Hall sensor (p0404.6 = 1) for the commutation.
202: The Sensor Module does not support parking/unparking.
203: The Sensor Module does not support the de-activation.
204: The firmware of this Terminal Module 15 (TM15) does not support the application TM15DI/DO.
205: The Sensor Module does not support the selected temperature evaluation (r0458).
206: The firmware of this Terminal Modules TM41/TM31/TM15 refers to an old firmware version. It is urgently necessary to upgrade the firmware to ensure disturbance-free operation.
207: The infeed with this hardware version does not support operation with device supply voltages of less than 380 V.
Remedy: Upgrade the firmware of the DRIVE-CLiQ component involved.
Re fault value = 205:
Check parameter p0600 and p0601 and if required, adapt interpretation.
Re fault value = 207:
Replace the infeed or if required set the device supply voltage higher (p0210).

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

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: On the CompactFlash card, there is a later firmware version than 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).
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY

F01305 Topology: Component number missing

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The component number from the topology was not parameterized (p0121 (for power unit, refer to p0107), p0131 (for servo/vector drives, refer to p0107), p0141, p0151, p0161).
Fault value (r0949, interpret decimal):
The fault value includes the particular data set number.
The fault also occurs if speed encoders were configured (p0187 ... p0189), however, no component numbers exist for them.
In this case, the fault value includes the drive data set number plus 100 * encoder number (e.g. 3xx, if a component number was not entered into p0141 for the third encoder (p0189)).
See also: p0121 (Power unit component number), p0131 (Motor component number), p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0151 (Voltage Sensing Module component number), p0161 (Option board, component number), p0186 (Motor Data Sets (MDS) number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)
Remedy: Enter the missing component number or remove the component and restart commissioning.
See also: p0121 (Power unit component number), p0131 (Motor component number), p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0151 (Voltage Sensing Module component number), p0161 (Option board, component number), p0186 (Motor Data Sets (MDS) number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

A01306 Firmware of the DRIVE-CLiQ component being updated

Drive object: All objects
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: None necessary.
This alarm automatically disappears after the firmware has been updated.

A01314 Topology: Component must not be present

Drive object: All objects
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):
Byte 1: Component number
Byte 2: Component class of the component
Byte 3: Connection number
Note: Component class and connection number are described in F01375.

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Remedy: - remove the corresponding component.
- change the setting "de-activat and not present".
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).
See also: p0105 (Activate/de-activate drive object), p0125 (Activate/de-activate power unit components), p0145 (Voltage Sensing Module, activate/de-activate), p0155 (Voltage Sensing Module, activate/de-activate)

A01315 Drive object not ready for operation

Drive object: All objects

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 again with the following actions:
- de-activate the drive object involved (p0105 = 0).
- de-activate the components involved (p0125 = 0, p0145 = 0, p0155 = 0, p0165 = 0).
- re-insert the components involved.
See also: p0105 (Activate/de-activate drive object), p0125 (Activate/de-activate power unit components), p0145 (Voltage Sensing Module, activate/de-activate), p0155 (Voltage Sensing Module, activate/de-activate)

A01316 Drive object inactive and again ready for operation

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: If, when inserting a component of the target topology, an inactive, non-operational drive object becomes operational again. The associated parameter of the component is, in this case, set to "activate" (p0125, p0145, p0155, p0165).
Note:
This is the only message, that is displayed for a de-activated drive object.

Remedy: The alarm automatically disappears again with the following actions:
- activate the drive object involved (p0105 = 1).
- again withdraw the components involved.
See also: p0105 (Activate/de-activate drive object)

A01317 De-activated component again present

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: If a component of the target topology for an active drive object is inserted and the associated parameter of the component is set to "de-activate" (p0125, p0145, p0155, p0165).
Note:
This is the only message, that is displayed for a de-activated component.

Remedy: The alarm automatically disappears again with the following actions:
- activate the components involved (p0125 = 1, p0145 = 1, p0155 = 1, p0165 = 1).
- again withdraw the components involved.
See also: p0125 (Activate/de-activate power unit components), p0145 (Voltage Sensing Module, activate/de-activate), p0155 (Voltage Sensing Module, activate/de-activate)

A01318 BICO: De-activated interconnections present

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: This alarm is output:
If an inactive/non-operational drive object is again active/ready for operation
and
r9498[] or r9499[] are not empty
and
the connections listed in r9498[] and r9499 have actually been changed

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Remedy: Clear alarm:
Set p9496 to 1 or 2
or
de-activate DO

A01319 Inserted component not initialized

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The inserted component has still not been initiated, as the pulses are enabled.

Remedy: Pulse inhibit

A01320 Topology: Drive object number does not exist in configuration

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: A drive object number is missing in p0978
Alarm value (r2124, interpret decimal):
Index of p0101 under which the missing 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 that a drive object number is 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.

A01321 Topology: Drive object number does not exist in configuration

Drive object: All objects

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 that a drive object number is 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

Drive object: All objects

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 p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible that a drive object number is 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.

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A01323 Topology: More than two part lists set-up

Drive object: All objects
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 that a drive object number is 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 set-up

Drive object: All objects
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 that a drive object number is 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.

A01330 Topology: Quick commissioning not possible

Drive object: All objects
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):
The cause is in byte 1 supplementary information is included in byte 2 and the high word.
Byte 1 = 1:
For a component, illegal connections were detected.
- Byte 2 = 1: For a Motor Module, more than one motor with DRIVE-CLiQ was detected.
- Byte 2 = 2: For a motor with DRIVE-CLiQ, the DRIVE-CLiQ cable is not connected to a Motor Module.
- high word = preliminary component number of the component with illegal connection.

Byte 1 = 2:
The topology contains too many components of a particular type.
- Byte 2 = 1: There is more than one Master Control Unit.
- Byte 2 = 2: There is more than 1 infeed (8 for a parallel circuit configuration).
- Byte 2 = 3: There are more than 10 Motor Modules (8 for a parallel circuit configuration).
- Byte 2 = 4: There are more than 9 encoders.
- Byte 2 = 5: There are more than 8 Terminal Modules.
- Byte 2 = 7: Unknown component type.
- Byte 2 = 8: There are more than 6 drive slaves.
- Byte 2 = 9: Connection of a drive slave not permitted.
- Byte 2 = 10: There is no Drive Master.
- Byte 2 = 11: There is more than one motor with DRIVE-CLiQ for a parallel circuit.
- high word = not used.

Byte 1 = 3:
More than 16 components are connected at a DRIVE-CLiQ socket of the Control Unit.
- byte 2 = 0, 1, 2, 3 means e.g. detected at the DRIVE-CLiQ socket X100, X101, X102, X103.
- high word = not used.

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Byte 1 = 4:
The number of components connected one after the other is greater than 125.
- byte 2 = not used.
- high word = preliminary component number of the first component and component that resulted in the fault.
Byte 1 = 5:
The component is not permissible for SERVO.
- Byte 2 = 1: SINAMICS G is being used.
- Byte 2 = 2: Chassis is being used.
- high word = preliminary component number of the first component and component that resulted in the fault.
Byte 1 = 6:
For a component, illegal EEPROM data was detected. These must be corrected before the system continues to boot.
- Byte 2 = 1: 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.
- high word = preliminary component number of the component with illegal EEPROM data.
Byte 1 = 7:
The actual topology contains an illegal combination of components.
- Byte 2 = 1: Active Line Module (ALM) and Basic Line Module (BLM).
- Byte 2 = 2: Active Line Module (ALM) and Smart Line Module (SLM).
- Byte 2 = 3: SIMOTION control (e.g. SIMOTION D445) and SINUMERIK component (e.g. NX15).
- Byte 2 = 4: SINUMERIK control (e.g. SINUMERIK 730.net) and SIMOTION component (e.g. CX32).
- high word = not used.
Note:
Connection type and connection number are described in F01375.
See also: p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

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).
Re byte 1 = 6 and byte 2 = 1:
Correct the order number when commissioning using the commissioning software.
See also: p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

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

Drive object: All objects

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:
- power unit (p0121).
- motor (p0131, p0186).
- 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

Drive object: All objects

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.

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1yy:
The communications clock cycle of the DRIVE-CLiQ connection on the CU is not sufficient for all read transfers.
2yy:
The communications clock cycle of the DRIVE-CLiQ connection on the CU is not sufficient for all write transfers.
3yy:
Cyclic communications 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.
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.

Remedy: Check the DRIVE-CLiQ connection:
Reduce the number of components on the DRIVE-CLiQ line involved and distribute these to other DRIVE-CLiQ connections of the Control Unit. This means that communication is uniformly distributed over several communication lines.
Re fault value = 1yy - 4yy in addition:
- increase the sampling times (p0112, p0115).

F01354 Topology: Actual topology indicates an illegal component

Drive object: All objects
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.

F01355 Topology: Actual topology changed

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The unit target topology (p0099) does not correspond to the unit actual topology (r0098).
The fault only occurs if the topology was commissioned using the automatic internal device mechanism and not using the commissioning software.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also: r0098 (Actual device topology), p0099 (Device target topology)
Remedy: One of the following counter-measures can be selected if no faults have occurred in the topology detection itself:
If commissioning was still not completed:
- carry out a self-commissioning routine (starting from p0009 = 1).
General: Set p0099 to r0098, set p0009 to 0; for existing Motor Modules, this results in servo drives being automatically generated (p0107).
Generating servo drives: Set p0097 to 1, set p0009 to 0.
Generating vector drives: Set p0097 to 2, set p0009 to 0.
Generating vector drives with parallel circuit: Set p0097 to 12, set p0009 to 0.
In order to set configurations in p0108, before setting p0009 to 0, it is possible to first set p0009 to 2 and p0108 modified. The index corresponds to the drive object (p0107).
If commissioning was already completed:
- re-establish the original connections and re-connect power to the Control Unit.
- restore the factory setting for the complete equipment (all of the drives) and allow automatic self-commissioning again.
- change the device parameterization to match the connections (this is only possible using the commissioning software).

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Notice:
Topology changes, that result in this fault being generated, cannot be accepted by the automatic function in the device, but must be transferred using the commissioning software and parameter download. The automatic function in the device only allows constant topology to be used. Otherwise, when the topology is changed, all of the previous parameter settings are lost and replaced by the factory setting.
See also: r0098 (Actual device topology)

F01360 Topology: Actual topology is illegal

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The detected actual topology is not permissible.
Fault value (r0949, interpret hexadecimal):
Byte 1 (cause):
1: Too many components were detected at the Control Unit. The maximum permissible number of components is 199.
2: The component type of a component is not known. The preliminary component number is in the high word.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Re fault value = 1:
Change the configuration. Connect less than 199 components to the Control Unit.
Re fault value = 2:
Remove the component with unknown component type.

A01361 Topology: Actual topology contains SINUMERIK and SIMOTION components

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The detected actual topology contains SINUMERIK and SIMOTION components.
Fault value (r0949, interpret hexadecimal):
Byte 1: Component number of the component.
Byte 2: Component class of the actual topology.
Byte 3 (cause):
1: An NX10 or NX15 was connected to a SIMOTION control.
2: A CX32 was connected to a SINUMERIK control.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

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

F01375 Topology: Actual topology, duplicate connection between two components

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When detecting the actual topology, a ring-type connection was detected.
Fault value (r0949, interpret hexadecimal):
Low word: Preliminary component number of a component included in the ring
Byte 3: Component class
Byte 4: Connection number
Example:
Fault value = 33751339 dec = 203012B hex
Byte 4 = 02 hex = 2 dec, byte 3 = 03 hex = 3 dec, low word = 012B hex = 299 dec
Component class:
1: Control unit
2: Motor Module
3: Line Module
4: Sensor Module (SM)
5: Voltage Sensing Module (VSM)
6: Terminal Module (TM)

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7: DRIVE-CLiQ Module Cabinet (DMC)
8: Controller Extension 32 (CX32)
49: DRIVE-CLiQ components (non-listed components)
50: Option slot (e.g. Terminal Board 30)
60: Encoder (e.g. EnDat)
70: Motor with DRIVE-CLiQ
Component type:
Precise designation within a component class (e.g. "SMC20").
Connection number:
Consecutive numbers, starting from zero, of the appropriate connection or slot (e.g. DRIVE-CLiQ connection X100 on the Control Unit has the connection number 0).

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

F01380 Topology: Actual topology, defective EEPROM

Drive object: All objects

Reaction: NONE

Acknowledge: POWER ON

Cause: When detecting the actual topology, a component with a defective EEPROM was detected.
Fault value (r0949, interpret hexadecimal):
Low word:
Preliminary component number of the defective components.

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

A01381 Topology: Comparison power unit shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a power unit in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology.
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01382 Topology: Comparison Sensor Module shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Sensor Module in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01383 Topology: Comparison Terminal Module shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Terminal Module in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01384 Topology: Comparison DMC shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ Hub Module Cabinet (DMC) in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01385 Topology: Comparison CX32 shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a controller extension 32 (CX32) in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01386 Topology: Comparison DRIVE-CLiQ component shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ component in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01387 Topology: Comparison option slot component shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a option slot component in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01388 Topology: Comparison EnDat encoder shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected an EnDat encoder in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01389 Topology: Comparison motor with DRIVE-CLiQ shifted

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a motor with DRIVE-CLiQ in the actual topology that has been shifted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component shifted in the target topology
The connection in the actual topology where the shifted component was detected, is described in bytes 2, 3 and 4.
Byte 2: Component class
Byte 3: Component number
Byte 4: Connection number
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 the topologies:
- undo the change to the actual topology by changing-over the DRIVE-CLiQ cables.
- commissioning software: Go online, upload the drive unit, adapt the topology offline and download the modified project.
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01416 Topology: Comparison additional component in actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has found a component in the actual topology which is not specified in the target topology.
The alarm value includes the component number and connection number of the component with which the additional component is connected.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number
Byte 2: Component class of the additional component
Byte 3: Connection number
Note:
Component class and connection number are described in F01375.

Remedy: Adapting the topologies:
- remove the additional component in the actual topology.
- download the target topology that matches the actual topology (commissioning software).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01420 Topology: Comparison a component is different

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
There are differences in the electronic rating plate.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component
Byte 2: Component class of the target topology
Byte 3: Component class of the actual topology
Byte 4 (cause):
1: Different component type.
2: Different Order No.
3: Different manufacturer.
4: Connection changed-over for a multi-component slave (e.g. double Motor Module) or defective EEPROM data in the electronic rating plate.
5: A CX32 was replaced by an NX10 or NX15.
6: An NX10 or NX15 was replaced by a CX32.
Note:
Component class and component type are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: Adapting the topologies:
- check the component soft-wired connections against the hardware configuration of the drive unit in the commissioning software and correct differences.
- parameterize the topology comparison of all components (p9906).
- parameterize the topology comparison of one components (p9907, p9908).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01421 Topology: Comparison different components

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
The component class, the component type or the number of connections differ.
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number of the component
Byte 2: Component class of the target topology
Byte 3: Component class of the actual topology
Byte 4 (cause):
1: Different component class
2: Different component type
3: Different order number
4: Different number of connections
Note:
Component class, component type 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: Check the component soft-wired connections against the hardware configuration of the drive unit in the commissioning software and correct differences.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01425 Topology: Comparison serial number of a component is different

Drive object: All objects

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):
Byte 1: Component number of the component
Byte 2: Component class
Byte 3: Number of differences
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 the topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
Re byte 3:
Byte 3 = 1 --> can be acknowledged using p9904 or p9905.
Byte 3 > 1 --> can be acknowledged using p9905 and can be de-activated using p9906 or p9907/p9908.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).
See also: p9904 (Topology comparison, acknowledge differences), p9905 (Device specialization), p9906 (Topology comparison, comparison stage of all components), p9907 (Topology comparison, comparison stage of the component number), p9908 (Topology comparison, comparison stage of a component)

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A01428 Topo: Comparison connection of a component is different

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected differences in the actual and target topologies in relation to one component.
A component was connected to another connection.
The different connections of a component are described in the alarm value:
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number
Byte 2: Component class
Byte 3: Connection number of the actual topology
Byte 4: Connection number of the target topology
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 the topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).
See also: p9904 (Topology comparison, acknowledge differences)

A01429 Topology: Comparison connection is different for more than component

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: A topology comparison has found differences between the actual and target topology for several components. A component was connected to another connection.
The different connections of a component are described in the alarm value:
Alarm value (r2124, interpret hexadecimal):
Byte 1: Component number
Byte 2: Component class
Byte 3: Connection number of the actual topology
Byte 4: Connection number of the target topology
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 the topologies:
- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).
Note:
In the software, a double Motor Module behaves just like two separate DRIVE-CLiQ nodes. If a double Motor Module is re-inserted, this can result in several differences in the actual topology.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01451 Topology: Target topology is invalid

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: An error has occurred when writing into the target topology.
The write operation was interrupted due to an invalid target topology.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Reload the target topology using the commissioning software.

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F01470 Topology: Target topology ring-type connection

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A ring-type connection was detected when writing into the target topology.
Fault value (r0949, interpret hexadecimal):
Byte 1: Component number of a component included in the ring
Byte 2: Component class
Byte 3: Connection number
Note:
Component class and connection number are described in F01375.

Remedy: Read-out the fault value and remove one of the specified connections.
Then, download the target topology again using the commissioning software.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01475 Topology: Target topology duplicate connection between two components

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When writing the target topology, a duplicate connection between two components was detected.
Fault value (r0949, interpret hexadecimal):
Byte 1: Component number of one of the components connected twice
Byte 2: Component class
Byte 3: Connection number 1 of the duplicate connection
Byte 4: Connection number 2 of the duplicate connection
Note:
Component class and connection number are described in F01375.

Remedy: Read-out the fault value and remove one of the two specified connections.
Then, download the target topology again using the commissioning software.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01481 Topology: Comparison power unit missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a power unit in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the drive belonging to the power unit in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01482 Topology: Comparison Sensor Module missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Sensor Module in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - re-configure the drive belonging to the Sensor Module in the commissioning software project (encoder configuration) and download the new configuration into the drive unit.
- delete the drive belonging to the Sensor Module in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01483 Topology: Comparison Terminal Module missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a Terminal Module in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the Terminal Module in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01484 Topology: Comparison DMC missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ Hub Module Cabinet (DMC) in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the DRIVE-CLiQ Hub Module Cabinet (DMC) in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01485 Topology: Comparison CX32 missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a controller extension 32 (CX32) in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the CX32 in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01486 Topology: Comparison DRIVE-CLiQ components missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected a DRIVE-CLiQ component in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the drive belonging to this component in the commissioning software project and download the new configuration into the drive unit.
- re-configure the drive belonging to this component in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01487 Topology: Comparison option slot components missing in the actual topology

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The topology comparison has detected an option slot module in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

Remedy: - delete the option board in the commissioning software project and download the new configuration into the drive unit.
- re-configure the drive unit in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

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A01488 Topology: Comparison EnDat encoder missing in the actual topology

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The topology comparison has detected an EnDat encoder in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.
Remedy: - re-configure the drive belonging to the encoder in the commissioning software project (encoder configuration) and download the new configuration into the drive unit.
- delete the drive belonging to the encoder in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

A01489 Topology: Comparison motor with DRIVE-CLiQ missing in the actual topology

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The topology comparison has detected a motor with DRIVE-CLiQ in the target topology that is not available in the actual topology.
Alarm value (r2124, interpret decimal):
Component number of the additional target components.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.
Remedy: - re-configure the drive belonging to this motor in the commissioning software project and download the new configuration into the drive unit.
- delete the drive belonging to this motor in the commissioning software project and download the new configuration into the drive unit.
- check that the actual topology matches the target topology and if required, change over.
- check DRIVE-CLiQ cables for interruption and contact problems.
Note:
Under "Topology --> Topology view" the commissioning software offers improved diagnostics capability (e.g. set-point/actual value comparison).

F01505 (A) BICO: Interconnection cannot be established

Drive object: All objects
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.
Reaction upon A: NONE
Acknowl. upon A: NONE

F01506 (A) BICO: No standard telegram

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The standard telegram in p0922 is not maintained and therefore p0922 is set to 999.
Fault value (r0949, interpret decimal):
BICO parameter for which the write attempt was unsuccessful.

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Remedy: Again set the required standard telegram (p0922).
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: There are BICO interconnections as signal drain from a drive object that is either inactive/not operational.
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 into, 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).
Reaction upon F: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A01508 BICO: Interconnections to inactive objects exceeded

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The maximum number of BICO interconnections (signal drains) when de-activating a drive object was exceeded.
When de-activating a drive object, all BICO interconnections (signal drains) 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

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The selected 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.

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F01511 (A) BICO: Interconnection between various normalizations

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The requested interconnection was set up. 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 (contains the reference value for current) / p2001 (contains the reference value for voltage) is calculated between the BICO output and BICO input.
Fault value (r0949, interpret decimal):
Parameter number of the BICO input (signal receiver).
Remedy: No correction needed.
Reaction upon A: NONE
Acknowl. upon A: NONE

F01512 BICO: No normalization available

Drive object: All objects
Reaction: A_INFEED: OFF2 (OFF1)
SERVO: OFF2
VECTOR: OFF2
Acknowledge: POWER ON
Cause: An attempt was made to determine a conversion factor for a normalization 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 normalization or check the transfer value.

F01513 (A) BICO: Spanning DO between different normalizations

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The requested interconnection was set up. 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:
The BICO output has, as standard unit, voltage and the BICO input has current; both lie in different drive objects.
This means that the factor p2002 (contains the reference value for current) / p2001 (contains the reference value for voltage) is calculated between the BICO output and BICO input.
Fault value (r0949, interpret decimal):
Parameter number of the BICO input (signal receiver).
Remedy: No correction needed.
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: During a reconnect operation (e.g. while booting or downloading - but cannot occur in normal operation) a parameter was not able to be written into.
Example:
When writing to a double word BICO input 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 receiver).

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Remedy: None necessary.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY

F01515 (A) BICO: Writing to parameter not permitted as the master control is active

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: While changing the number of CDS or when copying from CDS, the master control was active.
Remedy: None necessary.
Reaction upon A: NONE
Acknowl. upon A: NONE

A01590 (F) Drive: Motor maintenance interval expired

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
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).
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY

F01600 SI CU: STOP A initiated

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected a fault and initiated a STOP A (pulse cancelation via the safety shutdown path of the Control Unit).
- forced checking procedure of the safety shutdown path of the Control Unit unsuccessful.
- subsequent response to fault F01611 (defect in a monitoring channel).
Fault value (r0949, interpret decimal):
0: Stop request from the Motor Module.
1005: Pulses canceled although STO not selected and there is no internal STOP A present.
1010: Pulses enabled although STO is selected or an internal STOP A is present.
1015: Feedback of the safe pulse cancelation for Motor Modules connected in parallel are different.
9999: Subsequent response to fault F01611.
Remedy: - select Safe Torque Off and de-select again.
- replace the Motor Module involved.
Re fault value = 9999:
- carry out diagnostics for fault F01611.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

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F01611 SI CU: Defect in a monitoring channel".

Drive object: SERVO, VECTOR

Reaction: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected a fault in the data cross-check between the CU and Motor Module (MM) and initiated a STOP F.
As a result of this fault, after the parameterized transition has expired (p9658), fault F01600 (SI CU: STOP A initiated) is output.
Fault value (r0949, interpret decimal):
0: Stop request from the Motor Module.
1 to 999:
Number of the cross-checked data that resulted in this fault. This number is also displayed in r9795.
1: SI monitoring clock cycle (r9780, r9880).
2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.
3: SI SGE changeover tolerance time (p9650, p9850).
4: SI transition period STOP F to STOP A (p9658, p9858).
5: SI enable Safe Brake Control (p9602, p9802).
6: SI motion enable, safety-relevant functions (p9501, internal value).
7: SI pulse cancelation delay time for Safe Stop 1 (p9652, p9852).
8: SI PROFIsafe address (p9610, p9810).
1000: Watchdog timer has expired. Within the time of approx. 5 * p9650 too many switching operations have occurred at terminal EP of the Motor Module.
1001, 1002: Initialization error, change timer / check timer.
2000: Status of the STO terminals on the Control Unit and Motor Module are different.
2001: Feedback signal for safe pulse cancelation on the Control Unit and Motor Module are different.
2002: Status of the delay timer SS1 on the Control Unit and Motor Module are different.
2004: Status of the STO selection for modules connected in parallel are different.
2005: Feedback signal of the safe pulse cancelation on the Control Unit and Motor Modules connected in parallel are different.

Remedy: Re fault value = 1 to 5 and 7 to 999:
- check the cross-checked data that resulted in a STOP F.
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 6:
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 1000:
- check the EP terminal at the Motor Module (contact problems).

Re fault value = 1001, 1002:
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 2000, 2001, 2002, 2004, 2005:
- check the tolerance time SGE changeover and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- replace the Motor Module involved.

Note:
CU: Control Unit
EP: Enable Pulses (pulse enable)
MM: Motor Module
F-DI: Failsafe Digital Input / SGE: Safety-relevant input
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
STO: Safe Torque Off / SH: Safe standstill

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F01612 SI CU: STO inputs for power units connected in parallel different

Drive object: SERVO, VECTOR
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-based "Safety Integrated" function on the Control Unit (CU) has identified different states of the AND'ed STO inputs for power units connected in parallel and has initiated a STOP F.
As a result of this fault, after the parameterized transition has expired (p9658), fault F01600 (SI CU: STOP A initiated) is output.
Fault value (r0949, interpret binary):
Binary image of the digital inputs of the Control Unit that are used as signal source for the function "Safe Torque Off".
Remedy: - check the tolerance time SGE changeover and if required, increase the value (p9650).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
Note:
CU: Control Unit
F-DI: Failsafe Digital Input / SGE: Safety-relevant input
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

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

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Torque Off" (STO) function has been selected on the Control Unit (CU) using the input terminal and is active.
Note:
This message does not result in a safety stop response.
Remedy: None necessary.
Note:
CU: Control Unit
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill
Reaction upon F: OFF2
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Stop 1" (SS1) function has been selected on the Control Unit (CU) and is active.
Note:
This message does not result in a safety stop response.
Remedy: None necessary.
Note:
CU: Control Unit
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
Reaction upon F: OFF3
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected an error in the sign-of-life of the safety data between the CU and Motor Module (MM) and initiated a STOP A.
- there is either a DRIVE-CLiQ communications error or communications have 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 (power off/on) for all components.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
- de-select all drive functions that are not absolutely necessary.
- reduce the number of drives.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01630 SI CU: Brake control error

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function in the Control Unit (CU) has detected a brake control error and initiated a STOP A.
- no motor holding brake connected.
- the motor holding brake control on the Motor Module is faulty.
- a DRIVE-CLiQ communications error has occurred between the Control Unit and the Motor Module involved.
Fault value (r0949, interpret decimal):
10: No brake connected or fault in the Motor Module brake control circuit ("open brake" operation).
11: Defect in the brake control circuit of the Motor Module ("brake open" operation).
20: Short-circuit in the brake winding or fault in the brake control circuit of the Motor Module ("brake open" state).
30: No brake connected, short-circuit in the brake winding or fault in the Motor Module brake control circuit ("close brake" operation).
31: Defect in the brake control circuit of the Motor Module ("close brake" operation).
40: Defect in the brake control circuit of the Motor Module ("brake closed" state).
50: Defect in the brake control circuit of the Motor Module or communications fault between the Control Unit and the Motor Module (brake control diagnostics).

Remedy:
- select Safe Torque Off and de-select again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
- check the electrical cabinet design and cable routing for EMC compliance
- replace the Motor Module involved.
Operation with Safe Brake Module:
- check the Safe Brake Modules connection.
- replace the Safe Brake Module.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

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F01649 SI CU: Internal software error

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An internal error in the Safety Integrated software on the Control Unit 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 (power off/on) for all components.
- re-commission the "Safety Integrated" function and carry out a POWER ON.
- upgrade the Control Unit software.
- contact the Hotline.
- replace the Control Unit.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01650 SI CU: Acceptance test required

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function in the Control Unit 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 the Motor Module not available.
1000: Reference and actual checksum on the Control Unit are not identical (booting).
- at least one checksum-checked piece of data is defective.
2000: Reference and actual checksum on the Control Unit are not identical (commissioning mode).
- reference checksum incorrectly entered into the Control Unit (p9799 not equal to r9798).
- when de-activating the safety functions, p9501 or p9503 are not deleted.
2001: Reference and actual checksum on the Motor Module are not identical (commissioning mode).
- reference checksum incorrectly entered into the Motor Module (p9899 not equal to r9898).
- when de-activating the safety functions, p9501 or p9503 are not deleted.
2002: Enable of safety-related functions between the Control Unit and Motor Module 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: Safe Brake Control is enabled differently between the Control Unit and Motor Module (p9602 not equal to p9802).
2020: Error when saving the safety parameters for the Motor Module.
3005: The Safety LogBook has identified that a hardware-related safety checksum has changed. An acceptance test is required.
9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.

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Remedy: Re fault value = 130:
- carry out safety commissioning routine.
Re fault value = 1000:
- again carry out safety commissioning routine.
- replace the CompactFlash card.
Re fault value = 2000:
- check the safety parameters in the Control Unit and adapt the reference checksum (p9799).
Re fault value = 2001:
- check the safety parameters in the Motor Module and adapt the reference checksum (p9899).
Re fault value = 2002:
- enable the safety-related functions in the Control Unit and check in the Motor Module (p9601 = p9801).
Re fault value = 2003, 2004, 2005:
- Carry out an acceptance test and generate an acceptance report. The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the documentation for SINAMICS Safety Integrated. For fault value 2005, the alarm can be acknowledged if 'Safe Torque Off' (STO) has been deselected
Re fault value = 2010:
- enable the safety-related brake control in the Control Unit and check in the Motor Module (p9602 = p9802).
Re fault value = 2020:
- again carry out safety commissioning routine.
- replace the CompactFlash card.
Re fault value = 3005:
- carry out the function checks for the modified hardware and generate an acceptance report.
For fault value 3005, the alarm can be acknowledged if 'Safe Torque Off' (STO) is deselected.
Re fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
See also: p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

F01651 SI CU: Synchronization safety time slices unsuccessful

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The "Safety Integrated" function requires a synchronization of the safety time slices between the Control Unit (CU) and Motor Module (MM) and between the Control Unit and the higher-level control. This synchronization routine was not successful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
150: Fault in the synchronization to the PROFIBUS master.
All other values: Only for internal Siemens troubleshooting.
See also: p9510 (SI Motion clock-cycle synchronous PROFIBUS master)

Remedy: Re fault value = 150:
- check the setting of p9510 (SI motion clock cycle synchronous PROFIBUS master) and if required, correct.
General:
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- upgrade the software of the higher-level control.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

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F01652 SI CU: Illegal monitoring clock cycle

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: One of the Safety Integrated monitoring clock cycles is not permissible:
- the drive-based monitoring clock cycle cannot be maintained due to the communication conditions required in the system.
- the monitoring clock cycle for safe motion monitoring functions with the higher-level control is not permissible (p9500).
- The sampling time for the current controller (p0112, p0115) cannot be supported.

Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
- for enabled drive-based SI monitoring (p9601/p9801 > 0):
Minimum setting for the monitoring clock cycle (in µs).
- with the motion monitoring function enabled (p9501 > 0):
100: No matching monitoring clock cycle was able to be found.
101: The monitoring clock cycle is not an integer multiple of the position controller clock cycle and the DP clock cycle.
102: An error has occurred when transferring the DP clock cycle to the Motor Module (MM).
103: An error has occurred when transferring the DP clock cycle to the Sensor Module.
104: Four times the sampling time of the current controller is greater than 1 ms.
105: Four times the sampling time of the current controller is greater than the DP clock cycle when operating with a clock synchronous PROFIBUS. The DP clock cycle is not an integer multiple of the sampling time of the current controller.
106: The monitoring clock cycle does not match the monitoring clock cycle of the TM54F.

Remedy: For enabled drive-based SI monitoring (p9601/p9801 > 0):
- upgrade the Control Unit software.

For enabled motion monitoring function (p9501 > 0):
- correct the monitoring clock cycle (p9500) and carry out POWER ON.

Re fault value 104:
- restrict operation to a maximum of two vector drives. For the standard settings in p0112, p0115, the current controller sampling time is automatically reduced to 250 µs. If the standard values were changed, then the current controller sampling time (p0112, p0115) should be appropriately set.

Re fault value 105:
- refer to the remedy for fault value 104.
- increase the DP clock cycle for operation with a clock synchronous PROFIBUS so that there is a multiple clock cycle ratio of at least 4:1 between the DP clock cycle and the current controller sampling time.

Re fault value 106:
- set the parameters for the monitoring clock cycles the same (p10000 and p9500 / p9300).

Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01653 SI CU: PROFIBUS configuration error

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: There is a PROFIBUS configuration error for using Safety Integrated monitoring functions with a higher-level control (SINUMERIK or F-PLC).
Note:
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.
240: The configured safety slot for the receive data from the SINUMERIK has the incorrect length.
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.
340: The configured safety slot for the send data to the SINUMERIK has the incorrect length.

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Remedy: - check the PROFIBUS configuration of the safety slot on the master side and, if required, correct.
- upgrade the Control Unit software.

F01655 SI CU: Align monitoring functions

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An error has occurred when aligning the Safety Integrated monitoring functions on the Control Unit (CU) and Motor Module (MM). Control unit and Motor Module were not able to determine a common set of supported SI monitoring functions.
- there is either a DRIVE-CLiQ communications error or communications have failed.
- Safety Integrated software releases on the Control Unit and Motor Module are not compatible with one another.
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 (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01656 SI CU: Motor Module parameter error

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: When accessing the Safety Integrated parameters for the Motor Module (MM) on the CompactFlash card, 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 the Motor Module corrupted.
131: Internal Motor Module software error.
132: Communication errors when uploading or downloading the safety parameters for the Motor Module.
255: Internal software error on the Control Unit.
Remedy: - re-commission the safety functions.
- upgrade the Control Unit software.
- upgrade the Motor Module software.
- replace the CompactFlash card.
Re fault value = 132:
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

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F01659 SI CU: Write request for parameter rejected

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The write request for one or several Safety Integrated parameters on the Control Unit (CU) 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: It was selected that the drive parameters are reset. However, the Safety Integrated parameters cannot be 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.
11: An attempt was made to enable the SBC function although this cannot be supported.
12: An attempt was made to enable the SBC function although this cannot be supported for a parallel circuit configuration.
13: An attempt was made to enable the SS1 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.
16: An attempt was made to enable the STO function although this cannot be supported when the internal voltage protection (p1231) is enabled.
See also: p0970 (Reset infeed parameter), p3900 (Completion of quick commissioning), r9771 (SI common functions (Control Unit)), r9871 (SI common functions (Motor Module)

Remedy: Re fault value = 1:
- set the Safety Integrated password (p9761).
Re fault value = 2:
- inhibit Safety Integrated and again reset the drive parameters.
Re fault value = 3:
- end the simulation mode for the digital input (p0795).
Re fault value = 10, 11, 12, 13, 14, 15:
- check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Motor Module that supports the required function ("Safe Torque Off", "Safe Brake Control", "PROFIsafe", "motion monitoring functions integrated in the drive").
- upgrade the Motor Module software.
- upgrade the Control Unit software.
Re fault value = 16:
- inhibit the internal voltage protection (p1231).
Note:
CU: Control Unit
SBC: Safe Brake Control
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
STO: Safe Torque Off / SH: Safe standstill
See also: p9501 (SI motion enable safety functions (Control Unit)), p9601 (SI enable, functions integrated in the drive (Control Unit)), p9620 (SI signal source for STO (SH)/SBC/SS1 (Control Unit)), p9761 (SI password input), p9801 (SI enable, functions integrated in the drive (Motor Module))

F01660 SI CU: Safety-related functions not supported

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Motor Module (MM) does not support the safety-related functions (e.g. the Motor Module version is not the correct one). Safety Integrated cannot be commissioned.
Note:
This fault does not result in a safety stop response.

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Remedy: - use a Motor Module that supports the safety-related functions.
- upgrade the Motor Module software.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F01670 SI Motion: Invalid parameterization Sensor Module

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameterization of a Sensor Module used for Safety Integrated is not permissible.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
1: No encoder was parameterized for Safety Integrated.
2: An encoder was parameterized for Safety Integrated that does not have an A/B track (sinusoidal/cosinusoidal).
3: The encoder data set selected for Safety Integrated is still not valid.
4: A communications error to the encoder has occurred.
10: For an encoder used for Safety Integrated, not all of the Drive Data Sets (DDS) are assigned to the same Encoder Data Set (EDS) (p0187 ... p0189).

Remedy: Re fault value = 1, 2:
- use and parameterize an encoder that Safety Integrated supports (encoder with track A/B sinusoidal, p0404.4 = 1).
Re fault value = 3:
- check whether the drive or drive commissioning function is active and if required, exit this (p0009 = p00010 = 0), save the parameters (p0971 = 1) and carry out a POWER ON
Re fault value = 4:
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Sensor Module involved and if required, carry out a diagnostics routine for the faults identified.
Re fault value = 10:
- align the EDS assignment of all of the encoders used for safety integrated (p0187 ... p0189).
Note:
SI: Safety Integrated

F01671 SI Motion: Parameterization encoder error

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameterization of the encoder used by Safety Integrated is different than the parameterization of the standard encoder.
Fault value (r0949, interpret decimal):
Parameter number of the non-corresponding safety parameter.

Remedy: Align the encoder parameterization between the safety encoder and the standard encoder.
Note:
SI: Safety Integrated

F01672 SI Motion: Motor Module software incompatible

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The existing Motor Module software does not support the safe motion monitoring function with the higher-level control.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

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Remedy: - check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved
(F01655, F30655) and if required, carry out the appropriate diagnostics routine for the particular faults.
- use a Motor Module that supports safe motion monitoring
- upgrade the Motor Module software.
Note:
SI: Safety Integrated

F01673 SI Motion: Sensor Module software/hardware incompatible

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The existing Sensor Module software and/or hardware does not support the safe motion monitoring function with the higher-level control.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: - upgrade the Sensor Module software.
- use a Sensor Module that supports safe motion monitoring function.
Note:
SI: Safety Integrated

F01680 SI Motion: Checksum error safety monitoring functions

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual checksum calculated by the drive and entered in r9728 over 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 cannot 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.

Remedy: - Check the safety-relevant parameters and if required, correct.
- carry out a POWER ON.
- carry out an acceptance test.
Note:
SI: Safety Integrated

C01681 SI Motion: Incorrect parameter value

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameter cannot be parameterized with this value.
Fault value (r0949, interpret decimal):
Parameter number with the incorrect value.

Remedy: Correct the parameter value.

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F01682 SI Motion: Monitoring function not supported

Drive object: SERVO, VECTOR
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 and p9503).
3: Monitoring function SLS override not supported (p9501.5).
10: Monitoring functions only supported for a SERVO drive object.
20: Drive-based motion monitoring functions are only supported in conjunction with PROFIsafe (p9501 and p9601.1 ... 2 and p9801.1 ... 2).
21: PROFIsafe only supported in conjunction with motion monitoring functions in the drive (p9501 and p9601.1 ... 2 and p9801.1 ... 2).
Remedy: De-select the monitoring function involved (p9501, p9503, p9601, p9801).
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also: p9501 (SI motion enable safety functions (Control Unit)), p9503 (SI motion SCA (SN) enable (Control Unit))

F01683 SI Motion: SOS/SLS enable missing

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The safety-relevant basic function "SOS/SLS" is not enabled in p9501 although other safety-relevant monitoring functions are enabled.
Note:
This fault results in a STOP A that cannot be acknowledged.
Remedy: Enable the function "SOS/SLS" (p9501.0) and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SOS: Safe Operating Stop / SBH: Safe operating stop
See also: p9501 (SI motion enable safety functions (Control Unit))

F01684 SI Motion: Safely limited position limit values interchanged

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: For the function "Safely-Limited Position" (SE), a lower value is in p9534 as in p9535.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
1: Limit values SLP1 interchanged.
2: Limit values SLP2 interchanged.
Remedy: Correct the limit values in p9534 and p9535 and carry out a POWER ON.
Note:
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches

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F01685 SI Motion: Safely-limited speed limit value too high

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The limit value for the function "Safely-Limited Speed" (SLS) is greater than the speed that corresponds to an encoder limit frequency of 500 kHz.
Fault value (r0949, interpret decimal):
Maximum permissible speed.

Remedy: Correct the limit values for SLS and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also: p9531 (SI motion SLS (SG) limit values (Control Unit))

F01686 SI Motion: Illegal parameterization cam position

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: At least one enabled "Safety Cam" (SCA) is parameterized in p9536 or p9537 too close at the tolerance range around the modulo position.
The following conditions must be complied with to assign cams to a cam track:
- the cam length of cam x = p9536[x]-p9537[x] must be greater or equal to the cam tolerance + the position tolerance (= p9540 + p9542). This also means that for cams on a cam track, the minus position value must be less than the plus position value.
- the distance between 2 cams x and y (minus position value[y] - plus position value[x] = p9537[y] - p9536[x]) on a cam track must be greater than or equal to the cam tolerance + position tolerance (= p9540 + p9542).
Fault value (r0949, interpret decimal):
Number of the "Safe Cam" with an illegal position.
See also: p9501 (SI motion enable safety functions (Control Unit))

Remedy: Correct the cam position and carry out a POWER ON.
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
See also: p9536 (SI motion SCA (SN) plus cam position (Control Unit)), p9537 (SI motion SCA (SN) plus cam position (Control Unit))

F01687 SI Motion: Illegal parameterization modulo value SCA (SN)

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameterized modulo value for the "Safe Cam" (SCA) function is not a multiple of 360 000 mDegrees.

Remedy: Correct the modulo value for SCA and carry out a POWER ON.
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
See also: p9505 (SI motion SCA (SN) modulo value (Control Unit))

F01688 SI Motion: Actual value synchronization not permissible

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: It is not permissible to simultaneously enable the actual value synchronization and a monitoring function with absolute reference (SCA/SLP).

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Remedy: Either de-select the function "actual value synchronization" or the monitoring functions with absolute reference (SCA/SLP) and carry out a POWER ON.
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
See also: p9501 (SI motion enable safety functions (Control Unit))

C01689 SI Motion: Axis re-configured

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: POWER ON
Cause: The axis configuration was changed (e.g. changeover between linear axis and rotary axis).
Parameter p0108.13 is internally set to the correct value.
Fault value (r0949, interpret decimal):
Parameter number that initiated the change.
See also: p9502 (SI motion axis type (Control Unit))
Remedy: The following should be carried out after the changeover:
- exit the safety commissioning mode (p0010).
- save the parameters.
- carry out a POWER ON.
Note:
For the commissioning software, the units are only consistently displayed after a project upload.

F01690 SI Motion: Data save problem for the NVRAM

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowledge: POWER ON
Cause: For the safety functionality logbook when saving parameters p9781 and p9782, there was not enough NVRAM available in the drive:
0: There is no physical NVRAM available in the drive.
1: There is no NVRAM free.
Remedy: 0: Use a drive with NVRAM or add NVRAM.
1: By de-selecting functions that are not required, create sufficient space in the drive NVRAM.

A01696 (F) SI Motion: Testing of the motion monitoring functions selected when booting

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The test of the motion monitoring functions was already illegally active when booting.
In order to avoid an incorrect alarm, the test is only carried out after again selecting the forced checking procedure parameterized in p9705.
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 for initiation is parameterized in BI: p9705.
Note:
SI: Safety Integrated
See also: p9705 (SI Motion: Test stop signal source)
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)

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A01697 (F) SI Motion: Motion monitoring functions must be tested

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The time set in p9559 for the forced checking procedure of the safety motion monitoring functions has been exceeded. A new test is required.
After next selecting the forced checking procedure parameterized in p9705, the message is withdrawn and the monitoring time is reset.
Note:
This message does not result in a safety stop response.
See also: p9559 (SI motion forced checking procedure timer (Control Unit)), p9705 (SI Motion: Test stop signal source)

Remedy: Carry out the forced checking procedure of the safety motion monitoring functions.
The signal source for initiation is parameterized in BI: p9705.
Note:
SI: Safety Integrated
See also: p9705 (SI Motion: Test stop signal source)

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A01698 (F) SI CU: Commissioning mode active

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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.
See also: p0010 (Infeed commissioning parameter filter)

Remedy: None necessary.
Note:
CU: Control Unit
SI: Safety Integrated

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A01699 (F) SI CU: Shutdown path must be tested

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The time set in p9659 for the forced checking procedure of the safety shutdown paths has been exceeded. The safety shutdown paths must be re-tested.
After the next time that 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.
See also: p9659 (SI forced checking procedure timer)

Remedy: Select STO and then deselect again.
Note:
CU: Control Unit
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY (POWER ON)

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C01700 SI Motion CU: STOP A initiated

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP A (pulses are canceled via the safety shutdown path of the Control Unit).
Possible causes:
- stop request from the higher-level control.
- pulses not canceled after a parameterized time (p9557) after test stop selection.
- subsequent response to the message C01706 "SI Motion: Safe Brake Ramp exceeded".
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01701 "SI Motion: STOP B initiated".

Remedy:
- remove the fault cause in the control and carry out a POWER ON.
- check the value in p9557, if necessary, increase the value, and carry out POWER ON.
- check the shutdown path of Control Unit (check DRIVE-CLiQ communications).
- carry out a diagnostics routine for message C01706.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01701.
- replace Motor Module.
- replace Control Unit.

This message can only be acknowledged as follows in the acceptance test mode without POWER ON:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel.

Note:
SI: Safety Integrated

C01701 SI Motion CU: STOP B initiated

Drive object: SERVO, VECTOR

Reaction: OFF3

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP B (braked along the current limit).
As a result of this fault, after the time, parameterized in p9556 has expired, or the speed threshold, parameterized in p9560 has been fallen below, message C01700 "STOP A initiated" is output.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01711 "SI Motion: Defect in a monitoring channel".

Remedy:
- remove the fault cause in the control and carry out a POWER ON.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01711.

This message can only be acknowledged as follows in the acceptance test mode without POWER ON:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel.

Note:
SI: Safety Integrated

C01706 SI Motion CU: Safe Acceleration Monitor limit exceeded

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: After initiating STOP B or STOP C, the velocity has exceeded the selected tolerance.
The drive is shut down by the message C01700 "SI Motion: STOP A initiated".

Remedy: Check the braking behavior, if required, adapt the tolerance for "Safe Acceleration Monitor".
This message can only be acknowledged as follows in the acceptance test mode without POWER ON:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel.

Note:
SBR: Safe Acceleration Monitor
SI: Safety Integrated
See also: p9548 (SI motion SBR actual velocity tolerance (Control Unit))

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C01707 SI Motion CU: Tolerance for safe operating stop exceeded

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual position has distanced itself further from the target position than the standstill tolerance.
The drive is shut down by the message C01701 "SI Motion: STOP B initiated".

Remedy: - check whether safety faults are present and if required carry out the appropriate diagnostic routines for the particular faults.
- check whether the standstill tolerance matches the accuracy and control dynamic performance of the axis.
- carry out a POWER ON.
This message can only be acknowledged as follows in the acceptance test mode without POWER ON:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop
See also: p9530 (SI motion standstill tolerance (Control Unit))

C01708 SI Motion CU: STOP C initiated

Drive object: SERVO, VECTOR

Reaction: STOP2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP C (braked along the current limit).
"Safe Operating Stop" (SOS) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01715 "SI Motion: Safe end stop exceeded".
See also: p9552 (SI motion transition time STOP C to SOS (SBH) (Control Unit))

Remedy: - remove the cause of the fault at the control.
- carry out a diagnostics routine for message C01714.
This message can be acknowledged as follows:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

C01709 SI Motion CU: STOP D initiated

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP D (braking along the path).
"Safe Operating Stop" (SOS) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01715 "SI Motion: Safe end stop exceeded".
See also: p9553 (SI motion transition time STOP D to SOS (SBH) (Control Unit))

Remedy: - remove the cause of the fault at the control.
- carry out a diagnostics routine for message C01714.
This message can be acknowledged as follows:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

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C01710 SI Motion CU: STOP E initiated

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive is stopped via a STOP E (retraction motion).
"Safe Operating Stop" (SOS) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion: Safely reduced speed exceeded".
- subsequent response to the message C01715 "SI Motion: Safe end stop exceeded".
See also: p9554 (SI motion transition time STOP E to SOS (SBH) (Control Unit))
Remedy: - remove the cause of the fault at the control.
- carry out a diagnostics routine for message C01714.
This message can be acknowledged as follows:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

C01711 SI Motion CU: Defect in a monitoring channel"

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: When cross-checking and 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 after the parameterized timer stage has expired, the message C01701 "SI Motion: STOP B initiated" is output.
The message value that resulted in a STOP F is displayed in r9725. The described message values involve the data cross-check between the Control Unit and Motor Module. If the drive is operated together with a SINUMERIK, the message values are described in message 27001 of SINUMERIK.
Message value (r9749, interpret decimal):
0 to 999: Number of the cross-checked data that resulted in this fault.
0: Stop request from the other monitoring channel.
1: Status image of monitoring functions SOS, SLS or SLP (result list 1) (r9710[0], r9710[1]).
2: Status image of monitoring function SCA or n < nx (result list 2) (r9711[0], r9711[1]).
3: Pos. act. val. (r9712).
4: Error when synchronizing the crosswise data comparison between the two channels.
5: Function enable signals (p9501, p9301).
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]).
10: Standstill tol. (p9530, p9330).
31: Pos. tol. (p9542, p9342).
33: Time, velocity changeover (p9551, p9351).
35: Delay time, pulse canc. (p9556, p9356).
36: Checking time, pulse canc. (p9557, p9357).
37: Trans. time, STOP C to SOS (p9552, p9352).
38: Trans. time STOP D to SOS (p9553, p9353).
40: Stop response for SLS.
42: Shutdown speed, pulse canc. (p9560, p9360).
43: Memory test, stop response (STOP A).
44: Position actual value + limit value SLS1 / safety monitoring clock cycle.
45: Pos. act. val. - limit value SLS1 / safety monitoring clock cycle.
46: Pos. act. val. + limit value SLS2 / safety monitoring clock cycle.
47: Pos. act. val. - limit value SLS2 / safety monitoring clock cycle.
48: Pos. act. val. + limit value SLS3 / safety monitoring clock cycle.
49: Pos. act. val. - limit value SLS3 / safety monitoring clock cycle.
50: Pos. act. val. + limit value SLS4 / safety monitoring clock cycle.

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51: Pos. act. val. - limit value SLS4 / safety monitoring clock cycle.
52: Standstill position + tolerance.
53: Standstill position - tolerance
54: Pos. act. val. + limit value nx / safety monit. clock cycle + tolerance.
55: Pos. act. val. + limit value nx / safety monit. clock cycle.
56: Pos. act. val. - limit value nx / safety monit. clock cycle.
57: Pos. act. val. - limit value nx / safety monit. clock cycle - tolerance.
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 SBR (p9548, p9348).
82: SGEs for SLS correction factor.
83: Acceptance test timer (p9558, p9358).
84: Trans. time STOP F (p9555, p9355).
85: Trans. time bus failure (p9580, p9380).
86: Ident. 1-encoder system.
87: Encoder assignment, 2nd channel (p9526, p9326).
89: Encoder limit freq.
1000: Watchdog timer has expired. Too many signal changes have occurred at safety-relevant inputs.
1001: Initialization error of watchdog timer.
1005: Pulses already canceled for test stop selection.
1011: Acceptance test status between the monitoring channels differ.
1012: Plausibility violation of the actual value from the encoder.
1020: Cyc. communication failure between the monit. cycles.
1021: Cyc. communication failure between the monit. channel and Sensor Module.
5000 ... 5140: PROFIsafe message values.
Message values 5000, 5014, 5023, 5024, 5030 ... 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140:
- an int. SW error has occurred. Only for int. Siemens troubleshooting.
5012: Error when initializing the PROFIsafe driver.
5013: The result of the initialization is different for the two controllers.
5022: Error when evaluating the F parameters. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.
5025: The result of the F parameterization is different for the two controllers.
5026: CRC error for the F parameters. The transferred CRC value of the F parameters does not match the value calculated in the PST.
5065: A communications error was identified when receiving the PROFIsafe telegram.
5066: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.
See also: p9555 (SI motion transition time STOP F to STOP B (Control Unit)), r9725 (SI motion, diagnostics STOP F)

Remedy:

The following generally applies:
The monitoring clock cycles in both channels should be checked for equality and if required, set the same.
Re fault value = 0:
- no error was identified in this monitoring channel. Note the error message of the other monitoring channel (for MM: F30711).
Re fault value = 4:
The monitoring clock cycles in both channels should be checked for equality and if required, set the same.
Re fault value = 1 ... 999:
- check the cross-checked parameters that resulted in a STOP F, if required, copy the safety parameters.
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- correction of the encoder evaluation. The actual values differ as a result of mechanical faults (V belts, travel to a mechanical endstop, wear and window setting that is to narrow, encoder fault, ...).
Re fault value = 1000:
- investigate the signal associated with the safety-relevant input (contact problems).
Re fault value = 1001:
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

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Re fault value = 1005:
- check the conditions for pulse enable.
Re fault value = 1011:
- for diagnostics, refer to parameter (r9571).
Re fault value = 1012:
- upgrade the Sensor Module software.
Re fault value = 1020, 1021:
- check the communication link.
- carry out a POWER ON (power off/on) for all components.
- replace the hardware.
Re fault value = 5000, 5014, 5023, 5024, 5030, 5031, 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140:
- carry out a POWER ON (power off/on) for all components.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.
Re fault value = 5012:
- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the Motor Module (p9810). It is not permissible that the PROFIsafe address is 0 or FFFF!
Re fault value = 5013, 5025:
- carry out a POWER ON (power off/on) for all components.
- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the Motor Module (p9810).
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
Re fault value = 5022:
- check the setting of the values of the F parameters at the PROFIsafe slave (F_SIL, F_CRC_Length, F_Par_Version, F_Source_Add, F_Dest_add, F_WD_Time).
Re fault value = 5026:
- check the settings of the values of the F parameters and the F-parameter-CRC (CRC1) calculated from these at the PROFIsafe slave and update.
Re fault value = 5065:
- check the configuration and communication at the PROFIsafe slave (Cons. No. / CRC).
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
Re fault value = 5066:
- check the setting of the F parameter value of the time monitoring at the PROFIsafe-slave and, if required, increase the timeout value (F_WD_Time).
This message can be acknowledged as follows:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel
See also: p9300 (SI motion monitoring clock cycle (Motor Module)), p9500 (SI motion monitoring clock cycle (Control Unit))

C01714 SI Motion CU: Safely-Limited Speed exceeded

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive had 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 (r9749, interpret decimal):
100: SLS1 exceeded.
200: SLS2 exceeded.
300: SLS3 exceeded.
400: SLS4 exceeded.
1000: Encoder limit frequency exceeded.

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Remedy: - check the traversing/motion program in the control.
- check the limits for "Safely-Limited Speed (SLS) and if required, adapt (p9531).
This message can be acknowledged as follows:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also: p9531 (SI motion SLS (SG) limit values (Control Unit)), p9563 (SI motion SLS (SG)-specific stop response (Control Unit))

C01745 SI Motion CU: Checking braking torque for the brake test

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: POWER ON (IMMEDIATELY)
Cause: The normalization of the brake torque for the brake test can be changed using parameter p2003.
An acceptance test must be carried out again for the braking test. This determines whether the braking test is still carried out with the correct braking torque.
Remedy: - carry out a POWER ON (power off/on) for all components.
- repeat the acceptance test for the safety brake test if the brake test is used.
See also: p2003 (Reference torque)

A01796 (F, N) SI Motion CU: Wait for communications to the control

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The drive waits for communications to be established with the higher-level control to execute the safety-relevant motion monitoring functions.
Note:
In this state, the pulses are safely deleted.
Remedy: If, after a longer period of time, the message is not automatically withdrawn, then the following checks are made:
- correct assignment of the axes on the higher-level control to the drives in the drive unit.
- enable signal of the safety-relevant motion monitoring functions for the corresponding axis on the higher-level control (SINUMERIK).
- check the setting of p9510 (SI motion clock cycle synchronous PROFIBUS master) and if required, set p9510 to 1.
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

C01798 SI Motion CU: Test stop running

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The test stop is active.
Remedy: None necessary.
The message is withdrawn when the test stop is ended.
Note:
SI: Safety Integrated

C01799 SI Motion CU: Acceptance test mode active

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The acceptance test mode is active. The POWER ON signals of the safety-relevant motion monitoring functions can be acknowledged during the acceptance test using the RESET button of the higher-level control.

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Remedy: None necessary.
The message is withdrawn when exiting the acceptance test mode.
Note:
SI: Safety Integrated

F01800 DRIVE-CLiQ: Hardware/configuration error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A DRIVE-CLiQ connection fault has occurred.
Fault value (r0949, interpret decimal):
0 ... 7:
Communications via DRIVE-CLiQ socket 0 ... 7 has not been switched to cyclic operation. The cause can be an incorrect structure or a configuration that results in an impossible bus timing.
10:
Loss of the DRIVE-CLiQ connection. The cause can 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 fault 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: Re fault value = 0 ... 7:
- ensure that the DRIVE-CLiQ components have the same firmware releases.
- avoid longer topologies for short current controller clock cycles.

Re 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.

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

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

F01802 (A) CU DRIVE-CLiQ: POWER ON due to basis sampling times

Drive object: All objects

Reaction: A_INFEED: OFF2 (OFF1)
SERVO: OFF2 (IASC / DCBRAKE, OFF1)
VECTOR: OFF2 (IASC / DCBRAKE, OFF1)

Acknowledge: POWER ON

Cause: It is not possible to change the DRIVE-CLiQ basic sampling times p0110 in operation. POWER ON is required.
Fault value (r0949, interpret decimal):
Index of p0110.

Remedy: - save (p0971 = 1).
- carry out a POWER ON.

Reaction upon A: NONE

Acknowl. upon A: NONE

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F01840 SMI: Component found with changed data

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: Another Sensor Module Integrated (SMI) was found.
The reasons could be as follows:
1. A motor with DRIVE-CLiQ (SMI) and another order No. were used as replacement.
2. A Sensor Module Integrated was used as spare part where there is no encoder data and motor data of the incorrect data are present.
Fault value (r0949, interpret hexadecimal):
The value should be interpreted as follows as 8-digit hexadecimal number AAAABBBB:
BBBB = Reserved.
AAAA = Component number of the component involved.
Remedy: Re 1.
- re-establish the factory setting.
- carry out the first commissioning.
Re 2.
- download the SMI data from the back-up (p4690, p4691).
- carry out a POWER ON (power off/on) for all components.

A01900 (F) PROFIBUS: Configuration telegram error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A PROFIBUS master attempts to establish a connection using an incorrect configuring telegram.
Alarm value (r2124, interpret decimal):
50: Syntax error.
51: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence was defined using p0978.
52: Too many data words for input or output to a drive object. A maximum of 16 words is permitted for SERVO and VECTOR; maximum of 5 words, for A_INFEED, TB30, TM31 and CU320.
53: Uneven number of bytes for input or output.
Remedy: Check the bus configuring on the master and slave sides.
Re alarm value = 51:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.
Reaction upon F: NONE (OFF1)
Acknowl. upon F: IMMEDIATELY

A01901 (F) PROFIBUS: Parameterizing telegram error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A PROFIBUS master attempts to establish a connection using an incorrect parameterizing telegram.
Alarm value (r2124, interpret decimal):
1: Incorrect parameterizing bits.
10: Illegal length of an optional parameterizing block.
11: Illegal ID of an optional parameterizing block.
20: Double parameterizing block for clock synchronization.
21: Incorrect parameterizing block for clock synchronization.
22: Incorrect parameterizing bits for clock synchronization.
23: Illegal clock synchronization for PZD interface 2.
30: Double parameterizing block for peer-to-peer data transfer.
31: Incorrect parameterizing block for peer-to-peer data transfer.
Remedy: Check the bus configuration:
- bus addresses
- slave configuring
Reaction upon F: NONE (OFF1)
Acknowl. upon F: IMMEDIATELY

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A01902 IF1: PB/PN clock cycle synchronous operation parameterization not permissible

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: Alarm value (r2124, interpret decimal):
0: Bus cycle time Tdp < 0.5 ms.
1: Bus cycle time Tdp > 32 ms.
2: Bus cycle time Tdp is not a integer multiple of the current controller clock cycle.
3: Instant of the actual value sensing Ti > Bus cycle time Tdp or Ti = 0.
4: Instant of the actual value sensing Ti is not an integer multiple of the current controller clock cycle.
5: Instant of the setpoint acceptance Zo >= Bus cycle time Tdp or To = 0.
6: Instant of the setpoint acceptance To is not an integer multiple of the current controller clock cycle.
7: Master application cycle time Tmapc is not an integer multiple of the speed controller clock cycle.
8: Bus reserve bus cycle time Tdp - data exchange time Tdx less than two current controller clock cycles.
9: Bus cycle time Tdp has been modified with respect to the first time that the connection was established.
10: Instant of the setpoint acceptance not To <= data exchange time Tdx + To_min.
11: Master application cycle time Tmapc > 14 or Tmapc = 0.
12: PLL tolerance window Tpll_w > Tpll_w_max.
13: Bus cycle time Tdp is not a multiple of all basic clock cycles p0110[x].
14: For COMM BOARD with the setting To - 1 = Tdp - Ti, the instant of the setpoint acceptance is not To <= Data Exchange time Tdx + 2 * To_min.
15: This configuration is not permitted for Tdp < 1 ms.
16: Instant of the actual value sensing Ti is less than the permitted value (COMM BOARD: Ti >= 2).
17: The setting (To + Ti = Tdp + 2) is not permitted for COMM BOARD.

Remedy: - adapt the parameterizing telegram.
- adapt the current and speed controller clock cycle.
Re alarm value = 9:
- carry out a POWER ON.
Re alarm value = 15:
- check the number of specific drive object types in the configuration.
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

A01903 (F) COMM INT: Receive configuration data invalid

Drive object: All objects

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.
0: Configuration accepted.
1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence was defined using p0978.
2: Too many data words for input or output to a drive object. A maximum of 16 words is permitted for SERVO and VECTOR; maximum of 5 words, for A_INFEED, TB30, TM31 and CU320.
3: Uneven number of bytes for input or output.
4: Setting data for synchronization not accepted.
5: Drive still not in cyclic operation.
6: Buffer system not accepted.
7: Cyclic channel length too short for this setting.
8: Cyclic channel address not initialized.
9: 3-buffer system not permitted.
10: DRIVE-CLiQ fault.
11: CU-Link fault.
12: CX32 not in cyclic operation.

Remedy: Check the receive configuration data.
Re alarm value = 1:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.

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Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

F01910 (N, A) PROFIBUS: Setpoint timeout

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF3 (IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)
VECTOR: OFF3 (IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The receipt of setpoints from the PROFIBUS interface is interrupted because the bus connection is interrupted or the PROFIBUS master is switched off or was set into the STOP state.
See also: p2047 (PROFIBUS additional monitoring time)

Remedy: Restore the bus connection and set the PROFIBUS master to RUN.
See also: p2047 (PROFIBUS additional monitoring time)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F01911 IF1: PB/PN clock cycle synchronous operation clock cycle failure

Drive object: All objects

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: The global control telegram to synchronize the clock cycles has failed - in cyclic operation - for several DP clock cycles or has violated the time grid specified in the parameterizing telegram over several consecutive DP clock cycles (refer to the bus cycle time, Tdp and Tdpllw).

Remedy: - check the PROFIBUS cables and connectors.
- check whether communications were briefly or permanently interrupted.
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

F01912 IF1: PB/PN clock cycle synchronous operation sign-of-life failure

Drive object: All objects

Reaction: OFF1

Acknowledge: IMMEDIATELY

Cause: The maximum permissible number of errors in the master sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.

Remedy: - check the physical bus configuration (terminating resistor, shielding, etc.).
- check the interconnection of the master sign-of-life (p2045).
- check whether the master correctly sends the sign-of-life (e.g. set-up a trace with STW2.12 ... STW2.15 and trigger signal ZSW1.3).
- check the permissible telegram failure rate (p0925).
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

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F01913 (N, A) COMM INT: Monitoring time sign-of-life expired

Drive object: All objects

Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the sign-of-life counter has expired.
The connection between the drive and the higher-level control (SIMOTION, SINUMERIK) has been interrupted for the following reasons:
- the control was reset.
- the data transfer to the control was interrupted.

Remedy: - wait until the control has re-booted.
- restore data transfer to the control.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F01914 (N, A) COMM INT: Monitoring time configuration expired

Drive object: All objects

Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the configuration has expired.
Fault value (r0949, interpret decimal):
0: The transfer of the send-configuration data has been exceeded (time).
1: The transfer of the receive-configuration data has been exceeded (time).

Remedy: - acknowledge faults that are present.
- carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A01915 IF1: PB/PN clock cycle synchronous operation sign-of-life failure drive object 1

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: Group display for problems with the sign-of-life of the master (PROFIBUS clock-cycle synchronous [isochronous]) on the Drive Object 1 (Control Unit).
For central measurements, synchronism with the master is lost.

Remedy: Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

A01920 (F) PROFIBUS: Interruption cyclic connection

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The cyclic connection to the PROFIBUS master is interrupted.

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Remedy: Set up the PROFIBUS connection and activate the PROFIBUS master in the cyclic mode.
Reaction upon F: NONE (OFF1)
Acknowl. upon F: IMMEDIATELY

A01921 (F) PROFIBUS: Receive setpoints after To

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Output data of PROFIBUS master (setpoints) received at the incorrect instant in time within the PROFIBUS clock cycle.
Remedy: - check bus configuration.
- check parameters for clock cycle synchronization (ensure To > Tdx).
Note:
Zo: Time of setpoint acceptance
Tdx: Data exchange time
Reaction upon F: NONE (OFF1)
Acknowl. upon F: IMMEDIATELY

A01930 IF1: PB/PN current controller clock cycle clock cycle synchronous not equal

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The current controller clock cycle of all drives must be set the same for the clock cycle synchronous operation.
Alarm value (r2124, interpret decimal):
Number of the drive object with the different current controller clock cycle.
Remedy: Set current controller clock cycles to identical values (p0115[0]).
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET
See also: p0115 (Sampling time for supplementary functions)

A01931 IF1: PB/PN speed controller clock cycle clock cycle synchronous not equal

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The speed controller clock cycle of all drives must be set the same for the clock cycle synchronous operation.
Alarm value (r2124, interpret decimal):
Number of the drive object with the different speed controller clock cycle.
Remedy: Set the speed controller clock cycles the same (p0115[1]).
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET
See also: p0115 (Sampling time for supplementary functions)

A01932 IF1: PB/PN clock cycle synchronization missing for DSC

Drive object: SERVO, TM41
Reaction: NONE
Acknowledge: NONE
Cause: There is not clock cycle synchronization and DSC is selected.
Note:
DSC: Dynamic Servo Control
Remedy: Set the clock cycle synchronization when configuring the bus.

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A01940 IF1: PB/PN clock cycle synchronism not reached

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. It was not possible to synchronize to the clock cycle specified by the master.
- the master doesn't send a clock synchronous global control telegram although the clock synchronous operation was selected when configuring the bus.
- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.
- at least one drive object (that is not controlled from PROFIBUS/PROFINET) has a pulse enable.

Remedy: - check the master application and bus configuration.
- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.
- ensure that the pulses of drive objects, not controlled from PROFIBUS/PROFINET, are not enabled. Only enable the pulses after synchronizing the PROFIBUS/PROFINET drives.
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

A01941 IF1: PB/PN clock cycle signal missing when establishing the bus

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is not being received.

Remedy: Check the master application and bus configuration.
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

A01943 IF1: PB/PN clock cycle signal faulted when establishing the bus

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is being irregularly received.
-.the master is sending an irregular global control telegram.
- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.

Remedy: - check the master application and bus configuration.
- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

A01944 IF1: PB/PN sign-of-life synchronism not reached

Drive object: All objects

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 than configured in the Tmapc time grid.

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Remedy: - ensure that the master correctly increments the sign-of-life in the master application clock cycle.
- check the interconnection of the master sign-of-life (p2045).
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

A01945 PROFIBUS: Connection to the Publisher faulted

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: For PROFIBUS peer-to-peer data transfer, the connection to at least one Publisher is faulted.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection faulted.
...
Bit 15 = 1: Publisher with address in r2077[15], connection faulted.

Remedy: - check the PROFIBUS cables.
- carry out a first commissioning of the Publisher that has the faulted connection.
See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

F01946 (A) PROFIBUS: Connection to the Publisher interrupted

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: At this drive object, the connection to at least one Publisher for PROFIBUS peer-to-peer data transfer in cyclic operation was interrupted.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection interrupted.
...
Bit 15 = 1: Publisher with address in r2077[15], connection interrupted.

Remedy: - check the PROFIBUS cables.
- check the state of the Publisher that has the interrupted connection.
See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

Reaction upon A: NONE

Acknowl. upon A: NONE

F01950 (N, A) IF1: PB/PN clock cycle synchronous operation synchronization unsuccessful

Drive object: All objects

Reaction: OFF1 (NONE)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Synchronization of the internal clock cycle to the global control telegram has failed. The internal clock cycle exhibits an unexpected shift.

Remedy: Siemens internal
Note:
IF1: Interface 1
PB: PROFIBUS
PN: PROFINET

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F01951 CU DRIVE-CLiQ: Synchronization application clock cycle missing

Drive object: All objects
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: If DRIVE-CLiQ components with different application clock cycle are operated at a DRIVE-CLiQ port, then this requires synchronization with the Control Unit.
This synchronization routine was not successful.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the software of the DRIVE-CLiQ components.
- upgrade the Control Unit software.

F01952 CU DRIVE-CLiQ: Synchronization of component not supported

Drive object: All objects
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The existing system configuration requires at the connected DRIVE-CLiQ components support the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and the application clock cycle.
However, not all DRIVE-CLiQ components have this functionality.
Fault value (r0949, interpret decimal):
Component number of the first faulted DRIVE-CLiQ component.
Remedy: Upgrade the firmware of the component specified in the fault value.
Note:
If required, also upgrade additional components in the DRIVE-CLiQ line.

A01953 CU DRIVE-CLiQ: Synchronization not completed

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: After the drive system is powered-up, the synchronization between the basic clock cycle, DRIVE-CLiQ 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 (power off/on) for all components.

F01954 CU DRIVE-CLiQ: Synchronization unsuccessful

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: After the drive system is powered-up, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started and was not able to be successfully completed.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: 1. Ensure perfect functioning of the DRIVE-CLiQ.
2. Initiate a new synchronization, e.g. by:
- remove the PROFIBUS master and re-insert again.
- restart the PROFIBUS master.
- power-down the Control Unit and power-up again.
- press the Control Unit reset button.
- reset the parameter and download the saved parameters (p0009 = 30, p0976 = 2).

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A01955 CU DRIVE-CLiQ: Synchronization DO not completed

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: After the drive system is powered-up, the synchronization between the basic clock cycle, DRIVE-CLiQ 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 (power off/on) for all components of the DO.

A02000 Function generator: Start not possible

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The function generator has already been started.
Remedy: Stop the function generator and restart again if necessary.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4800 (Function generator control)

A02005 Function generator: Drive does not exist

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The drive object specified for connection does not exist.
See also: p4815 (Function generator drive number)
Remedy: Use the existing drive object with the corresponding number.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4815 (Function generator drive number)

A02006 Function generator: No drive specified for connection

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: No drive specified for connection in p4815.
See also: p4815 (Function generator drive number)
Remedy: At least one drive to be connected must be specified in p4815.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4815 (Function generator drive number)

A02007 Function generator: Drive not SERVO / VECTOR

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The drive object specified for connection is not a SERVO / VECTOR.
See also: p4815 (Function generator drive number)

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Remedy: Use a SERVO / VECTOR drive object with the corresponding number.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

A02008 Function generator: Drive specified a multiple number of times

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The drive object specified for connection is already specified.
Alarm value (r2124, interpret decimal):
Drive object number of the drive object that is specified a multiple number of times.
Remedy: Specify a different drive object.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

A02009 Function generator: Illegal mode

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The selected operating mode (p1300) of the drive object is not permissible when using the function generator.
Alarm value (r2124, interpret decimal):
Number of the drive object involved.
Remedy: Change the operating mode for this drive object to p1300 = 20 (sensorless speed control) or p1300 = 21 (speed control with encoder).
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

A02010 Function generator: Speed setpoint from the drive is not zero

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The speed setpoint of a drive - selected to be connected to - is greater than the value for the standstill detection set using p1226.
Alarm value (r2124, interpret decimal):
Number of the drive object involved.
Remedy: For all of the drives specified for connection, set the speed setpoints to 0.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

A02011 Function generator: The actual drive speed is not zero

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The speed actual value of a drive - selected to be connected to - is greater than the value for the standstill detection set using p1226.
Alarm value (r2124, interpret decimal):
Number of the drive object involved.

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Remedy: Set the relevant drives to zero speed before starting the function generator.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

A02015 Function generator: Drive enable signals missing

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The master control and/or enable signals are missing to connect to the specified drive.
Alarm value (r2124, interpret decimal):
Number of the drive object involved.
See also: p4815 (Function generator drive number)
Remedy: Fetch the master control to the specified drive object and set all enable signals.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

A02020 Function generator: Parameter cannot be changed

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: This parameter setting cannot be changed when the function generator is active (p4800 = 1).
See also: p4810 (Function generator mode), p4812 (Function generator physical address), p4813 (Function generator physical address reference value), p4815 (Function generator drive number), p4820 (Function generator signal shape), p4821 (Function generator period), p4822 (Function generator pulse width), p4823 (Function generator bandwidth), p4824 (Function generator amplitude), p4825 (Function generator 2nd amplitude), p4826 (Function generator offset), p4827 (Function generator ramp-up time to offset), p4828 (Function generator lower limit), p4829 (Function generator upper limit)
Remedy: - stop before parameterizing the function generator (p4800 = 0).
- if required, start the function generator (p4800 = 1).
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4800 (Function generator control)

A02025 Function generator: Period too short

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The value for the period is too short.
See also: p4821 (Function generator period)
Remedy: Check and adapt the value for the period.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4821 (Function generator period)

A02026 Function generator: Pulse width too wide

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The selected pulse width is too high.
The pulse width must be less than the period duration.
See also: p4822 (Function generator pulse width)

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Remedy: Reduce pulse width.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4821 (Function generator period), p4822 (Function generator pulse width)

A02030 Function generator: Physical address equals zero

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The specified physical address is zero.
See also: p4812 (Function generator physical address)
Remedy: Set a physical address with a value other than zero.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4812 (Function generator physical address)

A02040 Function generator: Impermissible value for offset

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The value for the offset is higher than the value for the upper limit or lower than the value for the lower limit.
See also: p4826 (Function generator offset)
Remedy: Adjust the offset value accordingly.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: p4826 (Function generator offset), p4828 (Function generator lower limit), p4829 (Function generator upper limit)

A02041 Function generator: Impermissible value for bandwidth

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The bandwidth, referred to the time slice clock cycle of the function generator has either been set too low or too high.
Depending on the time slice clock cycle, the bandwidth is defined as follows:
Bandwidth_max = 1 / (2 * time slice clock cycle)
Bandwidth_min = Bandwidth_max / 100000
Example:
Assumption: p4830 = 125 µs
--> Bandwidth_max = 1 / (2 * 125 µs) = 4000 Hz
--> Bandwidth_min = 4000 Hz / 100000 = 0.04 Hz
Note:
p4823: Function generator bandwidth
p4830: Function generator time slice clock cycle
See also: p4823 (Function generator bandwidth), p4830 (Function generator time slice cycle)
Remedy: Check the value for the bandwidth and appropriately adapt.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

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A02047 Function generator: Time slice clock cycle invalid

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The time slice cycle selected does not match any of the existing time slices.
See also: p4830 (Function generator time slice cycle)
Remedy: Input an existing time slice cycle. The existing time slices can be read out via p7901.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also: r7901 (Time slice cycle times)

A02050 Trace: Start not possible

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The trace has already been started.
See also: p4700 (Trace control)
Remedy: Stop the trace and, if necessary, start again.

A02055 Trace: Recording time too short

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The trace duration is too short.
The minimum is twice the value of the trace clock cycle.
See also: p4721 (Trace recording time)
Remedy: Check the selected recording time and, if necessary, adjust.

A02056 Trace: Recording cycle too short

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The selected recording cycle is shorter than the selected basis clock cycle 0 (p0110[0]).
See also: p4720 (Trace recording cycle)
Remedy: Increase the value for the trace cycle.

A02057 Trace: Time slice clock cycle invalid

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The time slice cycle selected does not match any of the existing time slices.
See also: p4723 (Time slice cycle for trace)
Remedy: Input an existing time slice cycle. The existing time slices can be read out via p7901.
See also: r7901 (Time slice cycle times)

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

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The selected time slice clock cycle cannot be used for the endless trace
See also: p4723 (Time slice cycle for trace)

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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 (Time slice cycle times)

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

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The selected time slice clock cycle cannot be used for the setting p4702 = 1 (2 x 8 recording channels).
See also: p4723 (Time slice cycle for trace)
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: p4702 (Trace recording channels count), r7901 (Time slice cycle times)

A02060 Trace: Signal to be traced missing

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: - a signal to be traced was not specified.
- the specified signals are not valid.
See also: p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)
Remedy: - specify the signal to be traced.
- check whether the relevant signal can be traced.

A02061 Trace: Invalid signal

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: - the specified signal does not exist.
- the specified signal can no longer be traced (recorded).
See also: p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)
Remedy: - specify the signal to be traced.
- check whether the relevant signal can be traced.

A02062 Trace: Invalid trigger signal

Drive object: All objects
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 trigger signal for the trace.
See also: p4711 (Trace trigger signal)
Remedy: Specify a valid trigger signal.

A02063 Trace: Invalid data type

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The specified data type to select a signal using a physical address is invalid.
See also: p4711 (Trace trigger signal), p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)
Remedy: Use a valid data type.

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A02070 Trace: Parameter cannot be changed

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The trace parameter settings cannot be changed when the trace is active.
See also: p4700 (Trace control), p4710 (Trace trigger condition), p4711 (Trace trigger signal), p4712 (Trace trigger threshold), p4713 (Trace tolerance band trigger threshold), p4714 (Trace tolerance band trigger threshold), p4715 (Trace bit mask trigger, bit mask), p4716 (Trace, bit mask trigger, trigger condition), p4720 (Trace recording cycle), p4721 (Trace recording time), p4722 (Trace trigger delay), p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3), p4780 (Trace physical address signal 0), p4781 (Trace physical address signal 1), p4782 (Trace physical address signal 2), p4783 (Trace physical address signal 3), p4789 (Trace physical address trigger signal), p4795 (Trace memory bank changeover)
Remedy: - stop the trace before parameterization.
- if required, start the trace.

A02075 Trace: Pretrigger time too long

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The selected pretrigger time must be shorter than the recording time.
See also: p4721 (Trace recording time), p4722 (Trace trigger delay)
Remedy: Check the pretrigger time setting and change if necessary.

F02080 Trace: Delete trace because units changed over

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The trace was cleared due to the fact that the units were changed over or the reference parameters changed.
Remedy:

A02099 Trace: Insufficient Control Unit memory

Drive object: All objects
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 (record) time.
- increase the trace clock cycle.
- reduce the number of signals to be traced (recorded).
See also: r4708 (Trace memory space required), r4799 (Trace memory location free)

A02100 CU: Computation dead time current controller too short

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The value in p0118 produces a dead time of one clock cycle because it lies before the setpoint becomes available. A possible cause could be, for example, that the system characteristics no longer match those parameterized after a component has been replaced.
Alarm value (r2134, floating point):
The minimum value for p0118 where a dead time no longer occurs.
Remedy: - set p0118 to a value greater than or equal to the alarm value.
- set p0117 to an automatic setting.
- check the firmware releases of the components involved.
See also: p0117 (Current controller computation dead time mode), p0118 (Current controller computation dead time)

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A02150 OA: Application cannot be loaded

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The system was not able to load an OA application.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
Note:
OA: Open Architecture
See also: r4950 (OA application count), r4955 (OA application identifier), p4956 (OA application activation), r4957 (OA application version)

F02151 (A) OA: Internal software error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (NONE, OFF1, OFF3)
VECTOR: 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 (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
- replace the Control Unit.
Note:
OA: Open Architecture
See also: r4950 (OA application count), r4955 (OA application identifier), p4956 (OA application activation), r4957 (OA application version)
Reaction upon A: NONE
Acknowl. upon A: NONE

F02152 (A) OA: Insufficient memory

Drive object: All objects
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 drive, function modules, data sets, OA applications, blocks, etc).
- use an additional Control Unit.
Note:
OA: Open Architecture
Reaction upon A: NONE
Acknowl. upon A: NONE

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F03500 (A) TM: Initialization

Drive object: All objects
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):
The thousands location = 1 ... 3:
The component number (p0151) of the module involved is specified at the ones, tens and hundreds position.
Remedy: - power-down the power supply for the Control Unit and power-up again.
- 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.
Reaction upon A: NONE
Acknowl. upon A: NONE

A03501 TM: Sampling time change

Drive object: All objects
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) TM: Analog input wire breakage

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The input current of the Terminal Module analog input has exceeded the threshold value parameterized in p4061[x].
This fault can only occur, if p4056[x] = 3 (4 ... 20 mA with monitoring) is set.
Index x = 0: Analog input 0 (X522.1 to .3)
Index x = 1: Analog input 1 (X522.4 to .5)
Fault value (r0949, interpret decimal):
The component number (p0151) of the module involved is specified at the ones, tens and hundreds position.
The thousands position specifies the analog input involved: 0: Analog input 0 (AI 0), 1: Analog input 1 (AI 1)
Remedy: Check the connection to the signal source for interruptions.
Check the magnitude of the impressed current - it is possible that the impressed signal is too low.
Please note that the input has a load resistor of 250 Ohm.
The input current measured by the Terminal Module can be read-out of r4052[x].
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A03506 (F, N) 24 V power supply missing

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
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).
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

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A03550 TM: Speed setpoint filter natural frequency > Shannon frequency

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The natural filter frequency of the speed setpoint filter (p1417) is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[0]
See also: p1417 (Speed setpoint filter 1 denominator natural frequency)
Remedy: Reduce the natural frequency of the speed setpoint filter (PT2 low pass) (p1417).

F03590 (N, A) TM: Module not ready

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The Terminal Module involved does not send a ready signal and no valid cyclic data.
Fault value (r0949, interpret decimal):
Drive object number of the Terminal Module involved.
Remedy: - check the 24 V power supply.
- check the DRIVE-CLiQ connection.
- check whether the sampling time of the drive object involved is not equal to zero (p4099[0]).
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A05000 (N) Power unit: Heatsink overtemperature

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The alarm threshold for overtemperature at the inverter heatsink has been reached. The response is set using p0290.
If the temperature of the heatsink 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?
Reaction upon N: NONE
Acknowl. upon N: NONE

A05001 (N) Power unit: Chip overtemperature

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: Alarm threshold for overtemperature of the power semiconductor in the AC converter has been reached. The response is set using p0290.
If the chip temperature increases by an additional 15 K, then fault F30025 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?
- pulse frequency too high?
See also: r0037 (Control Unit temperature), p0290 (Power unit overload response)
Reaction upon N: NONE
Acknowl. upon N: NONE

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A05002 (N) Power unit: Air intake overtemperature

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The alarm threshold for the air intake overtemperature has been reached. For air-cooled power units, the threshold is 42 degrees Celcius (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.

Reaction upon N: NONE
Acknowl. upon N: NONE

A05003 (N) Power unit: Electronics board overtemperature

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The alarm threshold for the overtemperature of the electronics module has been reached. The response is set using p0290.
If the temperature of the electronics module increases by an additional 5 K, then fault F30036 is initiated.
Remedy: Check the following:
- is the ambient temperature within the defined limit values?
- has the fan failed? Check the direction of rotation.

Reaction upon N: NONE
Acknowl. upon N: NONE

A05004 (N) Power unit: Rectifier overtemperature

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
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 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 fan failed? Check the direction of rotation.
- has a phase of the line supply failed?
- is an arm of the supply (incoming) rectifier defective?

Reaction upon N: NONE
Acknowl. upon N: NONE

A05005 Cooling system: Cooling medium flow rate too low

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: Cooling system: Alarm - flow rate has fallen below the alarm value
Remedy:

A05006 (N) Power unit: Overtemperature chip to heatsink

Drive object: A_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause:

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Remedy: See also: r0037 (Control Unit temperature), p0290 (Power unit overload response)
Reaction upon N: NONE
Acknowl. upon N: NONE

N05007 (A) Power unit: Overtemperature thermal model alarm

Drive object: A_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The temperature difference between the heatsink 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 (Control Unit temperature)

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.

Reaction upon A: NONE
Acknowl. upon A: NONE

F05050 Parallel circuit: Pulse enable in spite of pulse inhibit

Drive object: A_INF, B_INF, S_INF, VECTOR
Reaction: A_INFEED: OFF2 (NONE, OFF1)
VECTOR: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: A power unit signals that the pulses are enabled although the pulses are inhibited.
Fault value (r0949, interpret decimal):
Number of the power unit involved.
Remedy: The power unit is defective and must be replaced.

F05051 Parallel circuit: Power unit pulse enable missing

Drive object: A_INF, B_INF, S_INF, VECTOR
Reaction: A_INFEED: OFF2 (NONE, OFF1)
VECTOR: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: For one or several power units, the pulses were not able to be enabled.
Fault value (r0949, interpret decimal):
Number of the power unit involved.
Remedy:
- acknowledge power unit faults that are still present.
- inhibit the pulses of the power unit involved (p7001).

A05052 (F) Parallel circuit: Illegal current dissymmetry

Drive object: A_INF, B_INF, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The deviation of the individual currents of the power units exceeds the alarm threshold specified in p7010.
Alarm value (r2124, interpret decimal):
1: Phase U.
2: Phase V.
3: Phase W.

Remedy:
- inhibit the pulses of the faulted power unit (p7001).
- check the connecting cables. Loose contacts can cause current spikes.
- the motor reactors are non-symmetrical or faulty and must be replaced.
- the CTs must be calibrated or replaced.

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Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY

A05053 (F) Parallel circuit: Inadmissible DC link voltage dissymmetry

Drive object: A_INF, B_INF, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The deviation of the DC link voltage measured values exceeds the alarm threshold specified in p7011.
Remedy: - inhibit the pulses of the faulted power unit (p7001).
- check the DC link connecting cables.
- the DC link voltage measurement is incorrect and must be calibrated or renewed.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY

A05054 Parallel circuit: Power unit de-activated

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: For the drive object involved, fewer power unit components connected in parallel are active than exist in the target topology. Operation is only possible at reduced power (power de-rating).
Remedy: Re-activate the de-activated power unit components.
See also: p0125 (Activate/de-activate power unit components), p0895 (Activate/de-activate power unit components), p0897 (Parking axis selection)

F05055 Power circuit: Power units with different code numbers

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The code numbers of the power units do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different power unit code number was detected.
Remedy: For parallel circuit configurations, only power units with identical power unit data may be used.

F05056 Parallel circuit: Power unit EPROM versions differ

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The EEPROM versions of the power units do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
Remedy: For parallel circuit configurations, only power units with identical EEPROM versions may be used.

F05057 Parallel circuit: Power unit firmware versions differ

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The firmware versions of the power modules connected in parallel do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
Remedy: For parallel circuit configurations, only power modules with identical firmware versions may be used.

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F05058 Parallel circuit: VSM EEPROM versions differ

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The EEPROM versions of the Voltage Sensing Modules (VSM) do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
Remedy: For parallel circuit configurations, only Voltage Sensing Modules (VSM) with identical EEPROM versions may be used.

F05059 Parallel circuit: VSM firmware versions differ

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The firmware versions of the Voltage Sensing Module (VSM) do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
Remedy: For parallel circuit configurations, only Voltage Sensing Modules (VSM) with identical firmware versions may be used.

F05060 Parallel circuit: Power unit firmware version does not match

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Firmware from version V02.30.01.00 is required when connecting the power units in parallel.
Remedy: Update the firmware of the power units (at least V02.30.01.00).

F05061 Infeed, number of VSM

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The number of active Voltage Sensing Modules (VSM) for the drive object infeed with chassis power units is not correct.
For A_Infeed, each active power unit must be assigned an active VSM also for a parallel circuit configuration.
For S_Infeed, the active drive object, must be assigned at least one active VSM.
Fault value (r0949, interpret decimal):
Number of VSMs that are currently assigned to the drive object.
Remedy: Adapts the number of active Voltage Sensing Modules (VSM).

F06000 Infeed: Precharging monitoring time expired

Drive object: A_INF, B_INF, S_INF
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: After the line contactor closes the power unit does not signal the READY state within the monitoring time (p0857).
The end of the DC link pre-charging was not detected due to one of the following reasons:
- there is not line supply voltage.
- the line contactor is not closed.
- the line supply voltage is too low.
- the power unit has detected an internal fault.
- there is a DC link short-circuit.
- the DC link has a ground fault.
- the pre-charging resistors are overheated as there were too many pre-charging operations per time unit.
- the pre-charging resistors are overheated as the DC link capacitance is too high (maximum 20 mF).
- line supply voltage incorrectly set.

See also: p0857 (Power unit monitoring time)

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Remedy:
- check the line supply voltage
- check or energize the line contactor.
- check the monitoring time and, if required, increase (p0857).
- if required, observe additional power unit messages/signals.
- check the DC link regarding short-circuit or ground fault.
- wait until the pre-charging resistors have cooled down.
- reduce the DC link capacitance by removing the power units or supplementary modules.
- check the line supply voltage setting (p0210).

F06010 Infeed: Power unit EP 24 V missing in operation

Drive object: A_INF, B_INF, S_INF

Reaction: OFF2 (OFF1)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: In operation, withdraw the pulse enable at terminal EP at the Line Module (X21.3, X21.4).

Remedy:
- do not open the Line Side Switch in operation - only when the pulses are inhibited.
- check the wiring of the DP input (X21.3, X21.4) at the Line Module to exclude any poor contacts.

F06050 Infeed: Smart Mode not supported

Drive object: A_INF, B_INF, S_INF

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The power unit does not support the Smart Mode.

Remedy:
- set the suitable sampling time 250 µs <= p0115[0] <= 400 µs (e.g. by setting p0112 and p0115 to the factory setting).
- upgrade the power unit software and/or hardware for the Smart Mode. The availability of the Smart Mode function is displayed in r0192.
- for A_INF the following applies: De-activate the Smart Mode with p3400.0 = 0 and activate the voltage control with p3400.3 = 1. For booksize power units, it must be noted that for a supply voltage p0210 > 415 V only the Smart Mode is possible in the pre-setting. If DC link voltages above 660 V are permissible in the application, then voltage-controlled operation can be activated with p0280, p0210, p3400 and p3510. The information regarding p0210 should be carefully noted.

See also: r0192 (Power unit firmware properties)

F06052 Infeed: Filter temperature evaluation not supported

Drive object: A_INF, S_INF

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY

Cause: The power unit does not support filter temperature evaluation. This feature is required when using an Active Interface Module as line filter.

Remedy: Upgrade the power unit software.

See also: r0192 (Power unit firmware properties), p0220 (Infeed line filter type)

F06100 Infeed: Shutdown due to line supply undervoltage condition

Drive object: A_INF, B_INF, S_INF

Reaction: OFF2 (OFF1)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The filtered (steady-state) value of the line supply voltage is less than the fault threshold (p0283).
Fault condition: Vrms < p0283 * p0210
Fault value (r0949, floating point):
Actual steady-state line supply voltage.

See also: p0283 (Line supply undervoltage, shutdown (trip) threshold)

Remedy:
- check the line supply.
- check the line supply voltage (p0210).
- check the fault threshold (p0283).

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A06105 (F) Infeed: Line supply undervoltage

Drive object: A_INF, B_INF, S_INF
Reaction: NONE
Acknowledge: NONE
Cause: The filtered (steady-state) value of line supply voltage is lower than the alarm threshold (p0282).
Alarm condition: Vrms < p0282 * p0210
Alarm value (r2124, floating point):
Actual steady-state line supply voltage.
See also: p0282 (Line supply undervoltage, alarm threshold)
Remedy: - check the line supply.
- check the line supply voltage (p0210).
- check the alarm threshold (p0282).

Reaction upon F: NONE (OFF1, OFF2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

F06200 Infeed: Failure of one or several line phases

Drive object: A_INF, B_INF, S_INF
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: Failure of one or several line phases.
The fault can be output in two operating states:
1. During the power-on phase of the infeed unit.
The measured line supply angle deviates from the regular characteristic for a 3-phase system - the PLL cannot be synchronized.
The fault occurs immediately after power-up if, when operating with a VSM, the phase assignment L1, L2, L3 at the VSM differs from the phase assignment at the power unit.
2. While the infeed is operational.
After a voltage dip has been detected (note A06205) in one or several line phases a fault occurred within 100 ms (also refer to other relevant messages).
Probable causes of the fault:
- voltage dip on the line side or phase phase failure lasting longer than 10 ms.
- overload condition on the load side with peak current.
- commutating reactor missing.

Remedy: - check the line supply and fuses.
- check the connection and size (rating) of the line commutating reactor.
- check and correct the phase assignment at the VSM and at the power unit.
- check the load.
- if failed in operation, carefully note the previous alarm messages A6205 with alarm values.
See also: p3463 (Infeed, line angle change, phase failure detection)

A06205 (F) Infeed: Voltage dip in at least one line supply phase

Drive object: A_INF, B_INF, S_INF
Reaction: NONE
Acknowledge: NONE
Cause: Voltage dip or overvoltage in one or several line supply phases has been detected in operation.
The pulses are then canceled for a time of at least 8 ms. The operating signal of the infeed unit in r0863.0 remains and the pulse inhibit due to the phase failure is displayed in r3405.2.
Alarm value (r2124, bitwise coded cause of the alarm):
Bit 0: Line angle deviation (limit value p3463) due to a line supply fault
Bit 2: Active current deviation
Bit 3: Line frequency deviation (limit values: 115 % * p0284, 85 % * p0285)
Bit 4: Line overvoltage (limit value130 % * p0281)
Bit 5: Line undervoltage (limit value 20 % * p0210)
Bit 7: Peak current fault
Bit 8: Smart Mode without VSM (p3400.5 = 0): Line angle deviation
Bit 9: Smart Mode: DC link voltage dip

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Remedy: Generally, the following applies when an alarm message is output:
- check the line supply and fuses.
- check the line supply quality and system fault level.
- check the load.

Dependent on the alarm value in r2124, the following applies:
Bit 0 = 1: Line fault occurred or poor/incorrect controller setting. For poor line quality or frequent line supply changeover operations, when required, limit value p3463 can be increased until the alarm value no longer occurs.
Bit 2 = 1: Line fault occurred or poor/incorrect controller setting. - check the controller setting and load.
Bit 3 = 1: Line fault occurred. For poor line quality or frequent line changeover operations, when required, limit values p0284 and p0285 can be increased until the alarm value no longer occurs.
Bit 4 = 1: Line interrupted or line overvoltage has occurred.
Bit 5 = 1: Line interrupted or line undervoltage has occurred.
Bit 7 = 1: Peak current trip due to line fault or overload. Check the load.
Bit 8 = 1: Line fault occurred.
Bit 9 = 1: Line undervoltage or overload. Check the load.
See also: r3405 (Status word infeed), p3463 (Infeed, line angle change, phase failure detection)

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

F06210 Infeed: Summed current too high

Drive object: A_INF, B_INF, S_INF

Reaction: OFF2 (OFF1)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The smoothed sum of the phase currents (i1 + i2 + i3) is greater than 4 % of the maximum power unit current (r0209).
Possible causes:
- the DC link has a ground fault that results in a high summed current (r0069.6). The DC component in the line currents can damage/destroy the power unit, commutating reactor or line filter!
- the zero point calibration of the current measurement was not carried out (p3491, A06602).
- defective current measurement in the power unit.

Fault value (r0949, floating point):
Smoothed sum of the phase currents.

Remedy:
- check the DC link for a low-ohmic or high-ohmic ground fault and if one is present, remove.
- increase the monitoring time of the current-offset measurement (p3491).
- if required, replace the power unit.

A06215 (F) Infeed: Summed current too high

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The smoothed sum of the phase currents (i1 + i2 + i3) is greater than 3 % of the maximum power unit current (r0209).
Possible causes:
- the DC link has a ground fault that results in a high summed current (r0069.6). The DC component in the line currents can damage/destroy the power unit, commutating reactor or line filter!
- the zero point calibration of the current measurement was not carried out (p3491, A06602).
- defective current measurement in the power unit.

Alarm value (r2124, floating point):
Smoothed sum of the phase currents.

Remedy:
- check the DC link for a low-ohmic or high-ohmic ground fault and if one is present, remove.
- increase the monitoring time of the current-offset measurement (p3491).
- if required, replace the power unit.

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

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A06250 (F) Infeed: Defective capacitor(s) in at least one phase of line filter

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: A change in the line filter capacitance was detected in at least line phase.
The voltages and phase currents of the line filter, measured using a Voltage Sensing Module (VSM), indicated a deviation of the filter capacitances from the value parameterized in p0221.
A change or a defect of the line filter capacitors results in a shift of the resonant frequencies and can result in severe damage to the drive system.
Alarm value (r2124, floating point):
The calculated actual capacitance in µF (rounded-off to an integer number).
The 1st decimal point specifies the number of the phase (1, 2, 3) where the capacitance deviates from the specified value.

Remedy: - check the parameterized value of the filter capacitance (p0221).
- check the correct wiring of the Voltage Sensing Module (VSM):
Differential voltages u12 and u23 must be present at the 100 V/690 V inputs of the VSM; the phase currents of the line filter must be connected to the 10 V inputs through a current - voltage converter.
- check the alarm limits for the permissible filter capacitance deviation (p3676).
- check the normalization of the line supply voltage measurement using the VSM (p3660).
- check the normalization of the filter current measurement using the VSM (p3670).
- check the line filter capacitors and if required, replace the line filter.
See also: p0221 (Infeed filter capacitance), p3660 (VSM input line supply voltage, voltage scaler), p3670 (VSM 10 V input CT gain), p3676 (VSM line filter capacitance alarm threshold)

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A06260 Infeed: Temperature in the line filter too high

Drive object: A_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The temperature monitoring in the line filter has responded.
If the temperature remains too high during the complete monitoring time, this results in fault F06261.
Note:
The temperature monitoring is only available for an active interface module.

Remedy: - ensure the correct and reliable connection of the line filter temperature switch with input X21 of the infeed.
- ensure the connection of the line filter specified for the infeed being used. Check the line filter type (p0220[0]).
- reduce the ambient temperature of the line filter.
- reduce the load on the infeed and the filter module.
- check the magnitude of the line supply voltage.
- the internal fan of the filter module is defective. If required, replace the fan.
- defective temperature switch of the filter module. If required, replace the filter module.

F06261 Infeed: Temperature in the line filter permanently too high

Drive object: A_INF, S_INF

Reaction: OFF2 (OFF1)

Acknowledge: IMMEDIATELY

Cause: After the temperature monitoring responded, the temperature in the line filter was permanently exceeded.
Note:
The temperature monitoring is only available for an active interface module.

Remedy: - ensure the correct and reliable connection of the line filter temperature switch with input X21 of the infeed.
- ensure the connection of the line filter specified for the infeed being used. Check the line filter type (p0220[0]).
- reduce the ambient temperature of the line filter.
- reduce the load on the infeed and the filter module.
- check the magnitude of the line supply voltage.
- the internal fan of the filter module is defective. If required, replace the fan.
- defective temperature switch of the filter module. If required, replace the filter module.

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F06262 Infeed: Temperature switch in the line filter open when powering-up

Drive object: A_INF, S_INF
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: When powering-up the infeed, the temperature in the line filter is too high. Powering-up is prevented.
Remedy:
- ensure the correct and reliable connection of the line filter temperature switch with input X21 of the infeed.
- ensure the connection of the line filter specified for the infeed being used. Check the line filter type (p0220[0]).
- the filter temperature is too high. Allow the system to cool down.
- the internal fan of the filter module is defective. If required, replace the fan.
- defective temperature switch of the filter module. If required, replace the filter module.

F06300 Infeed: Line voltage too high at power on

Drive object: A_INF, B_INF, S_INF
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The RMS line supply voltage Vrms was so high when powering-up that controlled operation is not possible without exceeding the permissible maximum voltage in the DC link (p0280).
Fault condition: Vrms * 1.5 > p0280.
Fault value (r0949, floating point):
Lowest possible controlled DC link voltage for the line supply voltage presently connected.
See also: p0280 (DC link voltage maximum steady-state)
Remedy:
- check the line supply voltage
- check the maximum DC link voltage and if required, increase (p0280).
- check the line supply voltage and compare with the actual line supply voltage (p0210).
- check whether the power unit is dimensioned for the line supply voltage actually being used.

See also: p0210 (Drive unit line supply voltage), p0280 (DC link voltage maximum steady-state)

A06301 (F) Infeed: Line supply overvoltage

Drive object: A_INF, B_INF, S_INF
Reaction: NONE
Acknowledge: NONE
Cause: The filtered (steady-state) value of the rms line supply voltage Vrms is higher than the alarm threshold (p0281).
Alarm condition: Vrms > p0281 * p0210.
Alarm value (r2124, floating point):
Actual steady-state line supply voltage.
See also: p0281 (Line supply overvoltage, warning threshold)
Remedy:
- check the line supply.
- check the line supply voltage (p0210).
- check the alarm threshold (p0281).

See also: p0210 (Drive unit line supply voltage), p0281 (Line supply overvoltage, warning threshold)
Reaction upon F: NONE (OFF1, OFF2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

F06310 (A) Infeed: Supply voltage (p0210) incorrectly parameterized

Drive object: A_INF, B_INF, S_INF
Reaction: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: After pre-charging was completed, the line supply voltage Vrms was calculated using the measured DC link voltage. This voltage Vrms is not within the tolerance range of the supply voltage.
The following applies for the tolerance range: 85 % * p0210 < Vrms < 110 % * p0210.
Alarm value (r2124, floating point):
Line supply voltage Vrms present.
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)
Reaction upon A: NONE
Acknowl. upon A: NONE

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F06310 (A) Supply voltage (p0210) incorrectly parameterized

Drive object: SERVO
Reaction: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: For AC/AC drive units, the measured DC voltage lies outside the tolerance range after pre-charging has been completed. The following applies for the tolerance range: 1.16 * p0210 < r0070 < 1.6 * p0210.
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)
Reaction upon A: NONE
Acknowl. upon A: NONE

F06310 (A) Supply voltage (p0210) incorrectly parameterized

Drive object: VECTOR
Reaction: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: For AC/AC drive units, the measured DC voltage lies outside the tolerance range after pre-charging has been completed: 1.16 * p0210 < r0070 < 1.6 * p0210.
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)
Reaction upon A: NONE
Acknowl. upon A: NONE

F06311 Infeed: Supply voltage (p0210) fault

Drive object: A_INF, B_INF, S_INF
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: After pre-charging was completed, the line supply voltage Vrms was calculated using the measured DC link voltage. This voltage Vrms does not lie within the extended permissible tolerance range of the line supply voltage for 230 V applications.
The following applies for the tolerance range: 75 % * p0210 < Vrms < 120 % * p0210.
Alarm value (r2124, floating point):
Line supply voltage Vrms present.
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)

F06320 Master/slave: Multiplexer control not valid

Drive object: A_INF
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Values 0, 1, 2 and 3 are valid to control the multiplexer via CI: 3572. In this case, an invalid value was identified. The control remains effective with the previous value.
Fault value (r0949, interpret decimal):
Invalid value to control the multiplexer.
See also: p3572 (Master/slave active current setpoint, multiplexer selection)
Remedy: - check the interconnection to control the multiplexer (CI: p3572).
- check the signal source signal value of the BICO interconnection.
See also: p3572 (Master/slave active current setpoint, multiplexer selection)

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A06350 (F) Infeed: Measured line frequency too high

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The actual line frequency f_line is higher than the parameterized alarm threshold (f_line > p0211 * p0284).
The alarm can be output in two operating states:
1. During the power-on phase of the infeed unit.
Consequence:
Synchronization of the infeed to the line supply is interrupted and is restarted.
2. While the infeed is operational.
Consequence:
The infeed remains in the operating (run) state and alarm A6350 is output. This signifies a critical operational fault.
Alarm value (r2124, floating point):
Actual line frequency determined.
See also: p0284 (Line supply frequency exceeded, alarm threshold)

Remedy: - check the parameterized line frequency and if required change (p0211).
- check the alarm threshold (p0284).
- check the line supply.
- check the line supply quality.
See also: p0211 (Rated line freq), p0284 (Line supply frequency exceeded, alarm threshold)

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A06351 (F) Infeed: Measured line frequency too low

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The actual line frequency f_line is lower than the parameterized alarm threshold (f_line < p0211 * p0285).
The alarm can be output in two operating states:
1. During the power-on phase of the infeed unit.
Consequence:
Synchronization of the infeed to the line supply is interrupted and is restarted.
2. While the infeed is operational.
Consequence:
The infeed remains in the operating (run) state and alarm A06351 is output. This signifies a critical operational fault.
Alarm value (r2124, floating point):
Actual line frequency determined.
See also: p0285 (Line supply frequency fallen below, alarm threshold)

Remedy: - check the parameterized line frequency and if required change (p0211).
- check the alarm threshold (p0285).
- check the line supply.
- check the line supply quality.
See also: p0211 (Rated line freq), p0285 (Line supply frequency fallen below, alarm threshold)

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A06400 Infeed: Line supply data identification selected/active

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The line supply data identification is selected and active.
The line inductance and the DC link capacitance are measured at the next pulse enable.
SM150:
The Active Line Module is synchronized the next time that the pulses are enabled and the identification mode, selected in p3410 is carried out or the identification mode, displayed in r6442 is presently active. The INFEED_READY signal is not generated.
See also: p3410 (Infeed identification method)

Remedy: No remedial action required.

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F06500 Infeed: Line synchronization not possible

Drive object: A_INF, B_INF, S_INF
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The line synchronization is not possible within the monitoring time.
The infeed was re-synchronized to the line supply because it was interrupted due to a line frequency that was determined to be either too low or too high.
After 20 attempts, synchronization - and therefore also the power-on operation - were interrupted.
Remedy: - check the parameterized line frequency and if required change (p0211).
- check the setting of the threshold values (p0284, p0285).
- check the line supply.
- check the line supply quality.
See also: p0211 (Rated line freq), p0284 (Line supply frequency exceeded, alarm threshold), p0285 (Line supply frequency fallen below, alarm threshold)

A06601 (F) Infeed: Current offset measurement interrupted

Drive object: A_INF, B_INF, S_INF
Reaction: NONE
Acknowledge: NONE
Cause: Defective current measurement or a DC current is present during the offset measurement.
Alarm value (r2124, interpret decimal):
1: Excessively high phase current has occurred during the current-offset calibration.
2: The measured current - offset is greater than the 3% of the maximum permissible converter current (e.g. due to a ground fault in the DC link).
Remedy: Re alarm value = 1:
- possible counter-measure if there is no line contactor: Power-up an adequately long time before OFF1 = 1.
Re alarm value = 2:
- defective current measurement or a DC current is present during the offset measurement.
- check the DC link for a ground fault.
Reaction upon F: NONE (OFF1, OFF2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

A06602 (F) Infeed: Current offset measurement not possible

Drive object: A_INF, B_INF, S_INF
Reaction: NONE
Acknowledge: NONE
Cause: After an OFF1 = 1 no valid current offset measurement was able to be made within the monitoring time (p3491) before closing the line contactor. The current offset is set to 0.
See also: p3491 (Infeed I-offset measurement monitoring time)
Remedy: - check the DC link for a ground fault. A ground fault can destroy parts and components!
- Check the monitoring time setting and if required increase (p3491). At least 100 ms is required for a valid measurement (p3491 > 100 ms).
Notice:
If there is no valid measurement, then under certain circumstances the quality of the DC link control will be reduced.
See also: p3491 (Infeed I-offset measurement monitoring time)
Reaction upon F: NONE (OFF1, OFF2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

F06700 (A) Infeed: Switch line contactor for load condition

Drive object: A_INF, B_INF, S_INF
Reaction: NONE (OFF2)
Acknowledge: IMMEDIATELY
Cause: For an ON command, the infeed line contactor should be switched under load.

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Remedy: - do not load the DC link if the infeed has not issued an operating signal (r0863.0 = 1).
- after the infeed has been powered-down, all power units connected to the DC link should be powered-down. To realize this, the operating signal of the infeed (r0863.0) must be suitable interconnected.

Reaction upon A: NONE

Acknowl. upon A: NONE

A06800 (F) Infeed: Maximum steady-state DC link voltage reached

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The DC link voltage setpoint has reached the maximum steady-state voltage parameterized in p0280.
The DC link voltage is increased by the modulation depth reserve controller for the following reasons:
- modulation depth reserve is too low (p3480).
- line supply voltage is too high.
- supply voltage (p0210) parameterized to be too low.
- excessively high setpoint for the reactive line current.

Remedy: - check the line supply voltage setting (p0210).
- check the line supply for an overvoltage condition.
- reduce the modulation depth reserve (p3480).
- reduce the reactive current setpoint.
See also: p0210 (Drive unit line supply voltage), p0280 (DC link voltage maximum steady-state), p3480 (Infeed modulation depth limit)

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A06810 (F) Infeed: DC link voltage alarm threshold

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: In operation, the DC link voltage has dropped to below the alarm threshold. The alarm threshold is obtained from the sum of p0279 and r0296.
Possible causes include:
- line supply voltage dip or another line supply fault
- overload of the infeed
- for ALM: Incorrect controller parameterization
See also: p0279 (DC link voltage offset alarm threshold), r0296 (DC link voltage undervoltage threshold)

Remedy: - check the line voltage and line supply quality.
- reduce the power drawn, avoid step-like load changes
- for ALM: Adapt the controller parameterization, e.g. using an automatic line supply identification (p3410=4, 5)

Reaction upon F: NONE (OFF1, OFF2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

A06900 (F) Braking Module: Fault (1 -> 0)

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: The Braking Module signals "Fault (1 -> 0)" via terminal X21.4.
This signal is interconnected via binector input BI: p3866[0...7].
See also: p3866 (Braking Module fault)

Remedy: - reduce the number of braking operations.
- check binector input BI: p3866[0...7] and the wiring from terminal X21.4 of the particular braking module.

Reaction upon F: NONE (OFF2)

Acknowl. upon F: IMMEDIATELY

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A06901 Braking Module: Pre-alarm I2t shutdown

Drive object: A_INF, B_INF, S_INF
Reaction: NONE
Acknowledge: NONE
Cause: The Braking Module signals "Pre-alarm I2t shutdown" via terminal X21.3.
This signal is interconnected via binector input p3865[0...7].
Note:
The pre-alarm I2t shutdown is only possible for "booksize" formats. This function is not supported for "chassis" formats.
Remedy: - reduce the number of braking operations.
- check binector input BI: p3865[0...7] and the wiring from terminal X21.3 of the particular Braking Module.

A06904 (N) Braking Module internal is inhibited

Drive object: B_INF
Reaction: NONE
Acknowledge: NONE
Cause: The internal Braking Module was inhibited via the binector input BI: p3680 = 1 signal.
In the inhibited state, energy cannot be dissipated using the braking resistor.
See also: p3680 (Braking Module internal inhibit)
Remedy: Release the internal Braking Module (BI: p3680 = 0 signal).
Reaction upon N: NONE
Acknowl. upon N: NONE

A06905 Braking Module internal I2t shutdown alarm

Drive object: B_INF
Reaction: NONE
Acknowledge: NONE
Cause: The internal Braking Module outputs an alarm due to the high I2t value.
80% of the maximum switch-on duration of the braking resistor has been reached.
Note:
This message is also displayed via BO: p3685.
See also: r3685 (Digital Braking Module: Pre-alarm I2t shutdown)
Remedy: Reduce the number of braking operations.

F06906 (A) Braking Module internal fault

Drive object: B_INF
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The internal Braking Module outputs a fault due to overcurrent or an excessively high I2t value and is therefore inhibited.
Note:
This message is also displayed via BO: p3686.
Fault value (r0949, interpret bitwise binary):
Bit 0 = 1: I2t exceeded
Bit 1 = 1: overcurrent
See also: r3686 (Digital Braking Module Fault)
Remedy: Reduce the number of braking operations.
Reaction upon A: NONE
Acknowl. upon A: NONE

F06907 Braking Module internal overtemperature

Drive object: B_INF
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: The temperature sensor connected to the braking resistor signals an overtemperature. The Braking Module is still active. If the overtemperature continues for an additional 60s, the Braking Module is shut down (F6908).
See also: r3687 (Digital Braking Module pre-alarm overtemperature)

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Remedy: - reduce the temperature at the sensor.
- check the temperature sensor connection.

F06908 Braking Module internal shutdown due to overtemperature

Drive object: B_INF
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: Shutdown of the Braking Module due to overtemperature at the temperature sensor of the braking resistor for more than 60s.
See also: r3688 (Digital Braking Module fault overtemperature)
Remedy: - reduce the temperature at the sensor.
- check the temperature sensor connection.

F06909 Braking Module internal Vce fault

Drive object: B_INF
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Trip due to Vce fault. Collector emitter voltage dip (Vce)
See also: r3689 (Digital Braking Module Vce fault)
Remedy: - Power ON
- replace the unit.

F07011 Drive: Motor overtemperature

Drive object: SERVO, VECTOR
Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: KTY:
The motor temperature has exceeded the fault threshold (p0605) or the timer stage (p0606) after the alarm threshold was exceeded (p0604) has expired.
VECTOR: The response parameterized in p0610 becomes active.
PTC:
The response threshold of 1650 Ohm was exceeded and the timer stage (p0606) has expired.
VECTOR: 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):
For SME selected (p0601 = 10), number of the sensor channel leading to the message.
See also: p0604 (Motor overtemperature alarm threshold), p0605 (Motor overtemperature fault threshold), p0606 (Motor overtemperature timer), p0610 (Motor overtemperature response)
Remedy: - reduce the motor load.
- check the ambient temperature.
- check the wiring and sensor connector.
See also: p0604 (Motor overtemperature alarm threshold), p0605 (Motor overtemperature fault threshold), p0606 (Motor overtemperature timer)

A07015 Drive: Motor temperature sensor alarm

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: An error was detected when evaluating the temperature sensor set in p0600 and 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, 1 s after alarm A07015.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 1630 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Alarm value (r2124, interpret decimal):
For SME selected (p0601 = 10), number of the sensor channel leading to the message.

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Remedy: - check that the sensor is connected correctly.
- check the parameterization (p0600, p0601).
See also: r0035 (Temperature input), p0600 (Motor temperature sensor for monitoring), p0601 (Temperature sensor, sensor type), p0607 (Temperature sensor fault timer)

F07016 Drive: Motor temperature sensor fault

Drive object: SERVO, VECTOR

Reaction: OFF1 (NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: An error was detected when evaluating the temperature sensor set in p0600 and p0601.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 1630 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 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, 1 s after alarm A07015.
Fault value (r0949, interpret decimal):
For SME selected (p0601 = 10), number of the sensor channel leading to the message.
See also: p0607 (Temperature sensor fault timer)

Remedy: - check that the sensor is connected correctly.
- check the parameterization (p0600, p0601).
- induction motors: De-activate temperature sensor fault (p0607 = 0).
See also: r0035 (Temperature input), p0600 (Motor temperature sensor for monitoring), p0601 (Temperature sensor, sensor type), p0607 (Temperature sensor fault timer)

F07080 Drive: Incorrect control parameter

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR

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.
The following parameter numbers only occur as fault values for vector drives:
p0310, for synchronous motors: p0341, p0344, p0350, p0357
The following parameter numbers do not occur as fault values for synchronous motors:
p0354, p0358, p0360
See also: p0310 (Rated motor frequency), p0311 (Rated motor speed), p0341 (Motor moment of inertia), p0344 (Motor weight), p0350 (Motor stator resistance, cold), p0354 (Motor rotor resistance cold / damping resistance d axis), p0356 (Motor stator leakage inductance), p0357 (Motor stator inductance, d axis), p0358 (Motor rotor leakage inductance / damping inductance, d axis), p0360 (Motor magnetizing inductance/magn. inductance, d axis saturated), p0400 (Enc type selection), p0640 (Current limit), p1082 (Maximum speed), p1300 (Open-loop/closed-loop control operating mode)

Remedy: Modify the parameter indicated in the fault value (r0949) (e.g. p0640 = current limit > 0).
See also: p0311 (Rated motor speed), p0341 (Motor moment of inertia), p0344 (Motor weight), p0350 (Motor stator resistance, cold), p0354 (Motor rotor resistance cold / damping resistance d axis), p0356 (Motor stator leakage inductance), p0358 (Motor rotor leakage inductance / damping inductance, d axis), p0360 (Motor magnetizing inductance/magn. inductance, d axis saturated), p0400 (Enc type selection), p0640 (Current limit), p1082 (Maximum speed)

F07082 Macro: Execution not possible

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The macro cannot be executed.
Fault value (r0949, interpret hexadecimal):
The fault code is in byte 1, possibly supplementary information is in byte 2 and the high word contains the parameter number involved if this is available.
Fault codes:
Fault for the trigger parameter itself:
-20: Called file is not valid for parameter 15.

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-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).
Faults 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 parameter (or CDS-dependent).
-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 (Macro drive unit), p0700 (Macro Binector Input (BI)), p1000 (Macro Connector Inputs (CI) for speed setpoints), p1500 (Macro Connector Inputs (CI) for torque setpoints)

F07083 Macro: ACX file not found

Drive object: All objects
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 (Macro drive unit), p0700 (Macro Binector Input (BI)), p1000 (Macro Connector Inputs (CI) for speed setpoints), p1500 (Macro Connector Inputs (CI) for torque setpoints)
Remedy: - check whether the file is saved in the appropriate directory on the CompactFlash card.
Example:
If p0015 is set to 1501, then the selected ACX file must be located in the following directory:
... /PMACROS/DEVICE/P15/PM001501.ACX

F07084 Macro: Condition for WaitUntil not fulfilled

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The wait 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.

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F07085 Drive: Open-loop/closed-loop control parameters changed

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Parameters of the open-loop/closed-loop control had to be changed as they exceeded dynamic limits as a result of other parameters.
Fault value (r0949, interpret decimal):
The fault value includes the modified parameter number.
340: The motor and control parameters were automatically calculated (p0340 = 1), because the vector control was subsequently activated as configuration (r0108.2).
See also: p0640 (Current limit), p1082 (Maximum speed), p1300 (Open-loop/closed-loop control operating mode), p1800 (Pulse frequency)

Remedy: It is not necessary to change the parameters as they have already been correctly limited.

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

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR

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 (cause: e.g. the steady-state minimum/maximum limit or that defined in the application was violated). The values of the parameters were set to the corresponding violated minimum/maximum limit or to the factory setting.
Fault value (r0949, parameter):
Diagnostics parameter r9450 to display the parameters that were not able to be re-calculated.
See also: p0304 (Rated motor voltage), p0305 (Rated motor current), p0310 (Rated motor frequency), p0596 (Reference quantity, technological units), p2000 (Reference frequency), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

Remedy: Check the adapted parameter value and if required correct.
See also: r9450 (Displays para. that cannot be calc. after int. ref. value change)

F07087 Drive: Sensorless operation not possible for the selected pulse frequency

Drive object: SERVO

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Sensorless operation is not possible for the selected pulse frequency (p1800).
Sensorless operation is activated under the following conditions:
- the changeover speed for sensorless operation (p1404) is less than the maximum speed (p0322).
- a control type with sensorless operation has been selected (p1300).
- encoder faults of the motor encoder result in a fault response with sensorless operation (p0491).
See also: p0491 (Motor encoder fault response ENCODER), p1300 (Open-loop/closed-loop control operating mode), p1404 (Sensorless operation changeover speed), p1800 (Pulse frequency)

Remedy: Increase the pulse frequency (p1800).
Note:
In sensorless operation, the pulse frequency must be at least as high as half the current controller clock cycle (1/p0115[0]).

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F07088 Units changeover: Parameter limit violation due to units changeover

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A changeover of units was initiated.
Possible causes for the violation of a parameter limit are:
- when rounding-off a parameter corresponding to its decimal places, the steady-state minimum or maximum limit was violated.
- inaccuracies for the data type "Floating Point".
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), p0349 (System of units, motor equivalent circuit diagram data), p0505 (Selecting the system of units), p0595 (Selecting technological units)

Remedy: Check the adapted parameter values and if required correct.
See also: r9451 (Units changeover adapted parameters)

A07089 Changing over units: Adding a function module blocked if units changed over

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: An attempt was made to add a function module. This is not permissible if the units have already been changed over.
See also: p0100 (IEC/NEMA mot stds), p0349 (System of units, motor equivalent circuit diagram data), p0505 (Selecting the system of units)

Remedy: Restore units that have been changed over to the default value.

F07090 Drive: Upper torque limit less than the lower torque limit

Drive object: SERVO

Reaction: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: The upper torque limit is lower than the lower torque limit.

Remedy: P1 must be >= P2 if parameter P1 is connected to p1522 and parameter P2 to p1523.

F07100 Drive: Sampling times cannot be reset

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When resetting drive parameter (p0976) sampling times cannot be reset using p0111, p0112, p0115.
Fault value (r0949, interpret decimal):
Parameter whose setting prevents the sampling times being reset.
See also: r0110 (Basis sampling times)

Remedy: - continue to work with the set sampling times.
- before resetting the drive parameters, set the basic clock cycle p0110[0] to the original value.
See also: r0110 (Basis sampling times)

F07110 Drive: Sampling times and basic clock cycle do not match

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The parameterized sampling times do not match the basic clock cycle.
Fault value (r0949, interpret decimal):
The fault value specifies the parameter involved.
See also: r0110 (Basis sampling times), r0111 (Basis sampling time selection), p0115 (Sampling time for supplementary functions)

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Remedy: Enter the current controller sampling times so that they are identical to the basic clock cycle, e.g. by selecting p0112.
Note which basic clock cycle is selected in p0111.
The sampling times in p0115 can only be changed manually in the sampling times preset "Expert" (p0112).
See also: r0110 (Basis sampling times), r0111 (Basis sampling time selection), p0112 (Sampling times pre-setting p0115), p0115 (Sampling time for supplementary functions)

A07200 Drive: Master control ON/OFF1 command present

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The ON/OFF1 command is not 0, either via binector input p0840 (current CDS) or in control word p3982 bit 0.
Remedy: The signal at binector input p0840 (actual CDS) as well as p3982 bit 0 must be 0.

F07210 Master control PC/AOP inhibited

Drive object: A_INF, B_INF, SERVO, S_INF, TM41, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The transfer of master control is disabled via binector input p3985.
Remedy: Change the signal via binector input p3985.

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

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (NONE, OFF2, OFF3, STOP1, 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.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F07300 (A) Drive: Line contactor feedback signal missing

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
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 has dropped-out in operation.
- the line contactor has closed although the drive converter is powered-down.

Remedy: - check the setting of p0860.
- check the feedback circuit from the line contactor.
- increase the monitoring time in p0861.
See also: p0860 (Line cont. fdbk sig), p0861 (Line contactor monitoring time)

Reaction upon A: NONE
Acknowl. upon A: NONE

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F07311 Bypass motor switch

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault value: Bit field BYPASS_CONTACTOR_ERROR_STATE
Bit 1
BYPASS_CONTACTOR_ERR_FBK_ON_MISSING
Switch "Closed" feedback signal missing
Bit 2
BYPASS_CONTACTOR_ERR_FBK_OFF_MISSING
Switch "opened" feedback signal missing
Bit 3
BYPASS_CONTACTOR_ERR_TOO_SLOW
Switch feedback signal too slow:
After switching, the system waits for the positive feedback signal. If the feedback signal is received later than the specified time, then a fault trip (shutdown) is issued.
Bit 6
BYPASS_CONTACTOR_ERR_BYPASS_INCONSISTENCY
Drive switch feedback signal is not consistent with the bypass state:
When powering-up or for STAGING, the drive switch is closed.
See also: p1260 (Bypass configuration), r1261 (Bypass control/status word), p1266 (Bypass, control command), p1267 (Bypass changeover source configuration), p1269 (Bypass switch feedback signal), p1274 (Bypass switch monitoring time)

Remedy: - check the transfer of the feedback signals.
- check the switch

F07312 Bypass LSS:

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault value: Bit field BYPASS_CONTACTOR_ERROR_STATE
Bit 1
BYPASS_CONTACTOR_ERR_FBK_ON_MISSING
Switch "Closed" feedback signal missing
Bit 2
BYPASS_CONTACTOR_ERR_FBK_OFF_MISSING
Switch "opened" feedback signal missing
Bit 3
BYPASS_CONTACTOR_ERR_TOO_SLOW
Switch feedback signal too slow:
After switching, the system waits for the positive feedback signal. If the feedback signal is received later than the specified time, then a fault trip (shutdown) is issued.
Bit 6
BYPASS_CONTACTOR_ERR_BYPASS_INCONSISTENCY
Line Side Switch feedback signal is not consistent with the bypass state:
When powering-up or for STAGING, the Line Side Switch is closed without this having been requested from the bypass.
See also: p1260 (Bypass configuration), r1261 (Bypass control/status word), p1266 (Bypass, control command), p1267 (Bypass changeover source configuration), p1269 (Bypass switch feedback signal), p1274 (Bypass switch monitoring time)

Remedy: - check the transfer of the feedback signals.
- check the switch

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F07320 Drive: Automatic restart interrupted

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
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.
- there is no active ON command.
- 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 powered-up 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.
- issue an ON command (p0840).
- either increase or disable the monitoring time of the power unit (p0857).

A07321 Drive: Automatic restart active

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
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.
Remedy: - the automatic restart (AR) should, if required, be inhibited (p1210 = 0).
- an automatic restart can be directly interrupted by withdrawing the power-on command (BI: p0840).

A07329 (N) Drive: kT estimator, kT(iq) characteristic or voltage compensation does not function

Drive object: SERVO
Reaction: NONE
Acknowledge: NONE
Cause: A function of the function module "extended torque control" (r0108.1) was activated - however the (complete) function is not available.
Fault value (r0949, interpret decimal):
1...3: The kT estimator is active (p1780.3 = 1) without a functioning compensation of the voltage emulation error in the drive converter. This means that the accuracy is severely restricted.
1: The drive converter voltage emulation error "final value" is 0 (p1952).
2: The drive converter voltage emulation error "current offset" is 0 (p1953).
3: The compensation of the voltage emulation error is disabled (p1780.8 = 0).
4: The kT estimator (p1780.3 = 1), the kT(iq) characteristic (p1780.9 = 1) or the compensation of the voltage emulation error (p1780.8 = 1) was activated without activating the function module "extended torque control" (when the function module is activated, the following must apply: r0108.1 = 1).
Remedy: Re fault value = 1, 2:
- carry out an identification of the voltage emulation error in the drive converter (p1909.14 = 1, p1910 = 1).
- set the parameter to compensation the voltage emulation error in the drive converter (p1952, p1953).
Re fault value = 3:
- enable the compensation of the voltage emulation error in the drive converter (p1780.8 = 1).
Re fault value = 4:
- activate the function module "extended torque control" (r0108.1 = 1) or de-activate the corresponding functions (p1780.3 = 0, p1780.8 = 0, p1780.9 = 0).
Reaction upon N: NONE
Acknowl. upon N: NONE

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F07330 Flying restart: Measured search current too low

Drive object: VECTOR
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 FlyRestart: Not supported

Drive object: VECTOR
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:
Permanent-magnet and separately-excited synchronous motors (PEM, FEM): Operation with V/f characteristic.
Permanent-magnet synchronous motor (PEM): Sensorless operation without a Voltage Sensing Module (VSM) being connected.
Remedy: - de-activate the "flying restart" function (p1200 = 0).
- change the open-loop/closed-loop control mode (p1300).
- connect a Voltage Sensing Module (VSM) (voltage measurement).

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

Drive object: All objects
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, decimal):
9: DI/DO 9 (X122.8)
10: DI/DO 10 (X122.10)
11: DI/DO 11 (X122.11)
13: DI/DO 13 (X132.8)
14: DI/DO 14 (X132.10)
15: DI/DO 15 (X132.11)
Remedy: - set the terminal as input (p0728).
- de-select the measuring probe (p0488, p0489, p0580).
Reaction upon F: OFF1
Acknowl. upon F: IMMEDIATELY

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

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The DC link voltage controller has been activated because the upper switch-in threshold has been exceeded (r1242). The ramp-down times are automatically increased in order to maintain the DC link voltage (r0026) 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: p1240 (Vdc controller or Vdc monitoring configuration)
Remedy: If the controller is not to intervene:
- increase the ramp-down times.
- disable the Vdc max controller
If the ramp-down times are not to be changed:
- use a chopper or regenerative feedback unit
Reaction upon N: NONE
Acknowl. upon N: NONE

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

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The Vdc_max controller can no longer maintain the DC link voltage (r0026) below the limit value (r1242) 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.
- check whether the load duty cycle and load limits are within the permissible limits.

Reaction upon N: NONE
Acknowl. upon N: NONE

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

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The DC link voltage controller has been activated as the lower switch-in threshold has been fallen below (r1246). The kinetic energy of the motor is used in order to buffer the DC link. This brakes the drive.
See also: p1240 (Vdc controller or Vdc monitoring configuration)
Remedy: The alarm disappears when power supply returns.
Reaction upon N: NONE
Acknowl. upon N: NONE

F07403 (N, A) Drive: Lower DC link voltage threshold reached

Drive object: SERVO
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The DC link voltage monitoring is active (p1240 = 2, 3) and the lower DC link voltage threshold (p1248) was reached in the "Operation" state.
Remedy:
- check the line supply voltage.
- check the infeed module
- reduce the lower DC link threshold (p1248).
- switch-out (disable) the DC link voltage monitoring (p1240 = 0).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F07403 (N, A) Drive: Lower DC link voltage threshold reached

Drive object: VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The DC link voltage monitoring is active (p1240 , p1280 = 5, 6) and the lower DC link voltage threshold (r1246, r1286) was reached in the "Operation" state.
Remedy:
- check the line supply voltage.
- check the infeed module
- adapt the device supply voltage (p0210) or the switch-on level (p1245, p1285).
- disable the DC link voltage monitoring (p1240, p1280 = 0).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F07404 **Drive: Upper DC link voltage threshold reached**

Drive object: SERVO
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: The DC link voltage monitoring is active (p1240 = 1, 3) and the upper DC link voltage threshold (p1244) was reached in the "Operation" state.
Remedy:
- check the line supply voltage.
- check the infeed module or the Braking Module.
- increase the upper DC link voltage threshold (p1244).
- switch-out (disable) the DC link voltage monitoring (p1240 = 0).

F07404 **Drive: Upper DC link voltage threshold reached**

Drive object: VECTOR
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: The DC link voltage monitoring is active (p1240 , p1280 = 4, 6) and the upper DC link voltage threshold (r1242, r1282) was reached in the "Operation" state.
Remedy:
- check the line supply voltage.
- check the infeed module
- adapt the device supply voltage (p0210).
- disable the DC link voltage monitoring (p1240, p1280 = 0).

F07405 (N, A) **Drive: Kinetic buffering minimum speed not reached**

Drive object: VECTOR
Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: During kinetic buffering the speed fell below minimum speed (p1257 or p1297 for vector drives with V/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)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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

Drive object: VECTOR
Reaction: OFF3 (IASC / DCBRAKE, NONE, OFF1, OFF2, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: The maximum buffer time (p1255 and p1295 for vector drives with V/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)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A07409 **Drive: V/f control, current limiting controller active**

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The current limiting controller of the V/f control was activated because the current limit was exceeded.
Remedy: The alarm is automatically withdrawn when increasing the current limit (p0640), reducing the load or using a slower up ramp for the setpoint (reference) speed.

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F07410 Drive: Current controller output limited

Drive object: SERVO, VECTOR
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.
- no DC link voltage present.
- Motor Module defective.
- the "flying restart" function is not activated.

Remedy:
- connect the motor or check the motor contactor.
- check the DC link voltage (r0070).
- check the Motor Module.
- activate the "flying restart" function (p1200).

F07411 Drive: Flux controller output limited

Drive object: SERVO
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: The specified flux setpoint cannot be reached although 90% of the maximum current has been 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 (sensorless, open-loop controlled) in I2t limiting.
- the Motor Module is too small.

Remedy:
- correct the motor data.
- check the motor configuration.
- correct the current limits (p0640, p0323).
- reduce the induction motor load.
- if required, use a larger Motor Module.

F07412 Drive: Commutation angle incorrect (motor model)

Drive object: SERVO, VECTOR
Reaction: ENCODER (NONE, OFF2)
Acknowledge: IMMEDIATELY
Cause: An incorrect commutation angle was detected, that can result in a positive coupling in the speed controller.
Possible causes:
- the motor encoder is incorrectly adjusted with respect to the magnet position.
- the motor encoder is damaged.
- the angular commutation offset is incorrectly set (p0431).
- data to calculate the motor model has been incorrectly set (p0356 (motor-stator leakage inductance) and/or p0350 (motor-stator resistance) and/or p0352 (cable resistance).
- the changeover speed for the motor model is too low (p1752). The monitoring function only becomes effective above the changeover speed.
- the motor encoder speed signal is faulted.
- the control loop is instable due to incorrect parameterization.

Fault value (r0949, interpret decimal):
SERVO:
0: The comparison of the pole position angle from the encoder and the motor model resulted in an excessively high value (> 80 ° electrical).
1: -
VECTOR:
0: The comparison of the pole position angle from the encoder and the motor model resulted in an excessively high value (> 45 ° electrical).
1: The change in the speed signal from the motor encoder has changed by > p0492 within a current controller clock cycle.

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Remedy: - if the encoder mounting was changed - re-adjust the encoder.
- replace the defective motor encoder.
- correctly set the angular commutation offset (p0431).
- correctly set the motor stator resistance, cable resistance and motor-stator leakage inductance (p0350, p0352, p0356).
- increase the changeover speed for the motor model (p1752). The monitoring is completely de-activated for p1752 > p1082 (maximum speed)
Note:
For High Dynamic Motors (1FK7xxx-7xxx), for applications with a higher current, if necessary, the monitoring should be disabled.

F07413 Drive: Commutation angle incorrect (pole position identification)

Drive object: SERVO, VECTOR

Reaction: ENCODER (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: An incorrect commutation angle was detected, that can result in a positive coupling in the speed controller.
- within the pole position identification routine (p1982 = 2):
A difference of > 45° electrical to the encoder angle was determined.
- for VECTOR, within the encoder adjustment (p1990 = 2):
A difference of > 6 ° electrical to the encoder angle was determined.

Remedy: - correctly set the angular commutation offset (p0431).
- re-adjust the motor encoder after the encoder has been replaced.
- replace the defective motor encoder.
- check the pole position identification routine. If the pole position identification routine is not suitable for this motor type, then disable the plausibility check (p1982 = 0).

F07414 (A) Drive: Encoder serial number changed

Drive object: SERVO

Reaction: ENCODER (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: The serial number of the motor encoder of a synchronous motor has changed. The change was only checked for encoders with serial number (e.g. EnDat encoders) and build-in motors (e.g. p0300 = 401) or third-party motors (p0300 = 2).
Cause 1:
The encoder was replaced.
Cause 2:
A third-party, build-in or linear motor was re-commissioned.
Cause 3:
The motor with integrated and adjusted encoder was replaced.
Cause 4:
The firmware was updated to a version that checks the encoder serial number.

Remedy: Re causes 1, 2:
Carry out an automatic adjustment using the pole position identification routine. First, accept the serial number with p0440 = 1. Acknowledge the fault. Initiate the pole position identification routine with p1990 = 1. Then check that the pole position identification routine is correctly executed.
SERVO:
If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated.
or
Set the adjustment via p0431. In this case, the new serial number is automatically accepted.
or
Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.
Re causes 3, 4:
Accept the new serial number with p0440 = 1.

Reaction upon A: NONE

Acknowl. upon A: NONE

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N07415 (F) Drive: Angular commutation offset transfer running

Drive object: SERVO
Reaction: OFF2
Acknowledge: NONE
Cause: The angular commutation offset was automatically determined using p1990 = 1.
This fault causes the pulses to be canceled - this is necessary to transfer the angular commutation offset to p0431.
See also: p1990 (Encoder adjustment, determine angular commutation offset)
Remedy: The fault can be acknowledged without any additional measures.
Reaction upon F: OFF2
Acknowl. upon F: IMMEDIATELY

F07420 Drive: Current setpoint filter natural frequency > Shannon frequency

Drive object: SERVO
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[0]
Fault value (r0949, interpret hexadecimal):
Bit 0: Filter 1 (p1658, p1660)
Bit 1: Filter 2 (p1663, p1665)
Bit 2: Filter 3 (p1668, p1670)
Bit 3: Filter 4 (p1673, p1675)
Bit 8 ... 15: Data set number (starting from zero).
Remedy: - reduce the numerator or denominator natural frequency of the current setpoint filter involved.
- reduce the current controller sampling time (p0115[0]).
- switch-out the filter involved (p1656).

F07421 Drive: Speed setpoint filter natural frequency > Shannon frequency

Drive object: SERVO
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[1]
Fault value (r0949, interpret hexadecimal):
Bit 0: Filter 1 (p1417, p1419)
Bit 1: Filter 2 (p1423, p1425)
Bit 8 ... 15: Data set number (starting from zero).
Remedy: - reduce the numerator or denominator natural frequency of the speed setpoint filter involved.
- reduce the speed controller sampling time (p0115[1]).
- switch-out the filter involved (p1414).

F07422 Drive: Reference model natural frequency > Shannon frequency

Drive object: SERVO, VECTOR
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The natural filter frequency of the PT2 element for the reference model (p1433) is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[1]
Remedy: - reduce the natural frequency of PT2 element for reference model (p1433).
- reduce the speed controller sampling time (p0115[1]).

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F07423 Drive: APC filter natural frequency > Shannon frequency

Drive object: SERVO
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / (p0115[1] * x)
Fault value (r0949, interpret hexadecimal):
Bit 0: Filter 1.1 (p3711, p3713), x = 1
Bit 4: Filter 2.1 (p3721, p3723), x = p3706
Bit 5: Filter 2.2 (p3726, p3728), x = p3706
Bit 8: Filter 3.1 (p3731, p3733), x = p3707
Bit 9: Filter 3.2 (p3736, p3738), x = p3707
Bit 16 ... 32: Data set number (starting from zero)
Remedy: - reduce the numerator or denominator natural frequency of the filter involved.
- reduce the speed controller sampling time (p0115[1]) or the sub-sampling (p3706, p3707).
- switch-out the filter involved (p3704).

A07424 Drive: Operating condition for APC not valid

Drive object: SERVO
Reaction: NONE
Acknowledge: NONE
Cause: The APC function (Advanced Positioning Control) has identified an invalid operating condition.
Alarm value (r2124, interpret hexadecimal):
Bit 0 = 1:
APC is operating without encoder (sensorless).
Bit 1 = 1:
The load measuring system for APC, selected using p3701, has a fault. The APC function is disabled.
Bit 2 = 1:
The load measuring system for APC, selected using p3701, has a fault. The pulse de-coupling is disabled, i.e. the speed of the motor measuring system is used as speed for the closed-loop motor speed control.
Remedy: Re bit 0:
Only use the APC function in operation with an encoder.
Re Bit 1, 2:
Check the load measuring system.

F07429 Drive: DSC without encoder not possible

Drive object: SERVO
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The function DSC (Dynamic Servo Control) was activated although there is no encoder.
See also: p1191 (DSC position controller gain KPC)
Remedy: If there is no encoder and CI: p1191 (DSC position controller gain) is interconnected, then connector input CI: p1191 must have a 0 signal.

F07430 Drive: Changeover to open-loop torque controlled operation not possible

Drive object: SERVO
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: For sensorless operation, the converter cannot change over to closed-loop torque-controlled operation (BI: p1501).
Remedy: Do not attempt to cover over to closed-loop torque-controlled operation.

F07431 Drive: Changeover to sensorless operation not possible

Drive object: SERVO
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: For closed-loop torque control, the converter cannot change over to sensorless operation (p1404).
Remedy: Do not attempt to change over to sensorless operation.

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F07432 Drive: Synchronous motor without overvoltage protection

Drive object: SERVO
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: Under voltage conditions, a synchronous motor can generate an overvoltage condition that can destroy the drive system.
Fault value (r0949, interpret hexadecimal):
Associated Drive Data Set (DDS).
Remedy: Overvoltage protection can be implemented in the following ways:
- limit the maximum speed (p1082) without any additional protection.
The maximum speed without protection is calculated as follows:
Rotary motors: p1082 [rpm] <= 11.695 * p0297/p0316 [Nm/A]
Linear motors: p1082 [m/min] <= 73.484 * p0297/p0316 [N/A]
- use a voltage protection module (VPM) in conjunction with the function "Safe Torque Off" (p9601, p9801).
When a fault condition exists, the VPM short-circuits the motors. During the short-circuit, the pulses must be canceled - this means that the terminals for the function "Safe Torque Off" must be connected to the VPM.
When using a VPM, p0643 must be set to 1.
- activating the internal voltage protection (IVP) with p1231 = 3.
See also: p0643 (Overvoltage protection for synchronous motors), p1231 (Armature short-circuit / DC brake configuration)

F07433 Drive: Closed-loop control with encoder is not possible as the encoder has not been unparked

Drive object: SERVO
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The changeover to closed-loop control with encoder is not possible as the encoder has not been unparked.
Remedy: - check whether the encoder firmware supports the "parking" function (r0481.6 = 1).
- upgrade the firmware.
Note:
For long-stator motors (p3870.0 = 1), the following applies:
The encoder must have completed the unparking procedure (r3875.0 = 1) before a changeover can be made to closed-loop control with encoder. The encoder is unparked with a 0/1 edge at BI: p3876 and remains unparked until a 0 signal is again present.

F07434 Drive: It is not possible to change the direction using p1821 with the pulses enabled

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A drive data set was selected - with the pulses enabled - that has a different parameterized direction (p1821). It is only possible to change the motor direction using p1821 when the pulses are inhibited.
Remedy: - change over the drive data set with the pulses inhibited.
- ensure that the changeover to a drive data set does not result in the motor direction of rotation being reversed (i.e. for these drive data sets, the same value must be in p1821).
See also: p1821 (Direction reversal rotating field)

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

Drive object: SERVO, VECTOR
Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: During operation with sensorless vector control (r1407.1) the ramp-function generator was stopped (p1141) or bypassed (p1122). An internal setting command of the ramp-function generator output caused the set setpoint speed to be frozen or was not able to be realized.

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Remedy: - de-activate the holding command for the ramp-function generator (p1141).
- do not bypass the ramp-function generator (p1122).
- 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).
Note:
For sensorless vector control it is not practical to read-in the main setpoint of the speed control via p1155 or p1160 (p0922). In this case, the main setpoint should be injected before the ramp-function generator (p1070). The reason for this is that the ramp-function generator output is automatically set when transitioning from closed-loop speed controlled into open-loop speed controlled operation.

Reaction upon N: NONE

Acknowl. upon N: NONE

A07440 EPOS: Jerk time is limited

Drive object: SERVO, VECTOR

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 adjustment parameters

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The status of the absolute encoder adjustment has changed.
In order to permanently accept p2525 (encoder adjustment offset) it must be saved in a non-volatile fashion (p0971, p0977).

Remedy: None 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

Drive object: SERVO, VECTOR

Reaction: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The ratio between the multiturn resolution and the modular range (p2576) is not an integer number.
This results in the adjustment being set back, as the position actual value cannot be reproduced after power-off/power-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 without position tracking:
v = (p0421 * p2506 * p0433 * p2505) / (p0432 * p2504 * p2576)
2. Motor encoder with position tracking for the measuring gearbox:
v = (p0412 * p2506 * p2505) / (p2504 * p2576)
3. Motor encoder with position tracking for the load gearbox:
v = (p2721 * p2506 * p0433) / (p0432 * p2576)
4. Motor encoder with position tracking for the load and measuring gearbox:
v = (p2721 * p2506) / p2576
5. Direct encoder without position tracking:
v = (p0421 * p2506 * p0433) / (p0432 * p2576)

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6. Direct encoder with position tracking for the measuring gearbox:
v = (p0412 * p2506) / p2576
Note:
With position tracking, it is recommended that p0412 and p2721 are changed
See also: p0412 (Measuring gearbox, rotary absolute gearbox, revolutions, virtual), p0432 (Gearbox factor, encoder revolutions), p0433 (Gearbox factor, motor/load revolutions), p2504 (LR motor/load motor revolutions), p2505 (LR motor/load motor revolutions), p2506 (LR length unit LU per load revolution), p2576 (EPOS modulo correction, modulo range), p2721 (Load gearbox, rotary absolute gearbox, revolutions, virtual)

Reaction upon A: NONE
Acknowl. upon A: NONE

F07443 (A) LR: Reference point coordinate not in the permissible range

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
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.
Fault value (r0949, interpret decimal):
Limit value (absolute value) for the reference point coordinate.
Remedy: Set the reference point coordinate less than the limit value specified in the fault value.
See also: p2598 (EPOS reference point coordinate, signal source), p2599 (EPOS reference point coordinate value)
Reaction upon A: NONE
Acknowl. upon A: NONE

F07446 (A) Load gearbox: Position tracking cannot be reset

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The position tracking cannot be reset.
Remedy:
Reaction upon A: NONE
Acknowl. upon A: NONE

F07447 Load gearbox: Position tracking, maximum actual value exceeded

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: When the position tracking of the load gearbox is configured, the drive/encoder (motor encoder) identifies a maximum possible absolute position actual value (r2723) that can no longer be represented within 32 bits.
Maximum value: p0408 * p2721 * 2^p0419
See also: p0408 (Rotary encoder pulse No.), p0419 (Fine resolution absolute value Gx_XIST2 (in bits)), p2721 (Load gearbox, rotary absolute gearbox, revolutions, virtual)
Remedy: - reduce the fine resolution (p0419).
- reduce the multiturn resolution (p2721).
See also: p0419 (Fine resolution absolute value Gx_XIST2 (in bits)), p2721 (Load gearbox, rotary absolute gearbox, revolutions, virtual)

F07448 (A) Load gearbox: Position tracking, linear axis has exceeded the maximum range

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For a configured linear axis/no modulo axis, the drive/encoder has exceeded the maximum possible traversing range.
For the configured linear axis, the maximum traversing range is defined to be 64x (+/- 32x) of p0421. It should be read in p2721 and interpreted as the number of load revolutions.

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Remedy: The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset position tracking, position (p2720.2 = 1).
- de-select encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

Reaction upon A: NONE

Acknowl. upon A: NONE

F07449 (A) Load gearbox: Position tracking, actual position outside tolerance window

Drive object: SERVO, VECTOR

Reaction: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: When powered-down, the drive/encoder was moved through a distance greater than what 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 after the measuring gearbox - if one is being used. The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r2724.
See also: p2722 (Load gearbox, position tracking tolerance window), r2724 (Load gearbox position difference)

Remedy: Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset position tracking, position (p2720.2 = 1).
- de-select encoder commissioning (p0010 = 0).
The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also: p0010 (Infeed commissioning parameter filter), p2507 (LR absolute encoder adjustment status)

Reaction upon A: NONE

Acknowl. upon A: NONE

F07450 (A) LR: Standstill monitoring has responded

Drive object: SERVO, VECTOR

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.
- check the connecting cable, motor/drive converter (phase missing, interchange).
- 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.

Reaction upon A: NONE

Acknowl. upon A: NONE

F07451 (A) LR: Position monitoring has responded

Drive object: SERVO, VECTOR

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.

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Remedy: Check the causes and resolve.
Reaction upon A: NONE
Acknowl. upon A: NONE

F07452 (A) LR: Following error too high

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The difference between the position setpoint position actual value (following error dynamic model, r2563) is greater than the tolerance (p2546).
- the drive torque or accelerating capacity exceeded.
- position measuring system fault.
- 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.
Reaction upon A: NONE
Acknowl. upon A: NONE

F07453 LR: Position actual value preprocessing error

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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 or p0189 = 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), p0189 (Encoder 3 encoder data set number), p0400 (Enc type selection), p2502 (LR encoder assignment)

A07455 EPOS: Maximum velocity limited

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The maximum velocity (p2571) is too high to correctly calculate the modulo correction.
Within the sampling time for positioning (p0115[5]), 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).
- increase the sampling time for positioning (p0115[5]).

A07456 EPOS: Setpoint velocity limited

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The actual setpoint velocity is greater than the parameterized maximum velocity (p2571) and is therefore limited.

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Remedy: - check the entered setpoint velocity.
- reduce the velocity override (CI: p2646).
- increase the maximum velocity (p2571).

A07457 EPOS: Combination of input signals illegal

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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) (p0495).
See also: p0495 (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

Drive object: SERVO, VECTOR
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)

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A07461 EPOS: Reference point not set

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: A traversing block selected via BI: p2625 to BI: p2630 was started via BI: 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

Drive object: SERVO, VECTOR
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).
Reaction upon F: OFF1
Acknowl. upon F: IMMEDIATELY

F07464 EPOS: Traversing block is inconsistent

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The traversing block does not contain valid information.
Alarm value (r2124, 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

Drive object: SERVO, VECTOR
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.

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A07466 EPOS: Traversing block number assigned a multiple number of times

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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).

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A07471 EPOS: Traversing block target position outside the modulo range

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: When traversing, the axis has moved to the traversing range limit.
Remedy: Move away in the positive direction.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07474 (F) EPOS: End of traversing range reached

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: When traversing, the axis has moved to the traversing range limit.
Remedy: Move away in the negative direction.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

F07475 (A) EPOS: Target position < start of traversing range

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The target position for relative traversing lies outside the traversing range.
Remedy: Correct the target position.
Reaction upon A: NONE
Acknowl. upon A: NONE

F07476 (A) EPOS: Target position > end of the traversing range

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The target position for relative traversing lies outside the traversing range.

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Remedy: Correct the target position.
Reaction upon A: NONE
Acknowl. upon A: NONE

A07477 (F) EPOS: Target position < software limit switch minus

Drive object: SERVO, VECTOR
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)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07478 (F) EPOS: Target position > software limit switch plus

Drive object: SERVO, VECTOR
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)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07479 EPOS: Software limit switch minus reached

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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)

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F07481 (A) EPOS: Axis position < software limit switch minus

Drive object: SERVO, VECTOR
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)
Reaction upon A: NONE
Acknowl. upon A: NONE

F07482 (A) EPOS: Axis position > software limit switch plus

Drive object: SERVO, VECTOR
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)
Reaction upon A: NONE
Acknowl. upon A: NONE

A07483 EPOS: Travel to fixed stop clamping torque not reached

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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).
Reaction upon A: NONE
Acknowl. upon A: NONE

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A07486 EPOS: Intermediate stop missing

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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 re-start motion.
See also: p2641 (EPOS reject traversing task (0 signal))

F07488 EPOS: Relative positioning not possible

Drive object: SERVO, VECTOR
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

Drive object: SERVO, VECTOR
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 EPOS: Enable signal withdrawn while traversing

Drive object: SERVO, VECTOR
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 "power-on inhibit" 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

Drive object: SERVO, VECTOR
Reaction: OFF3
Acknowledge: IMMEDIATELY
Cause: A zero 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.
Reaction upon A: NONE
Acknowl. upon A: NONE

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F07492 (A) EPOS: STOP cam plus reached

Drive object: SERVO, VECTOR
Reaction: OFF3
Acknowledge: IMMEDIATELY
Cause: A zero 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.
Reaction upon A: NONE
Acknowl. upon A: NONE

F07493 LR: Overflow of the value range for the position actual value

Drive object: SERVO, VECTOR
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 status "referenced" or the status "adjustment absolute measuring system" is reset.
Fault value (r0949, interpret decimal):
1: r2521 has exceeded the value range for the position actual value display.
2: r0483 and/or r2723 has exceeded the value range for the position actual value display.
3. The factor to convert the absolute position (r0483 and/or r2723) from increments to LUs is greater than 1.0.
Remedy: If required, reduce the traversing range or position resolution (p2506).
Increase the fine resolution of absolute position actual value p419.
Reference to fault value 3:
If the factor inc2lu to convert the absolute position (r0483 or r2723) from increments to LUs is greater than 1.0, then it is not possible to make an adjustment as an overflow can occur.
The factor inc2lu is calculated as follows for rotary encoders:
1. Motor encoder without position tracking:
inc2lu = p2506 * p0433 * p2505 / (2^p0419 * p0408 * p0432 * p2504)
2. Motor encoder with position tracking for the measuring gearbox:
inc2lu = p2506 * p2505 / (2^p0419 * p0408 * p2504)
3. Motor encoder with position tracking for the load gearbox:
inc2lu = p2506 * p0433 / (2^p0419 * p0408 * p0432)
4. Motor encoder with position tracking for the load and measuring gearbox:
inc2lu = p2506 / (2^p0419 * p0408)
5. Direct encoder without position tracking:
inc2lu = p2506 * p0433 / (2^p0419 * p0408 * p0432)
6. Direct encoder with position tracking for the measuring gearbox:
inc2lu = p2506 / (2^p0419 * p0408)
Example re 2:
p2506 = 300000
p0419 = 9
p0408 = 2048
p2505 = 7 LoadU
p2504 = 2 MotU
inc2lu = 1.001358032

F07494 LR: Drive Data Set changeover in operation

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A drive data set changeover (DDS changeover) when the mechanical relationships change (p2503 .. 2506), the direction of rotation (p1821) or the encoder assignment (p2502) were requested during operation.
Remedy: To changeover the drive data set, initially, exit the "operation" mode.

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A07495 (F) LR: Reference function interrupted

Drive object: SERVO, VECTOR
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.

Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07496 EPOS: Enable not possible

Drive object: SERVO, VECTOR
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 LR: Position setting value activated

Drive object: SERVO, VECTOR
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: None necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

A07498 (F) LR: Measuring probe evaluation not possible

Drive object: All objects
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).
Re alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
Re alarm value = 4098:
Check the Control Unit hardware.
Re alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
Re 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[125µs] = alarm value - 50000.

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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.

Reaction upon F: OFF1

Acknowl. upon F: IMMEDIATELY

F07499 (A) EPOS: Reversing cam approached with the incorrect traversing direction

Drive object: SERVO, VECTOR

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.

Reaction upon A: NONE

Acknowl. upon A: NONE

F07500 Drive: Power unit data set PDS not configured

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Only for controlled line supply infeed/regenerative feedback units:
The power unit data set was not configured - this means that a data set number was not entered into the drive data set.
Fault value (r0949, interpret decimal):
Drive data set number of p0185.

Remedy: The index of the power unit data set associated with the drive data set should be entered into p0185.

F07501 Drive: Motor Data Set MDS not configured

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Only for power units:
The motor data set was not configured - this means that a data set number was not entered into the associated drive data set.
Fault value (r0949, interpret decimal):
The fault value includes the drive data set number of p0186.

Remedy: The index of the motor data set associated with the drive data set should be entered into p0186.
See also: p0186 (Motor Data Sets (MDS) number)

F07502 Drive: Encoder Data Set EDS not configured

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Only for power units:
The encoder data set was not configured - this means that a data set number was not entered into the associated drive data set.
Fault value (r0949, interpret decimal):
The fault value includes the drive data set number of p0187, p0188 and p0189.
The fault value is increased by 100 * encoder number (e.g. for p0189: Fault value 3xx with xx = data set number).

Remedy: The index of the encoder data set associated with the drive data set should be entered into p0187 (1st encoder), p0188 (2nd encoder) and p0189 (3rd encoder).

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A07504 Drive: Motor data set is not assigned to a drive data set

Drive object: SERVO, TM41, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: A motor data set is not assigned to a drive object.
All of the existing motor data sets in the drive data sets must be assigned using the MDS number (p0186[0...n]).
There must be at least as many drive data sets as motor data sets.
Alarm value (r2124, interpret decimal):
Number of the motor data set that has not been assigned.

Remedy: In the drive data sets, assign the non-assigned motor data set using the MDS number (p0186[0...n]).
- check whether all of the motor data sets are assigned to drive data sets.
- if required, delete superfluous motor data sets.
- if required, set-up new drive data sets and assign to the corresponding motor data sets.
See also: p0186 (Motor Data Sets (MDS) number)

F07510 Drive: Identical encoder in the drive data set

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: More than one encoder with identical component number is assigned to a single drive data set. In one drive data set, it is not permissible that identical encoders are operated together.
Fault value (r0949, interpret decimal):
1000 * first identical encoder + 100 * second identical encoder + drive data set.
Example:
Fault value = 1203 means:
In drive data set 3, the first (p0187[3]) and second encoder (p0188[3]) are identical.

Remedy: Assign the drive data set to different encoders.
See also: p0141 (Encoder interface (Sensor Module) component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

F07511 Drive: Encoder used a multiple number of times

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Each encoder may only be assigned to one drive and within a drive must - in each drive data set - either always be encoder 1, always encoder 2 or always encoder 3. This unique assignment has been violated.
Fault value (r0949, interpret decimal):
The two parameters in coded form, that refer to the same component number.
First parameter:
Index: First and second decimal place (99 for EDS, not assigned DDS)
Parameter number: Third decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS not assigned DDS)
Drive number: Fourth and fifth decimal place
Second parameter:
Index: Sixth and seventh decimal place (99 for EDS, not assigned DDS)
Parameter number: Eighth decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS, not assigned DDS)
Drive number: Ninth and tenth decimal place
See also: p0141 (Encoder interface (Sensor Module) component number)

Remedy: Correct the double use of a component number using the two parameters coded in the fault value.

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A07512 Drive: Encoder data set changeover cannot be parameterized

Drive object: SERVO, TM41, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: Using p0141, a changeover of the encoder data set is prepared that is illegal. In this firmware release, an encoder data set changeover is only permitted for the components in the actual topology. Commissioning can only be exited with the correct parameterization.
Alarm value (r2124, interpret decimal):
Incorrect EDS data set number.
See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)
Remedy: Every encoder data set must be assigned its own dedicated DRIVE-CLiQ socket. The component numbers of the encoder interfaces (p0141) must have different values within a drive object.
The following must apply:
p0141[0] not equal to p0141[1] not equal to ... not equal to p0141[n]

A07514 Drive: Data structure does not correspond to the interface module

Drive object: SERVO, TM41, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The interface mode "SIMODRIVE 611 universal" was set (p2038 = 1) and the data structure does not correspond to this mode.
For the data structure, the following rule must be complied with.
Within the group of 8 drive data sets, the assignment to the motor data set must be set the same:
p0186[0] = p0186[1] = ... = p0186[7]
p0186[8] = p0186[9] = ... = p0186[15]
p0186[16] = p0186[17] = ... = p0186[23]
p0186[24] = p0186[25] = ... = p0186[31]
See also: p0180 (Number of Drive Data Sets (DDS)), p0186 (Motor Data Sets (MDS) number), p2038 (PROFIdrive STW/ZSW interface mode)
Remedy: - structure the data according to the rules of the "SIMODRIVE 611 universal" interface mode.
- check the interface mode (p2038).

A07515 Drive: Power unit and motor incorrectly connected

Drive object: SERVO, TM41, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: A power unit (via PDS) was assigned to a motor (via MDS) in a drive data set that is not connected in the target topology.
Alarm value (r2124, interpret decimal):
Number of the incorrectly parameterized drive data set.
Remedy: - assign the drive data set to a combination of motor and power unit permitted by the target topology.
- adapt the target topology.
See also: p0121 (Power unit component number), p0131 (Motor component number), p0186 (Motor Data Sets (MDS) number)

F07516 Drive: Re-commission the data set

Drive object: SERVO, TM41, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The assignment between the drive data set and motor data set (p0186) or between the drive data set and the encoder data set was modified (p0187). This is the reason that the drive data set must re-commissioned.
Fault value (r0949, interpret decimal):
Drive data set to be re-commissioned.
Remedy: Commission the drive data set specified in the fault value (r0949).

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A07517 Drive: Encoder data set changeover incorrectly parameterized

Drive object: SERVO, TM41, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: An MDS cannot have different motor encoders in two different DDS.
The following parameterization therefore results results in an error:
p0186[0] = 0, p0187[0] = 0
p0186[0] = 0, p0187[0] = 1
Alarm value (r2124, interpret decimal):
The lower 16 bits indicate the first DDS and the upper 16 bits indicate the second DDS.

Remedy: If you wish to operate a motor once with one motor encoder and then another time with the other motor encoder, then you must set-up two different MDSs, in which the motor data are the same.
Example:
p0186[0] = 0, p0187[0] = 0
p0186[0] = 1, p0187[0] = 1

F07518 Drive: Motor data set changeover incorrectly parameterized

Drive object: SERVO, TM41, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The system has identified that two motor data sets were incorrectly parameterized.
Parameter r0313 (calculated from p0314, p0310, p0311), r0315 and p1982 may only have different values if the motor data sets are assigned different motors. p0827 is used to assign the motors and/contactors.
It is not possible to toggle between motor data sets.
Alarm value (r2124, interpret hexadecimal):
xxxxyyyy:
xxxx: First DDS with assigned MDS, yyyy: Second DDS with assigned MDS

Remedy: Correct the parameterization of the motor data sets.

A07519 Drive: Motor cannot be changed over

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: With the setting p0833.0, a motor changeover via the application is selected. This is the reason that p0827 must have different values in the appropriate motor data set.
Alarm value (r2124, interpret hexadecimal):
xxxxyyyy:
xxxx: First MDS, yyyy: Second MDS

Remedy: - parameterize the appropriate motor data sets differently (p0827).
- select the setting p0833.0 = 0 (motor changeover via the drive).

A07530 Drive: Drive Data Set DDS not present

Drive object: SERVO, TM41, VECTOR

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), p0822 (Drive data set selection DDS bit 2), p0823 (Drive data set selection DDS bit 3), p0824 (Drive data set selection DDS bit 4), r0837 (Drive Data Set DDS selected)

Remedy: - select the existing drive data set.
- set-up additional drive data sets.

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A07541 Drive: Data set changeover not possible

Drive object: SERVO, TM41, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The selected drive data set changeover and the assigned motor changeover are not possible and are not carried out. For synchronous motors, the motor contactor may only be switched for actual speeds less than the speed at the start of field weakening (r0063 < p0348).
See also: r0063 (Speed actual value after actual value smoothing), p0348 (Speed at the start of field weakening Vdc = 600 V)
Remedy: Reduce the speed below the speed at the start of field weakening.

A07550 (F, N) Drive: Not possible to reset encoder parameters

Drive object: SERVO, VECTOR
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.
Reaction upon F: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F07551 Drive encoder: No commutation angle information

Drive object: SERVO, VECTOR
Reaction: OFF2 (IASC / DCBRAKE)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The angular commutation information is missing. This means that synchronous motors cannot be controlled (closed-loop control)
Fault value (r0949, interpret decimal):
Low word: Drive data set number
High word: Cause:
1: The motor encoder used does not supply an absolute commutation angle.
2: The selected ratio of the measuring gearbox does not match the motor pole pair number.
Remedy: Re 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 (p0313) is an integer multiple of the encoder pulse number (p0408).
- activate the pole position identification routine (p1982 = 1).
Re cause 2:
- the quotient of the pole pair number divided by the measuring gearbox ratio must be an integer number: (p0314 * p0433) / p0432, for operation with a C/D track, this quotient must be less than or equal to 8.
See also: p0402 (Gearbox type selection), p0404 (Encoder configuration effective), p0432 (Gearbox factor, encoder revolutions), p0433 (Gearbox factor, motor/load revolutions)

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F07552 (A) Drive encoder: Encoder configuration not supported

Drive object: SERVO, VECTOR

Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, 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):
Low word low byte: Encoder data set number
Low word high byte: Component number
High word:
The encoder evaluation does not support a function selected in p0404.
1: sin/cos encoder with absolute track (this is supported by SME25).
3: Squarewave encoder (this is supported by SMC30).
4: sin/cos encoder (this is supported by SMC20, SMI20, SME20, SME25).
12: sin/cos encoder with reference mark (this is supported by SME20).
15: Commutation with zero mark for separately-excited synchronous motors with VECTORMV.
23: Resolver (this is supported by SMC10, SMI10).
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).

Reaction upon A: NONE

Acknowl. upon A: NONE

F07553 (A) Drive encoder: Sensor Module configuration not supported

Drive object: SERVO, VECTOR

Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Sensor Module does not support the requested configuration.
Possible causes:
- bits are set in p0430 (requested functions) that are not set in r0458 (supported functions). This does not apply for bit 19 (safety position actual value sensing), bit 29 (phase correction), bit 30 (amplitude correction) and bit 31 (offset correction).
- p1982 > 0 (pole position identification requested), but r0458 bit 16 = 0 (pole position identification not supported).
Fault value (r0949, interpret binary):
DCBA:
A: Encoder Data Set number.
B: First incorrect bit.

Remedy: - check the encoder parameterization (p0430).
- check the pole position identification routine (p1982).
- use the matching encoder evaluation (r0458).

Reaction upon A: NONE

Acknowl. upon A: NONE

F07555 (A) Drive encoder: Configuration position tracking

Drive object: SERVO, VECTOR

Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The configuration of the position tracking 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 gearboxes.
Fault value (r0949, interpret decimal):
Low word low byte: Encoder data set number
Low word high byte: Component number
High word low byte: Data set number (only load gearboxes)
High word high byte: Cause
0: An absolute encoder is not being used.
1 : Position tracking cannot be activated because the internal NVRAM is full or the Control Unit does not have an NVRAM.

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2: For a linear axis, the position tracking was activated for the load and measuring gearbox.
3: Position tracking cannot be activated because there is more than one data set (p0180).
4: A linear encoder is being used.
See also: p0404 (Encoder configuration effective), p0411 (Measuring gearbox, configuration)

Remedy: - use an absolute encoder.
- if necessary, de-select the position tracking (p0411 for the measuring gearbox, p2720 for the load gearbox).
- use a Control Unit with sufficient NVRAM.

Reaction upon A: NONE

Acknowl. upon A: NONE

F07556 Measuring gearbox: Position tracking, maximum actual value exceeded

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: When the position tracking of the measuring gearbox 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):
Low word low byte: Encoder data set number
Low word high byte: Component number
See also: p0408 (Rotary encoder pulse No.), p0412 (Measuring gearbox, rotary absolute gearbox, 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 gearbox, rotary absolute gearbox, revolutions, virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))

A07557 (F) Encoder 1: Reference point coordinate not in the permissible range

Drive object: SERVO, VECTOR

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.
Fault value (r0949, interpret decimal):
Limit value (absolute value) for the reference point coordinate.

Remedy: Set the reference point coordinate less than the limit value specified in the fault value.
See also: p2598 (EPOS reference point coordinate, signal source)

Reaction upon F: OFF1 (OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

A07558 (F) Encoder 2: Reference point coordinate not in the permissible range

Drive object: SERVO, VECTOR

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.
Fault value (r0949, interpret decimal):
Limit value (absolute value) for the reference point coordinate.

Remedy: Set the reference point coordinate less than the limit value specified in the fault value.
See also: p2598 (EPOS reference point coordinate, signal source)

Reaction upon F: OFF1 (OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

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A07559 (F) Encoder 3: Reference point coordinate not in the permissible range

Drive object: SERVO, VECTOR
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.
Fault value (r0949, interpret decimal):
Limit value (absolute value) for the reference point coordinate.
Remedy: Set the reference point coordinate less than the limit value specified in the fault value.
See also: p2598 (EPOS reference point coordinate, signal source)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

F07560 Drive encoder: Number of pulses is not to the power of two

Drive object: SERVO, VECTOR
Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, 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).
- if required, upgrade the Sensor Module firmware.

F07561 Drive encoder: Number of multiturn pulses is not to the power of two

Drive object: SERVO, VECTOR
Reaction: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The multi-turn 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).
- if required, upgrade the Sensor Module firmware.

A07565 (F, N) Drive: Encoder error in PROFIdrive encoder interface 1

Drive object: SERVO, VECTOR
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).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A07566 (F, N) Drive: Encoder error in PROFIdrive encoder interface 2

Drive object: SERVO, VECTOR
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.
This alarm is only output if p0480[1] is not equal to zero.

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Remedy: Acknowledge the encoder error using the encoder control word (G2_STW.15 = 1).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A07567 (F, N) Drive: Encoder error in PROFIdrive encoder interface 3

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: An encoder error was signaled for encoder 3 via the PROFIdrive encoder interface (G3_ZSW.15).
Alarm value (r2124, interpret decimal):
Error code from G3_XIST2, refer to the description regarding r0483.
This alarm is only output if p0480[2] is not equal to zero.
Remedy: Acknowledge the encoder error using the encoder control word (G3_STW.15 = 1).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F07575 Drive: Motor encoder not ready

Drive object: SERVO, TM41, VECTOR
Reaction: OFF2 (ENCODER)
Acknowledge: IMMEDIATELY
Cause: The motor encoder signals that it is not ready.
- initialization of encoder 1 (motor encoder) was unsuccessful.
- the function "parking encoder" is active (selected using the encoder control word G1_STW.14 = 1).
- the encoder interface (Sensor Module) is de-activated (p0145).
- the Sensor Module is defective.

Remedy: Evaluate other queued faults via encoder 1.

A07576 Drive: Sensorless operation due to a fault active

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: Sensorless operation is active due to a fault (r1407.13).
The required response when an encoder fault occurs is parameterized in p0491.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy:

A07577 (F) Encoder 1: Measuring probe evaluation not possible

Drive object: SERVO, VECTOR
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.

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Remedy: De-activate the measuring probe evaluation (BI: p2509 = 0 signal).
Re alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
Re alarm value = 4098:
Check the Control Unit hardware.
Re alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
Re alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

Reaction upon F: OFF1

Acknowl. upon F: IMMEDIATELY

A07578 (F) Encoder 2: Measuring probe evaluation not possible

Drive object: SERVO, VECTOR

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).
Re alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
Re alarm value = 4098:
Check the Control Unit hardware.
Re alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
Re alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

Reaction upon F: OFF1

Acknowl. upon F: IMMEDIATELY

A07579 (F) Encoder 3: Measuring probe evaluation not possible

Drive object: SERVO, VECTOR

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).
Re alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
Re alarm value = 4098:
Check the Control Unit hardware.
Re alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
Re alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

Reaction upon F: OFF1

Acknowl. upon F: IMMEDIATELY

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A07580 (F, N) Drive: No Sensor Module with matching component number

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: A Sensor Module with the component number specified in p0141 was not found.
Alarm value (r2124, interpret decimal):
Encoder data set involved (index of p0141).
Remedy: Correct parameter p0141.
Reaction upon F: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A07581 (F) Encoder 1: Position actual value preprocessing error

Drive object: SERVO, VECTOR
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)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07582 (F) Encoder 2: Position actual value preprocessing error

Drive object: SERVO, VECTOR
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)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07583 (F) Encoder 3: Position actual value preprocessing error

Drive object: SERVO, VECTOR
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)
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07584 Encoder 1: Position setting value activated

Drive object: SERVO, VECTOR
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: None necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

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A07585 Encoder 2: Position setting value activated

Drive object: SERVO, VECTOR
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: None necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

A07586 Encoder 3: Position setting value activated

Drive object: SERVO, VECTOR
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: None necessary.
The alarm automatically disappears with BI: p2514 = 0 signal.

A07587 Encoder 1: Position actual value preprocessing does not have a valid encoder

Drive object: SERVO, VECTOR
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), p0189 (Encoder 3 encoder data set number), p0400 (Enc type selection), p2502 (LR encoder assignment)

A07588 Encoder 2: Position actual value preprocessing does not have a valid encoder

Drive object: SERVO, VECTOR
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), p0189 (Encoder 3 encoder data set number), p0400 (Enc type selection), p2502 (LR encoder assignment)

A07589 Encoder 3: Position actual value preprocessing does not have a valid encoder

Drive object: SERVO, VECTOR
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), p0189 (Encoder 3 encoder data set number), p0400 (Enc type selection), p2502 (LR encoder assignment)

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A07590 (F) Encoder 1: Drive Data Set changeover in operation

Drive object: SERVO, VECTOR
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.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07591 (F) Encoder 2: Drive Data Set changeover in operation

Drive object: SERVO, VECTOR
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.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07592 (F) Encoder 3: Drive Data Set changeover in operation

Drive object: SERVO, VECTOR
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.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07593 (F) Encoder 1: Overflow of the value range for the position actual value

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the status "referenced" or the status "adjustment absolute measuring system" is reset.
Fault value (r0949, interpret decimal):
1: r2521 has exceeded the value range for the position actual value display.
2: r0483 and/or r2723 has exceeded the value range for the position actual value display.
3. The factor to convert the absolute position (r0483 and/or r2723) from increments to LUs is greater than 1.0.
Remedy: If required, reduce the traversing range or position resolution.
Reducing the position resolution and conversion factor (supplementary info 3):
- reduce p2506 (LUs per load revolution for rotary encoders)
- increase p419 (fine resolution of absolute position actual values).
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

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A07594 (F) Encoder 2: Overflow of the value range for the position actual value

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the status "referenced" or the status "adjustment absolute measuring system" is reset.
Fault value (r0949, interpret decimal):
1: r2521 has exceeded the value range for the position actual value display.
2: r0483 and/or r2723 has exceeded the value range for the position actual value display.
3. The factor to convert the absolute position (r0483 and/or r2723) from increments to LUs is greater than 1.0.
Remedy: If required, reduce the traversing range or position resolution.
Reducing the position resolution and conversion factor (supplementary info 3):
- reduce p2506 (LUs per load revolution for rotary encoders)
- increase p419 (fine resolution of absolute position actual values).
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07595 (F) Encoder 3: Overflow of the value range for the position actual value

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the status "referenced" or the status "adjustment absolute measuring system" is reset.
Fault value (r0949, interpret decimal):
1: r2521 has exceeded the value range for the position actual value display.
2: r0483 and/or r2723 has exceeded the value range for the position actual value display.
3. The factor to convert the absolute position (r0483 and/or r2723) from increments to LUs is greater than 1.0.
Remedy: If required, reduce the traversing range or position resolution.
Reducing the position resolution and conversion factor (supplementary info 3):
- reduce p2506 (LUs per load revolution for rotary encoders)
- increase p419 (fine resolution of absolute position actual values).
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07596 (F) Encoder 1: Reference function interrupted

Drive object: SERVO, VECTOR
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.
Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

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A07597 (F) Encoder 2: Reference function interrupted

Drive object: SERVO, VECTOR
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.

Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

A07598 (F) Encoder 3: Reference function interrupted

Drive object: SERVO, VECTOR
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.

Reaction upon F: OFF1 (OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

F07800 Drive: No power unit present

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The power unit parameters cannot be read or no parameters are stored in the power unit.
Connection between the CU and the Motor Module was interrupted or is defective.
This fault also occurs if an incorrect topology was selected in the commissioning software and this parameterization is then downloaded into the CU.
See also: r0200 (Power unit, actual code number)

Remedy:
- connect the data line to power unit and restart the Control Unit (POWER ON).
- check or replace the CU module.
- check the cable between the CU and Motor Module.
- after correcting the topology, the parameters must be again downloaded using the commissioning software.

F07801 Drive: Motor overcurrent

Drive object: SERVO
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.
- motor was braked with an excessively high stall torque correction factor.
- V/f operation: Up ramp was set too short or the load is too high.
- V/f operation: Short-circuit in the motor cable or ground fault.
- V/f operation: Motor current does not match the current of Motor Module.

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Note:
Synchronous motor: Limit current= 1.3 * p0323
Induction motor: Limit current= 1.3 * r0209

Remedy:
- check the current limits (p0323, p0640).
- check the current controller (p1715, p1717).
- reduce the stall torque correction factor (p0326).
- increase the up ramp (p1318) or reduce the load.
- check the motor and motor cables for short-circuit and ground fault.
- check the Motor Module and motor combination.

F07801 Drive: Motor overcurrent

Drive object: VECTOR

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.
- motor was braked with an excessively high stall torque correction factor.
- V/f operation: Up ramp was set too short or the load is too high.
- V/f operation: Short-circuit in the motor cable or ground fault.
- V/f operation: Motor current does not match the current of Motor Module.

Note:
Limit current = 2 * Minimum(p0640, 4 * p0305) >= 2 * p0305

Remedy:
- check the current limits (p0640).
- vector control: Check the current controller (p1715, p1717).
- V/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 Module and motor combination.

F07802 Drive: Infeed or power unit not ready

Drive object: SERVO, VECTOR

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY

Cause:
After an internal power-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) Infeed: Power unit overload I2t

Drive object: A_INF, B_INF, S_INF

Reaction: NONE

Acknowledge: NONE

Cause: Alarm threshold for I2t overload (p0294) of the power unit exceeded.

Remedy:
- reduce the continuous load.
- adapt the load duty cycle.

Reaction upon N: NONE

Acknowl. upon N: NONE

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A07805 (N) Drive: Power unit overload I2t

Drive object: SERVO, VECTOR
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 rated currents of the motor and Motor Module.
Reaction upon N: NONE
Acknowl. upon N: NONE

F07810 Drive: Power unit EEPROM without rated data

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
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.

F07815 Drive: Power unit has been changed

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The code number of the actual power unit does not match the saved number.
Fault value (r0949, interpret decimal):
Number of the incorrect parameter.
See also: r0200 (Power unit, actual code number), p0201 (Power unit code number)
Remedy: Connect the original power unit and power-up the Control Unit again (POWER ON) or set p0201 to r0200 and exit commissioning with p0010 = 0.
For infeeds, the following applies:
Commutating reactors or line filters must be used that are specified for the new power unit. A line supply and DC link identification routine (p3410 = 5) must then be carried out. It is not possible to change the power unit without re-commissioning the system if the type of infeed (A_Infeed, B_Infeed, S_Infeed), the type of construction/design (booksize, chassis) or the voltage class differ between the old and new power units.
For inverters, the following applies:
If the new power module is accepted, then if required, the current limit p0640 can be reduced by a lower maximum current of the power module (r0209) (torque limits stay the same).
If not only the power unit is changed, but also the motor, then the motor must be re-commissioning (e.g. using p0010 = 1). This is also necessary if motor data is still to be downloaded via DRIVE-CLiQ.
See also: r0200 (Power unit, actual code number)

A07820 Drive: Temperature sensor not connected

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The temperature sensor for motor temperature monitoring, specified in p0600, is not available.
- parameter download with "incorrect" setting.
- module with sensor evaluation has been, in the meantime, been removed.
- temperature sensor via Motor Module, not for CU310.
Remedy: - connect the module with temperature sensor.
- set the available temperature sensor (p0600, p0601).
See also: p0600 (Motor temperature sensor for monitoring), p0601 (Temperature sensor, sensor type)

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A07825 (N) Drive: Simulation operation activated

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The simulation mode is activated.
The drive can only be powered-up if the DC link voltage is less than 40 V.
Remedy: The alarm automatically disappears if simulation operation is de-activated with p1272 = 0.
Reaction upon N: NONE
Acknowl. upon N: NONE

F07826 Drive: Simulation operation with DC link voltage too high

Drive object: VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The simulation mode is activated and the DC link voltage is greater than the permissible value of 40 V.
Remedy: - switch-out (disable) simulation operation (p1272 = 0) and acknowledge the fault.
- reduce the input voltage in order to reach a DC link voltage below 40 V.

F07840 Drive: Infeed operation missing

Drive object: SERVO, VECTOR
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: The signal "infeed operation" is not present although the enable signals for the drive have been present for longer than the parameterized monitoring time (p0857).
- infeed not operational.
- interconnection of the binector input for the ready signal is either incorrect or missing (p0864).
- infeed is presently carrying out a line supply identification routine.

Remedy: - bring the infeed into an operational state.
- check the interconnection of the binector input for the signal "infeed operation" (p0864).
- increase the monitoring time (p0857).
- wait until the infeed has completed the line supply identification routine.
See also: p0857 (Power unit monitoring time), p0864 (Infeed operation)

F07841 Drive: Infeed operation withdrawn

Drive object: SERVO, VECTOR
Reaction: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY
Cause: The signal "infeed operation" was withdrawn in operation.
- interconnection of the binector input for the signal "infeed operation" is either incorrect or missing (p0864).
- the enable signals of the infeed were disabled.
- due to a fault, the infeed withdraws the signal "infeed operation".

Remedy: - check the interconnection of the binector input for the signal "infeed operation" (p0864).
- check the enable signals of the infeed and if required, enable.
- remove and acknowledge an infeed fault.
Note:
If this drive is intended to back-up the DC link regeneratively, then the fault response must be parameterized for NONE so that the drive can continue to operate even after the infeed fails.

A07850 (F) External alarm 1

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The BICO signal for "external alarm 1" was triggered.
The condition for this external alarm is fulfilled.
See also: p2112 (External alarm 1)
Remedy: Eliminate the causes of this alarm.

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Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

A07851 (F) External alarm 2

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The BICO signal for "external alarm 2" was triggered.
The condition for this external alarm is fulfilled.
See also: p2116 (External alarm 2)
Remedy: Eliminate the causes of this alarm.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

A07852 (F) External alarm 3

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The BICO signal for "external alarm 3" was triggered.
The condition for this external alarm is fulfilled.
See also: p2117 (External alarm 3)
Remedy: Eliminate the causes of this alarm.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)

F07860 (A) External fault 1

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The BICO signal "external fault 1" was triggered.
See also: p2106 (External fault 1)
Remedy: Eliminate the causes of this fault.
Reaction upon A: NONE
Acknowl. upon A: NONE

F07861 (A) External fault 2

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The BICO signal "external fault 2" was triggered.
See also: p2107 (External fault 2)
Remedy: Eliminate the causes of this fault.
Reaction upon A: NONE
Acknowl. upon A: NONE

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F07862 (A) External fault 3

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The BICO signal "external fault 3" was triggered.
See also: p2108 (External fault 3), p3111 (External fault 3, enable), p3112 (External fault 3 enable negated)

Remedy: Eliminate the causes of this fault.

Reaction upon A: NONE

Acknowl. upon A: NONE

F07890 Internal voltage protection / internal armature short-circuit with Safe Torque Off active

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The internal armature short-circuit (p1231=4) is not possible as Safe Torque Off is enabled. The pulses cannot be enabled.

Remedy: Switch-out the internal armature short-circuit (p1231=0) or de-activate Safe Torque Off (p9501 = p9561 = 0).

F07900 (N, A) Drive: Motor locked/speed controller at its limit

Drive object: SERVO

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, 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 initiated if the speed actual value is oscillating and the speed controller output repeatedly goes to its limit.
See also: p2175 (Motor locked speed threshold), p2177 (Motor locked delay time)

Remedy: - check that the motor can freely rotate.
- check the torque limit: For a positive direction of rotation r1538, for a negative direction of rotation r1539.
- check the parameter, message "Motor locked" and if required, correct (p2175, p2177).
- check the inversion of the actual value (p0410).
- check the motor encoder connection.
- check the encoder pulse number (p0408).
- for SERVO with sensorless operation and motors with low power ratings (< 300 W), increase the pulse frequency (p1800).
- after de-selecting basic positioning, check the torque limits when motoring (p1528) and when regenerating (p1529).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F07900 (N, A) Drive: Motor locked/speed controller at its limit

Drive object: VECTOR

Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, 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 initiated if the speed actual value is oscillating and the speed controller output repeatedly goes to its limit.
If the simulation mode is enabled (p1272 = 1) and the closed-loop control with speed encoder activated (p1300 = 21), then the inhibit signal is generated if the encoder signal is not received from a motor that is driven with the torque setpoint of the closed-loop control.
See also: p2175 (Motor locked speed threshold), p2177 (Motor locked delay time)

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Remedy:
- check that the motor can freely rotate.
- check the torque limit: For a positive direction of rotation r1538, for a negative direction of rotation r1539.
- check the parameter, message "Motor locked" and if required, correct (p2175, p2177).
- check the inversion of the actual value (p0410).
- check the motor encoder connection.
- check the encoder pulse number (p0408).
- for SERVO with sensorless operation and motors with low power ratings (< 300 W), increase the pulse frequency (p1800).
- after de-selecting basic positioning, check the torque limits when motoring (p1528) and when regenerating (p1529).
- in the simulation mode and operation with speed encoder, the power unit to which the motor is connected must be powered-up and must be supplied with the torque setpoint of the simulated closed-loop control. Otherwise, change over to sensorless control (refer to p1300).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F07901 Drive: Motor overspeed

Drive object: SERVO, VECTOR
Reaction: OFF2
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: For a positive direction of rotation:
- check r1084 and if required, correct p1082, CI:p1085 and p2162.

For a negative direction of rotation:
- check r1087 and if required, correct p1082, CI:p1088 and p2162.

F07902 (N, A) Drive: Motor stalled

Drive object: SERVO
Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, 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 or p0492).
2: Stall detection using r1408.12 (p1745).
3: Stall detection using r0056.11 (only for separately excited synchronous motors).
See also: p1744 (Motor model speed threshold stall detection), p2178 (Motor stalled delay time)
Remedy: 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 in the open-loop controlled mode (r1750.0) stalls under load. If yes, then increase the current setpoint using p1610.
- check whether the drive stalls due to the load if the speed setpoint is still zero. If yes, then increase the current setpoint using p1610.
- if the motor excitation (magnetizing) time (r0346) was significantly reduced, then it should be increased again.
- check the current limits (p0640, r0067). If the current limits are too low, then the drive cannot be magnetized.
- check the current controller (p1715, p1717) and the speed adaptation controller (p1764, p1767). If the dynamic response was significantly reduced, then this should be increased again.
- check the speed encoder, if another speed encoder was selected using the data set changeover. This must be connected to the motor that is controlled for the data set changeover.

If there is no fault, then the fault tolerance (p1745) or the delay time (p2178) can be increased.
For separately-excited synchronous motors (closed-loop control with speed encoder), the following applies:
- check the speed signal (interrupted cable, polarity, pulse number).
- ensure the correct motor parameterization (rating plate and equivalent circuit diagram parameters).
- check the excitation equipment and the interface to the closed-loop control.

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- encoder the highest possible dynamic response of the closed-loop excitation current control.
- check the speed control for any tendency to oscillate and if resonance effects occur, use a bandstop filter.
- do not exceed the maximum speed (p2162).
If there is no fault, then the delay time can be increased (p2178).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F07902 (N, A) Drive: Motor stalled

Drive object: VECTOR
Reaction: OFF2 (NONE, OFF1, OFF3, STOP1, 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 or p0492).
2: Stall detection using r1408.12 (p1745).
3: Stall detection using r0056.11 (only for separately excited synchronous motors).
See also: p1744 (Motor model speed threshold stall detection), p2178 (Motor stalled delay time)
Remedy: It should always be carefully ensured that the motor data identification (p1910) as well as the rotating measurement (p1960) were carried out (also refer to p3925). For synchronous motors with encoder, the encoder must have been adjusted (p1990).
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.
If the stalled motor should take place in the range of the monitor model and for speeds of less than 30 % of the rated motor speed, then a change can be made directly from the current model into the flux impression (p1401 Bit 5 = 1). In this case, we recommend that the time-controlled model change is switched-in (p1750 bit 4 = 1) or the model changeover limits are significantly increased (p1752 > 0.35 * p0311; p1753 = 5 %).
For closed-loop speed and torque control without speed encoder, the following applies:
- check whether the drive in the open-loop controlled mode (r1750.0) stalls under load. If yes, then increase the current setpoint using p1610.
- check whether the drive stalls due to the load if the speed setpoint is still zero. If yes, then increase the current setpoint using p1610.
- if the motor excitation (magnetizing) time (r0346) was significantly reduced, then it should be increased again.
- check the current limits (p0640, r0067). If the current limits are too low, then the drive cannot be magnetized.
- check the current controller (p1715, p1717) and the speed adaptation controller (p1764, p1767). If the dynamic response was significantly reduced, then this should be increased again.
- check the speed encoder, if another speed encoder was selected using the data set changeover. This must be connected to the motor that is controlled for the data set changeover.
If there is no fault, then the fault tolerance (p1745) or the delay time (p2178) can be increased.
For separately-excited synchronous motors (closed-loop control with speed encoder), the following applies:
- check the speed signal (interrupted cable, polarity, pulse number).
- ensure the correct motor parameterization (rating plate and equivalent circuit diagram parameters).
- check the excitation equipment and the interface to the closed-loop control.
- encoder the highest possible dynamic response of the closed-loop excitation current control.
- check the speed control for any tendency to oscillate and if resonance effects occur, use a bandstop filter.
- do not exceed the maximum speed (p2162).
If there is no fault, then the delay time can be increased (p2178).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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A07903 Drive: Motor speed deviation

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The absolute value of the speed difference from the two setpoints (p2151, p2154) 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 could be:
- 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.
- the speed controller is inhibited (refer to p0856; refer to Kp/Tn adaptation of the speed controller).
- for closed-loop torque control, the speed setpoint does not track the speed actual value.
- for active Vdc controller.
- the encoder pulse number was incorrectly parameterized (p0408).
The signal is not generated if the ramp-function generator tracking prevents the setpoint and actual speed from drifting (moving) apart.
Only for vector drives:
For V/f control, the overload condition is detected as the Imax controller is active.
See also: p2149 (Monitoring configuration)
Remedy: - increase p2163 and/or p2166.
- increase the torque/current/power limits.
- enable the speed controller.
- for closed-loop torque control: The speed setpoint should track the speed actual value.
- correct the encoder pulse number in p0408 or mount the correct tachometer.

A07904 (N) External armature short-circuit: Contactor feedback signal "Closed" missing

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: When closing, the contactor feedback signal (p1235) did not issue the signal "Closed" (r1239.1 = 1) within the monitoring time (p1236).
Remedy: - check that the contactor feedback signal is correctly connected (p1235).
- check the logic of the contactor feedback signal (r1239.1 = 1: "Closed", r1239.1 = 0: "Open").
- increase the monitoring time (p1236).
- if required, set the external armature short-circuit without contactor feedback signal (p1231=2).
Reaction upon N: NONE
Acknowl. upon N: NONE

F07905 (N, A) External armature short-circuit: Contactor feedback signal "Open" missing

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: When opening, the contactor feedback signal (p1235) did not issue the signal "Open" (r1239.1 = 0) within the monitoring time (p1236).
Remedy: - check that the contactor feedback signal is correctly connected (p1235).
- check the logic of the contactor feedback signal (r1239.1 = 1: "Closed", r1239.1 = 0: "Open").
- increase the monitoring time (p1236).
- if required, set the external armature short-circuit without contactor feedback signal (p1231=2).
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F07906 Armature short-circuit / internal voltage protection: Parameterization error

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The armature short-circuit is incorrectly parameterized.
Fault value (r0949, interpret decimal):
Low word: Motor data set number
High word: Cause:
1: A permanent-magnet synchronous motor has not been selected.
101: External armature short-circuit: Output (r1239.0) not connected-up.
102: External armature short-circuit with contactor feedback signal: No feedback signal connected (BI:p1235).
103: External armature short-circuit without contactor feedback signal: Delay time when opening (p1237) is 0.
201: Internal voltage protection: The maximum output current of the Motor Module (r0289) is less than 1.8 * motor short-circuit current (r0331).
202: Internal voltage protection: A Motor Module in booksize format is not being used.
203: Internal voltage protection: The motor short-circuit current (p0320) is greater than the maximum motor current (p0323).
204: Internal voltage protection: The activation (p1231 = 4) is not given for all motor data sets with synchronous motors (p0300 = 2xx, 4xx).

Remedy: Re cause 1:
- an armature short-circuit / voltage protection is only permissible for permanent-magnetic synchronous motors. The highest position of the motor type in p0300 must either be 2 or 4.
Re cause 101:
- the contactor for the external armature short-circuit configuration should be controlled using output signal r1239.0. The signal can, e.g. be connected to an output terminal BI: p0738. Before this fault can be acknowledged, p1231 must be set again.
Re cause 102:
- if the external armature short-circuit with contactor feedback signal (p1231 = 1) is selected, this feedback signal must be connected to an input terminal (e.g. r722.x) and then connected to BI: p1235.
- alternatively, the external armature short-circuit without contactor feedback signal (p1231 = 2) can be selected.
Re cause 103:
- if the external armature short-circuit without contactor feedback signal (p1231 = 2) is selected, then a delay time must be parameterized in p1237. This time must always be greater than the actual contactor opening time, as otherwise the Motor Module would be short-circuited!
Re cause 201:
- a Motor Module with a higher maximum current or a motor with a lower short-circuit current must be used. The maximum Motor Module current must be higher than 1.8 * short-circuit current of the motor.
Re cause 202:
- for internal voltage protection, use a Motor Module in booksize format.
Re cause 203:
- for internal voltage protection, only use short-circuit proof motors.
Re cause 204:
- The internal voltage protection must either be activated for all motor data sets with synchronous motors (p0300 = 2xx, 4xx) (p1231 = 3) or it must be deactivated for all motor data sets (p1231 not equal to 3). This therefore ensures that the protection cannot be accidentally withdrawn as a result of a data set changeover. The fault can only be acknowledged if this condition is fulfilled.

F07907 Internal voltage protection: Motor terminals are not at zero potential after pulse cancelation

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The function "Internal voltage protection" (p1231 = 3) was activated. The following must be observed:
- when the internal voltage protection is active, after pulse cancelation, all of the motor terminals are at half of the DC link voltage (without an internal voltage protection, the motor terminals are at zero potential)!
- it is only permissible to use motors that are short-circuit proof (p0320 < p0323).
- the Motor Module must be able to continually conduct 180% short-circuit current (r0331) of the motor (r0289).
- the internal voltage protection cannot be interrupted due to a fault response. If an overcurrent condition occurs during the active, internal voltage protection, then this can destroy the Motor Module and/or the motor.

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- if the Motor Module does not support the autonomous, internal voltage protection (r0192.10 = 0), in order to ensure safe, reliable functioning when the line supply fails, an external 24 V power supply (UPS) must be used for the components.
- if the Motor Module does support the autonomous, internal voltage protection (r0192.10 = 1), in order to ensure safe, reliable functioning when the line supply fails, the 24 V power supply for the components must be provided through a Control Supply Module.
- if the internal voltage protection is active, it is not permissible that the motor is driven by the load for a longer period of time (e.g. as a result of loads that move the motor or another coupled motor).

Remedy: None necessary.
This a note for the user.

A07908 Internal voltage protection / internal armature short-circuit active

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The Motor Module signals that the motor is short-circuited through the power semiconductors (r1239.5 = 1). The pulses cannot be enabled.
Remedy: 1) The internal voltage protection is selected (p1231=3):
If the Motor Module does not support the autonomous (independent) internal armature short-circuit (r0192.10 = 0) then none of the following activation criteria may apply.
- the signal at BI: p1230 (armature short-circuit activation) is 1.
- the drive is not in the state "S4: Operation" or in S5x.
- the internal pulse enable is missing (r0046.19 = 0).

If the Motor Module supports the autonomous internal voltage protection (r0192.10 = 1), then the Motor Module automatically decides - using the DC link voltage - as to whether the short-circuit should be activated. The short circuit is activated if the DC link voltage exceeds 800 V. If the DC link voltage falls below 450 V, then the short-circuit is withdrawn. If the autonomous (independent) internal voltage protection is active (r1239.5 = 1) and the line supply returns (450 V < DC link voltage < 800 V), the short-circuit is withdrawn after 3 minutes. If the motor is still in a critical speed range, the short-circuit is re-activated once the DC link voltage exceeds the threshold of 800 V.
1) The internal armature short-circuit is selected (p1231=4):
None of the following activation criteria may apply:
- the signal at BI: p1230 (armature short-circuit activation) is 1.
-

F07909 Internal voltage protection: The de-activation only becomes effective after a POWER ON.

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The de-activation of the internal voltage protection (p1231 not equal to 3) only becomes effective after POWER ON. The status signal r1239.6 = 1 indicates that the internal voltage protection is ready.
Remedy: None necessary.
This a note for the user.

A07910 (N) Drive: Motor overtemperature

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: KTY:
The motor temperature has exceeded the fault threshold (p0604 or p0616).
VECTOR: The response parameterized in p0610 becomes active.
PTC:
The response threshold of 1650 Ohm was exceeded.
Alarm value (r2124, interpret decimal):
SME not selected in p0601:
1: No output current reduction.
2: Output current reduction active.
SME selected in p0601 (p0601 = 10):
The number specifies the sensor channel that resulted in the alarm being output.
See also: p0604 (Motor overtemperature alarm threshold), p0610 (Motor overtemperature response)

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Remedy: - check the motor load.
- check the motor ambient temperature.
- check KTY84.

Reaction upon N: NONE

Acknowl. upon N: NONE

F07913 Excitation current outside the tolerance range

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The difference between the excitation current actual value and setpoint has exceeded the tolerance:
abs(r1641 - r1626) > p3201 + p3202
The cause of this fault is again reset for abs(r1641 - r1626) < p3201.

Remedy: - check the parameterization (p1640, p3201, p3202).
- check the interfaces to the excitation equipment (r1626, p1640).
- check the excitation equipment.

F07914 Flux out of tolerance

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The difference between the flux actual value and setpoint has exceeded the tolerance:
abs(r0084 - r1598) > p3204 + p3205
The cause of this fault is again reset for abs(r0084 - r1598) < p3204.
The fault is only issued after the delay time p3206 has expired.

Remedy: - check the parameterization (p3204, p3205).
- check the interfaces to the excitation equipment (r1626, p1640).
- check the excitation equipment.
- check the flux control (p1592, p1592, p1597).
- check the control for oscillation and take the appropriate counter measures (e.g. optimize the speed control loop, parameterize a bandstop filter).

A07918 (N) Three-phase setpoint generator operation selected/active

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: Only for separately excited synchronous motors (p0300 = 5):
The actual open-loop/closed-loop control mode is I/f control (open-loop) with a fixed current (p1300 = 18).
The speed is entered via the setpoint channel and the current setpoint is given by the minimum current (p1620).
It must be ensured that in this mode, the control dynamic performance is very limited. This is the reason that longer ramp-up times should be set for the setpoint speed than for normal operation.
See also: p1620 (Stator current, minimum)

Remedy: Select another open-loop/closed-loop control mode
See also: p1300 (Open-loop/closed-loop control operating mode)

Reaction upon N: NONE

Acknowl. upon N: NONE

A07920 Drive: Torque too low

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The torque deviates from the torque/speed envelope characteristic in the negative direction (too low).
See also: p2181 (Load monitoring response)

Remedy: Adapt the load.

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A07921 Drive: Torque too high

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The torque deviates from the torque/speed envelope characteristic in the positive direction (too high).
Remedy: Adapt the load.

A07922 Drive: Torque outside the tolerance

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The torque deviates from the torque/speed envelope characteristic.
Remedy: Adapt the load.

F07923 Drive: Torque too low

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The torque deviates from the torque/speed envelope characteristic in the negative direction (too low).
Remedy: Adapt the load.

F07924 Drive: Torque too high

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The torque deviates from the torque/speed envelope characteristic in the positive direction (too high).
Remedy: Adapt the load.

F07925 Drive: Torque outside the tolerance

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The torque deviates from the torque/speed envelope characteristic.
Remedy: Adapt the load.

A07926 Drive: Envelope curve, parameter invalid

Drive object: SERVO, VECTOR
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
Alarm value (r2124, interpret decimal):
Number of the parameter with the invalid value.
Remedy: Set the parameters for the load monitoring according to the applicable rules.

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A07927 DC brake active

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The motor is braked using DC current - the DC current brake is active.
Remedy: 1) An alarm with alarm response DC brake is active.
The motor is braked with the DC braking current p1232 for the duration in p1233. If the standstill threshold p1226 is fallen below, then braking is prematurely canceled.
2) The DC braking function was activated at Bico input p1230 for a set DC brake p1230=4.
Braking current p1232 should be impressed until the Bico activation is canceled again.

F07930 Drive: Brake control error

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The Control Unit has detected a brake control error.
- no motor holding brake connected.
- motor holding brake incorrectly parameterized (p1278).
- the motor holding brake control on the Motor Module is faulty.
- a DRIVE-CLiQ communications error has occurred between the Control Unit and the Motor Module involved.
Fault value (r0949, interpret decimal):
10: No brake connected or fault in the Motor Module brake control circuit ("open brake" operation).
11: Defect in the brake control circuit of the Motor Module ("brake open" operation).
20: Short-circuit in the brake winding or fault in the brake control circuit of the Motor Module ("brake open" state).
30: No brake connected, short-circuit in the brake winding or fault in the Motor Module brake control circuit ("close brake" operation).
31: Defect in the brake control circuit of the Motor Module ("close brake" operation).
40: Defect in the brake control circuit of the Motor Module ("brake closed" state).
50: Defect in the brake control circuit of the Motor Module or communications fault between the Control Unit and the Motor Module (brake control diagnostics).
See also: p1278 (Brake control, diagnostics evaluation)
Remedy: - check the motor holding brake connection. If there is not motor holding brake, set p1215 to 0.
- check the parameterization of the motor holding brake (p1278).
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
- check the electrical cabinet design and cable routing for EMC compliance
- replace the Motor Module involved.
- operation with Safe Brake Module: Check the connection of the Safe Brake Module.
- operation with Safe Brake Module: Replace the Safe Brake Module.
See also: p1215 (Motor holding brake configuration), p1278 (Brake control, diagnostics evaluation)

A07931 (F, N) Brake does not open

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: This alarm is output for r1229.4 = 1.
See also: p1216 (Motor holding brake, opening time), r1229 (Motor holding brake status word)
Remedy: - check the functionality of the motor holding brake.
- check the feedback signal (p1223).
Reaction upon F: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

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A07932 Brake does not close

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: This alarm is output for r1229.5 = 1.
For r1229.5 = 1, OFF/OFF3 are suppressed to prevent the drive accelerating by a load that drives the motor - whereby OFF2 remains effective.
See also: p1217 (Motor holding brake closing time), r1229 (Motor holding brake status word)
Remedy: - check the functionality of the motor holding brake.
- check the feedback signal (p1222).

F07935 (N) Drv: Motor holding brake detected

Drive object: SERVO, VECTOR
Reaction: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A motor with integrated motor holding brake was detected where the brake control has not been configured (p1215 = 0). The brake control configuration was then set to "motor holding brake the same as sequence control" (p1215 = 1).
Remedy: None necessary.
See also: p1215 (Motor holding brake configuration)
Reaction upon N: NONE
Acknowl. upon N: NONE

F07940 Sync-line-drive: Synchronization error

Drive object: VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: After synchronization has been completed, the phase difference (r3808) is greater than the threshold value, phase synchronism (p3813).
OFF1 or OFF3 response, while the closed-loop phase control is active (r3819.6 = 1) or synchronism reached (r3819.2 = 1).
Enable signal withdrawn (p3802 = 0), while the closed-loop phase control was active (r3819.6 = 1).
Remedy: If required increase the threshold value phase synchronism (p3813) for synchronizing the line supply to the drive.
Before OFF1 or OFF3, complete synchronizing (r03819.0 = 0).
Before withdrawing the enable signal (p3802 = 0), reach synchronism (r3819.2 = 1).
See also: p3813 (Sync-line-drive phase synchronism threshold value)

A07941 Sync-line-drive: Target frequency not permissible

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The target frequency is outside the permissible value range.
Alarm value (r2124, interpret decimal):
1084: Target frequency greater than the positive speed limit, f_sync > f_max (r1084).
1087: Target frequency less than the negative speed limit, f_sync < f_min (r1087).
Remedy: Fulfill the conditions for the target frequency for line-drive synchronization.
See also: r1084 (Speed limit positive effective), r1087 (Speed limit negative effective)

A07942 Sync-line-drive: Setpoint frequency is completely different than the target frequency

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: There is a considerable difference between the setpoint frequency and the target frequency (f_set <> f_target). The deviation that can be tolerated is set in p3806.
Remedy: The alarm automatically disappears after the difference that can be tolerated between the setpoint and target frequencies (p3806) is reached.
See also: p3806 (Sync-line-drive frequency difference threshold value)

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A07943 Sync-line-drive: Synchronization not permitted

Drive object: VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: Synchronization is not permitted.
Alarm value (r2124, interpret decimal):
1300: The control mode (p1300) has not been set to sensorless closed-loop speed control or V/f characteristic.
1910: Motor data identification activated.
1960: Speed controller optimization activated.
1990: Encoder adjustment activated.
3801: Voltage Sensing Module (VSM) not found.
3845: Friction characteristic record activated.

Remedy: Fulfill the conditions for the line-drive synchronization.
Re alarm value = 1300:
Set the control mode (p1300) to sensorless closed-loop speed control (p1300 = 20) or V/f characteristic (p1300 = 0 ... 19).
Re alarm value = 1910:
Exit the motor data identification routine (p1910).
Re alarm value = 1960:
Exist the speed controller optimization routine (p1960).
Re alarm value = 1990:
Exit the encoder adjustment (p1990).
Re alarm value = 3801:
Connect-up a Voltage Sensing Module (VSM) and when connecting to an adjacent drive object ensure that the drive objects have the same basis clock cycle.
Re alarm value = 3845:
Exit the friction characteristic record (p3845).

F07950 (A) Drive: Incorrect motor parameter

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: - the motor parameters were incorrectly entered while commissioning (e.g. p0300 = 0, no motor)
The braking resistor (p6811) has still not been parameterized - commissioning cannot be completed.
Fault value (r0949, interpret decimal):
The parameter number involved.
See also: p0300 (Motor type selection), p0301 (Motor code number selection), p0304 (Rated motor voltage), p0305 (Rated motor current), p0307 (Rated motor power), p0310 (Rated motor frequency), p0311 (Rated motor speed), p0314 (Motor pole pair number), p0315 (Motor pole pair width), p0316 (Motor torque constant), p0320 (Motor rated magnetization current/short-circuit current), p0322 (Maximum motor speed), p0323 (Maximum motor current)

Remedy: Compare the motor data with the rating plate data and if required, correct.
See also: p0300 (Motor type selection), p0301 (Motor code number selection), p0304 (Rated motor voltage), p0305 (Rated motor current), p0307 (Rated motor power), p0310 (Rated motor frequency), p0311 (Rated motor speed), p0314 (Motor pole pair number), p0316 (Motor torque constant), p0320 (Motor rated magnetization current/short-circuit current), p0322 (Maximum motor speed), p0323 (Maximum motor current)

Reaction upon A: NONE

Acknowl. upon A: NONE

F07955 Drive: Motor has been changed

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: The code number of the actual motor with DRIVE-CLiQ does not match the saved number.
Fault value (r0949, interpret decimal):
Number of the incorrect parameter.
See also: p0301 (Motor code number selection), r0302 (Motor code number of motor with DRIVE-CLiQ)

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Remedy: Connect the original motor, power-up the Control Unit again (POWER ON) and exit the quick commissioning by setting p0010 to 0.
Or set p0300 = 10000 (load the motor parameter with DRIVE-CLiQ) and re-commission.
Quick commissioning (p0010 = 1) is automatically exited with p3900 > 0.
If quick commissioning was exited by setting p0010 to 0, then an automatic controller calculation (p0340 = 1) is not carried out.

F07956 (A) Drive: Motor code does not match the list (catalog) motor

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The motor code of the actual motor with DRIVE-CLiQ does not match the possible list motor types (refer to the selection, p0300).
Fault value (r0949, interpret decimal):
Motor code of the motor with DRIVE-CLiQ
Remedy: Use a motor with DRIVE-CLiQ and the matching motor code.
The first three digits of the motor code generally correspond to the matching list motor type.
Reaction upon A: NONE
Acknowl. upon A: NONE

A07960 Drive: Incorrect friction characteristic

Drive object: SERVO, VECTOR
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.
Re alarm value = 1538:
Check the upper effective torque limit (e.g. in the field weakening range).
Re alarm value = 1539:
Check the lower effective torque limit (e.g. in the field weakening range).
Re 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).

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A07961 Drive: Friction characteristic record activated

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The automatic friction characteristic record is activated.
The friction characteristic is recorded at the next power-on command.

Remedy: None 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

Drive object: SERVO, VECTOR

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).
0840: OFF1 (p0840) is selected before the friction characteristic has been completely recorded.
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 of rotation has be selected (p3845) and the negative direction of rotation is inhibited (p1110).
1111: Friction characteristic record, positive direction of rotation has be selected (p3845) and the positive direction of rotation is inhibited (p1111).
1198: Friction characteristic record selected (p3845 > 0) and the negative direction of rotation (p1110) and positive (p1111) are inhibited (r1198).
1300: The control mode (p1300) has not been set to closed-loop speed control.
1755: For sensorless 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.
Re fault value = 0046:
Establish missing enable signals.
Re fault value = 0840:
Select OFF1 (p0840) only after the friction characteristic record has been completed.
Re 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).
Re fault value = 1110:
Select the frequency characteristic record, positive direction of rotation (p3845).
Re fault value = 1111:
Select the frequency characteristic record, negative direction of rotation (p3845).
Re fault value = 1198:
Enable the permitted direction of rotation (p1110, p1111, r1198).
Re fault value = 1300:
Set the control mode (p1300) on the closed-loop speed control (p1300 = 20, 21).
Re fault value = 1755:
For sensorless 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).
Re fault value = 1910:
Exit the motor data identification routine (p1910).
Re fault value = 1960:
Exist the speed controller optimization routine (p1960).

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Re fault value 3820 - 3829:
- check the load at speed p382x.
- check the speed signal (r0063) for oscillation at speed p382x. If required, check the speed controller settings.
Re fault value = 3840:
Make the friction characteristic error-free (p3820 - p3829, p3830 - p3839, p3840).
Re fault value = 3845:
Activate the friction characteristic record (p3845).

F07966 Drive: Check the commutation angle

Drive object: SERVO
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: The speed actual value was inverted and the associated angular commutation offset is not equal to zero and is therefore possibly incorrect.
Remedy: Angular commutation offset after the actual value inversion or determine it again (p1990=1).

F07967 Drive: Automatic encoder adjustment incorrect

Drive object: VECTOR
Reaction: OFF2 (NONE, OFF1)
Acknowledge: IMMEDIATELY
Cause: A fault has occurred during the automatic encoder adjustment or the pole position identification.
Only for internal Siemens troubleshooting.
Remedy: Carry out a POWER ON.

F07968 Drive: Lq-Ld measurement incorrect

Drive object: VECTOR
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: Re fault value = 10:
Check whether the motor is correctly connected.
Replace the Motor Module involved.
De-activate traversing (p1909).
Re fault value = 12:
Check whether motor data have been correctly entered.
De-activate traversing (p1909).
Re fault value = 16:
De-activate traversing (p1909).
Re fault value = 17:
Repeat traversing.

F07969 Drive: Incorrect pole position identification

Drive object: VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A fault has occurred during the pole position identification routine.
Fault value (r0949, decimal):
1: Current controller limited
2: Motor shaft locked.
4: Encoder speed signal not plausible.
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.

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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: Re fault value = 1:
Check whether the motor is correctly connected.
Check whether motor data have been correctly entered.
Replace the Motor Module involved.
Re fault value = 2:
Open the motor holding brake (p1215) and bring the motor into a no-load condition.
Re fault value = 4:
Check whether the encoder pulse number (p0408) and gearbox factor (p0432, p0433) are correct.
Check whether the motor pole pair number is correct (p0314).
Re 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 Motor Module involved.
Re fault value = 11:
Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re 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.
Re fault value = 13:
Reduce the value for p0329.
Check whether motor data have been correctly entered.
Re fault value = 14:
Increase the value for p0329.
Re fault value = 15:
Increase the value for p0325.
Motor not sufficiently anisotropic, change the technique (p1980==1 or 10).
Re fault value = 16:
De-activate traversing/moving (p1982).
Re fault value = 17:
Repeat traversing.
Re fault value 18:
Increase the value for p0329.
Saturation not sufficient, change the technique (p1980==10).
Re fault value = 20:
Before carrying out a pole position identification routine ensure that the motor shaft is absolutely stationary (zero speed).

F07970 Drive: Automatic encoder adjustment incorrect

Drive object: VECTOR

Reaction: OFF2 (NONE)

Acknowledge: IMMEDIATELY

Cause: A fault has occurred during the automatic encoder adjustment.
Fault value (r0949, decimal):
1: Current controller limited
2: Motor shaft locked.
4: Encoder speed signal not plausible.
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.

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15: Second harmonic too low.
16: Drive converter too small for the measuring technique.
17: Abort due to pulse inhibit.

Remedy: Re fault value = 1:
Check whether the motor is correctly connected.
Check whether motor data have been correctly entered.
Replace the Motor Module involved.
Re fault value = 2:
Open the motor holding brake (p1215) and bring the motor into a no-load condition.
Re fault value = 4:
Check whether the speed actual value inversion is correct (p0410.0).
Check whether the motor is correctly connected.
Check whether the encoder pulse number (p0408) and gearbox factor (p0432, p0433) are correct.
Check whether the motor pole pair number is correct (p0314).
Re fault value = 10:
Increase the value for p0325.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re fault value = 11:
Increase the value for p0329.
Check whether the motor is correctly connected.
Replace the Motor Module involved.
Re fault value = 12:
Reduce the value for p0325.
Check whether motor data have been correctly entered.
Re fault value = 13:
Reduce the value for p0329.
Check whether motor data have been correctly entered.
Re fault value = 14:
Increase the value for p0329.
Re fault value = 15:
Increase the value for p0325.
Re fault value = 16:
De-activate traversing/moving (p1982).
Re fault value = 17:
Repeat traversing.

A07971 (N) Drive: Angular commutation offset determination activated

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The automatic determination of the angular commutation offset (encoder adjustment) is activated (p1990 = 1).
The automatic determination is carried out with the next power-on command.
For SERVO and fault F07414 present, the following applies:
The determination of the angular commutation offset is automatically activated (p1990 = 1), if a pole position identification technique is set in p1980.
See also: p1990 (Encoder adjustment, determine angular commutation offset)

Remedy: None necessary.
The alarm automatically disappears after determination or for the setting p1990 = 0.

Reaction upon N: NONE

Acknowl. upon N: NONE

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A07980 Drive: Rotating measurement activated

Drive object: SERVO
Reaction: NONE
Acknowledge: NONE
Cause: The rotating measurement is activated. For the rotating measurement, the motor can accelerate up to the maximum speed and with maximum torque. Only the parameterized current limit (p0640) and the maximum speed (p1082) are effective. The behavior of the motor can be influenced using the direction inhibit (p1959.14, p1959.15) and the ramp-up/ramp-down time (p1958).
The rotating measurement is carried out at the next power-on command.
See also: p1960 (Rotating measurement selection)
Remedy: None necessary.
The alarm automatically disappears after the rotating measurement has been successfully completed or for the setting p1960 = 0.

A07980 Drive: Rotating measurement activated

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The rotating measurement (automatic speed controller optimization) is activated.
The rotating measurement is carried out at the next power-on command.
See also: p1960 (Rotating measurement selection)
Remedy: None 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

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The rotating measurement cannot be started due to missing enable signals.
Remedy: - acknowledge faults that are present.
- establish missing enable signals.
See also: r0002 (Control Unit operating display), r0046 (Missing enable sig)

F07982 Drive: Rotating measurement encoder test

Drive object: VECTOR
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.
9: Voltage Sensing Module (VSM) incorrectly connected.

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Remedy: Re fault value = 1:
- check the motor parameters.
- carry out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

Re fault value = 2:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).

Re fault value = 3:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

Re fault value = 4:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).

Re fault value = 5:
- check the encoder connection. If required, replace the encoder.

Re fault value = 6:
- check the connection assignment of the encoder cable. Adapt the polarity (p0410).

Re fault value = 7:
- adapt the pulse number (p0408).

Re 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).

Re fault value = 9:
- check the connections of the Voltage Sensing Module (VSM).

Note:
The encoder test can be switched-out (disabled) using p1959.0.
See also: p1959 (Rotating measurement configuration)

F07983 Drive: Rotating measurement saturation characteristic

Drive object: VECTOR

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: Re 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.

Re fault value = 1 ... 2:
- increase the measuring speed (p1961) and repeat the measurement.

Re 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 %).

Re fault value = 5:
- the speed setpoint (p1961) is too high. Reduce the speed.

Re fault value = 6:
- adapt the speed setpoint (p1961) or minimum limiting (p1080).

Re fault value = 7:
- adapt the speed setpoint (p1961) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

Re fault value = 8:
- adapt the speed setpoint (p1961) or maximum limit (p1082, p1083 and p1086).

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Re 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

Drive object: VECTOR

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.

Remedy: Re 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 %).
Re fault value = 2, 5:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).
Re fault value = 3, 6:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).
Re fault value = 4, 7:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).
Re 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 p342, re-calculate the speed controller p0340 = 4 and repeat the measurement.
Re fault value = 9:
- check the moment of inertia (p0341, p0342). After the change, re-calculate (p0340 = 3 or 4)
Re fault value = 10:
- check the moment of inertia (p0341, p0342). After the change: Calculate p0340 = 3.
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)

Drive object: VECTOR

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.

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Remedy: Re 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 %).

Re fault value = 2:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).

Re fault value = 3:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

Re fault value = 4:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).

Re fault value = 5:
- increase the torque limits (e.g. p1520, p1521).

Re 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

Drive object: VECTOR

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 direction of rotation is inhibited.

Remedy: Re fault value = 1:
Enable the direction of rotation (p1110 or p1111).

A07987 Drive: Rotating measurement, no encoder available

Drive object: VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: No encoder available. The rotating measurement was carried out without encoder (sensorless).
Alarm value (r2124, interpret decimal):
1: An encoder is not connected.
2: It involves a SINAMICS G drive unit that only supports sensorless closed-loop control.

Remedy: Re alarm value = 1:
Connect-up the encoder.
Re alarm value = 2:
None necessary.

F07988 Drive: Rotating measurement, no configuration selected

Drive object: VECTOR

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)

F07989 Drive: Rotating measurement leakage inductance (q-axis)

Drive object: VECTOR

Reaction: OFF1 (NONE, OFF2)

Acknowledge: IMMEDIATELY

Cause: An error has occurred while measuring the dynamic leakage inductance.
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.

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5: The 100% flux setpoint was not reached.
6: No Lq measurement possible because field weakening is active.
7: Speed actual value exceeds the maximum speed p1082 or 75% of the rated motor speed.
8: Speed actual value is below 2 % of the rated motor speed.

Remedy: Re fault value = 1:
- check the motor parameters.
- carry out a motor data identification routine (p1910).
- if required, reduce the dynamic factor (p1967 < 25 %).

Re fault value = 2:
- adapt the speed setpoint (p1965) or adapt the minimum limit (p1080).

Re fault value = 3:
- adapt the speed setpoint (p1965) or suppression (skip) bandwidths (p1091 ... p1094, p1101).

Re fault value = 4:
- adapt the speed setpoint (p1965) or maximum limit (p1082, p1083 and p1086).

Re fault value = 5:
- flux setpoint p1570 = 100% and current setpoint p1610 = 0% kept during the Lq measurement.

Re fault value = 6:
- reduce the regenerative load so that the drive does not reach field weakening when accelerating.
- reduce p1965 so that the q leakage inductance is recorded at lower speeds.

Re fault value = 7:
- increase p1082 if this is technically permissible.
- reduce p1965 so that the q leakage inductance is recorded at lower speeds.

Re fault value = 8:
- reduce the load when motoring so that the drive is not braked.
- increase p1965 so that the measurement is possibly done at higher speeds.

Note:
The measurement of the q leakage inductance can be disabled using p1959.5. If only bit 5 is set in p1959, then only this measurement is carried out if p1960 is set to 1, 2 and the drive is powered-up.
See also: p1959 (Rotating measurement configuration)

F07990 Drive: Incorrect motor data identification

Drive object: SERVO, VECTOR

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.
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.
50: With the selected current controller sampling rate, the pulse frequency cannot be implemented.
Note:
Percentage values are referred to the rated motor impedance:
Zn = Vmot.nom / sqrt(3) / Imot,nom
101: Voltage amplitude even at 30% maximum current amplitude is too low to measure the inductance.
102, 104: Voltage limiting while measuring the inductance.
103: Maximum frequency exceeded during the rotating inductance measurement.
110: Motor not finely synchronized before the rotating measurement.
111: The zero mark is not received within 2 revolutions.
112: Fine synchronization is not realized within 8 seconds after the zero mark has been passed.
113: The power, torque or current limit is zero.
120: Error when evaluating the magnetizing inductance.

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125: Cable resistance greater than the total resistance.
126: Series inductance greater than the total leakage inductance.
127: Identified leakage inductance negative.
128: Identified stator resistance negative.
129: Identified rotor resistance negative.
130: Drive data set changeover during the motor data identification routine.
140: The setpoint channel inhibits both directions of rotation.
160: Accelerating when determining kT, moment of inertia or reluctance torque too short or the accelerating time is too long.
173: Internal problem.
180: Identification speed (maximum speed, rated speed, 0.9 * p0348) less than p1755.
190: Speed setpoint not equal to zero.
191: An actual speed of zero is not reached.
192: Speed setpoint not reached.
193: Inadmissible motion of the motor when identifying the voltage emulation error.
194: Supplementary torque (r1515) not equal to zero.
195: Closed-loop torque control active.
200, 201: Not possible to identify the voltage emulation error characteristic of the drive converter (p1952, p1953).

Remedy:

Re fault value = 0:
Check whether motor is correctly connected. Observe config. (star-delta).
Re fault value = 1 ... 40:
- check whether motor data have been correctly entered into p0300, p0304 - p0311.
- is there an appropriate relationship between the motor power rating and that of the Motor Module? The ratio of the Motor Module to the rated motor current should not be less than 0.5 and not be greater than 4.
- check motor config. (star-delta).
Re fault value = 2:
For parallel circuits: Check the motor winding system in p7003.
If, for power units connected in parallel, a motor is specified with a single-winding system (p7003 = 0), although a multi-winding system is being used, then a large proportion of the stator resistance is interpreted as feeder cable resistance and entered in p0352.
Re fault value = 4, 7:
Check whether inductances are correctly entered in p0233 and p0353.
Check whether motor was correctly connected (star/delta).
Re fault value = 50:
Reduce current controller sampling rate.
Re fault value = 101:
Increase current limit (p0640) or torque limit (p1520, p1521).
Check current controller gain (p1715).
Reduce current controller sampling time (p0115).
It may be impossible to completely identify the L characteristic, as required current amplitude is too high.
Suppress meas. (p1909, p1959).
Re fault value = 102, 104:
Reduce current limit (p0640).
Check current controller P gain.
Suppress meas. (p1909, p1959).
Re fault value = 103:
Increase external moment of inertia (if possible).
Reduce current controller sampling time (p0115).
Suppress meas. (p1909, p1959).
Re fault value 110:
Before rotating measurement, traverse motor over zero mark.
Re fault value 111:
It is possible that encoder does not have zero mark. Correct setting in p0404.Bit15.
Encoder pulse number was incorrectly entered. Correct setting in p408.
If zero mark signal is defective, replace encoder.
Re fault value 112:
Upgrade encoder software.
Re fault value = 113:
Check the limits (p0640, p1520, p1521, p1530, p1531), correct the zero values.
Re fault value 120:
Check current controller P gain (p1715) and if required, reduce.
Increase pulse frequency (p1800).

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Re fault 125:
Reduce cable resistance (p0352).
Re fault 126:
Reduce series inductance (p0353).
Re fault 127, 128, 129:
It is possible that current controller is oscillating. Reduce p1715 before next measurement.
Re fault 130:
Do not initiate a drive data set changeover during motor ident. routine.
Re fault value 140:
Before the measurement, enable at least one direction of rotation (value of p1110 = 0 or value of p1111 = 0 or p1959.14 = 1 or p1959.15 = 1).
Re fault value = 160:
- extend accelerating time when determining kT, moment of inertia and reluctance torque, e.g. by increasing max. speed (p1082), increasing moment of inertia or reducing max. current (p0640).
- in sensorless operation with load moment of inertia, parameterize the load moment of inertia (p1498).
- reduce the ramp-up time (p1958).
- increase speed controller P-gain (p1460).
- suppress meas. (p1959).
Re fault value 173:
-
Re fault value 180:
Increase max. speed (p1082).
Reduce p1755.
Suppress meas. (p1909, p1959).
Re fault value 190:
Set speed setpoint to zero.
Re fault value 191:
Do not start motor data ident. routine while motor is still rotating.
Re fault value = 192:
Check closed-loop speed control (motor rotor may be locked or closed-loop speed control is not functioning).
For p1215 = 1, 3 (brake the same as the sequence control) check the control sense (p0410.0).
Ensure that enable signals are present during measurement.
Remove any pulling loads from motor.
Increase max. current (p0640).
Reduce max. speed (p1082).
Suppress meas. (p1959).
Re fault value 193:
The motor has moved through more than 5° electrical (r0093). Lock motor rotor at one of these pole position angles (r0093): 90°, 210° or 330° (+- 5°) and then start identification.
Re fault value 194:
Switch-out all supplementary torques (e.g. CI:p1511).
For hanging/suspended axes: Lock motor rotor at one of these pole position angles (r0093): 90°, 210° or 330° (+- 1°) and then start identification.
Re fault value 195:
De-select closed-loop torque control (p1300 = 21 or 20, or set the signal source in p1501 to a 0 signal).
Re fault value = 200, 201:
- set pulse frequency to 0.5 * current controller frequency (e.g. 4 kHz for a current controller clock cycle of 125 us).
- reduce cable length between Motor Module and motor.
- read-out measured values (r1950, r1951) and therefore determine suitable values for p1952, p1953 according to your own estimation.

A07991 (N) Drive: Motor data identification activated

Drive object: SERVO

Reaction: NONE

Acknowledge: NONE

Cause: The motor data ident. routine is activated.
The motor data identification routine is carried out at the next power-on command.
See also: p1910 (Motor data identification routine, stationary (standstill)), p1960 (Rotating measurement selection)

Remedy: None necessary.
The alarm automatically disappears after the motor data identification routine has been successfully completed or for the setting p1910 = 0 or p1960 = 0.

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Reaction upon N: NONE
Acknowl. upon N: NONE

A07991 (N) Drive: Motor data identification activated

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The motor data ident. routine is activated.
The motor data identification routine is carried out at the next power-on command.
See also: p1910 (Motor data identification routine, stationary (standstill))
Remedy: None necessary.
The alarm automatically disappears after the motor data identification routine has been successfully completed or for the setting p1900 = 0.
Reaction upon N: NONE
Acknowl. upon N: NONE

F07993 Drive: Incorrect direction of rotation of the field or encoder actual value inversion

Drive object: SERVO
Reaction: OFF2 (NONE)
Acknowledge: IMMEDIATELY
Cause: Either the direction of the rotating field or the encoder actual value has an incorrect sign. The motor data identification automatically changed the actual value inversion (p0410) in order to correct the control sense. This can result in a direction of rotation change. To acknowledge this fault, the correctness of the direction of rotation must first be acknowledged with p1910 = -2.
Remedy: Check the direction of rotation, also for the position controller, if one is being used.
If the direction of rotation is correct, the following applies:
No additional measures are required (except p1910 = -2 and acknowledge fault).
If the direction of rotation is incorrect, the following applies:
To change the direction of rotation, two phases must be interchanged and the motor identification routine must be repeated.

F07995 Drive: Pole position identification not successful

Drive object: SERVO
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The pole position identification routine was unsuccessful.
Fault value (r0949, interpret decimal):
1: No current is established.
2: The starting current is not zero.
3: The selected max. distance was exceeded (p1981).
4x: The measuring signal does not permit a clear evaluation.
5: The max. current was exceeded during the measurement.
6: The current measurement must be re-calibrated.
7x: The Sensor Module does not support the pole position identification routine.
70 ... 79: Only for internal Siemens troubleshooting.
8: The pole position identification routine current required is greater than the max. current.
9: The set pole position identification routine current is zero.
10: Data set changeover during the pole position identification.
11: The encoder adjustment to determine the commutation angle (p1990 = 1) and the encoder without zero mark is not finely synchronized or does not have any valid data.
100: Motion-based pole position identification, 1st and 2nd measurement different. Motor locked or current (p1993) too low.
101: Motion-based position position identification, insufficient motion, motor locked or current (p1993) too low.
102: Motion-based pole position identification, brake is being used and is closed. The motion-based position position identification in conjunction with the brake is not permitted.
103: Motion-based pole position identification without encoder.
104: Motion-based pole position identification, speed actual value not zero after stabilizing time.
Note: x = 0 ... 9

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Remedy: Re fault value = 1:
Check the motor connection and DC link voltage.
For the following parameters, set practical values that are not zero (p0325, p0329).
Re fault value = 3:
Increase the max. distance (p1981).
Reduce the currents for the pole position identification routine (p0325, p0329).
Stop the motor in order to carry out the pole position identification routine.
Re fault value = 40 ... 49:
Increase the currents for the pole position identification routine (p0325, p0329).
Stop the motor in order to carry out the pole position identification routine.
Select another technique for pole position identification routine (p1980).
Use another motor, absolute encoder or Hall sensors.
Re fault value = 5:
Reduce the currents for the pole position identification routine (p0325, p0329).
Re fault value = 6:
Re-calibrate the Motor Module.
Re fault value = 7x:
Upgrade the software in the Sensor Module.
Re fault value = 8:
Reduce the currents for the pole position identification routine (p0329, p0325, p1993).
The power unit cannot provide the necessary pole position identification routine current (p0209 < p0329, p0325, p1993), replace the power unit by a power unit with a higher max. current.
Re fault value = 9:
Enter a value not equal to zero in the pole position identification routine current (p0329, p0325, p1993).
Re fault value = 10:
Do not initiate a data set changeover during the pole position identification.
Re fault value = 11:
- for incremental encoders without commutation with zero mark (p0404.15 = 0), it does not make sense to adjust the encoder to determine the commutation angle (p1990 = 1). In this case, the function should be de-selected (p1990 = 0) or, for an encoder with suitable zero mark, commutation with zero mark should be selected (p0404.15 = 1).
- for absolute encoders, only adjust the encoder to determine the commutation angle (p1990 = 1) if the encoder supplies commutation information and is finely synchronized (p1992.8 = 1 and p1992.10 = 1). The encoder is possibly parked, de-activated (p0145), not ready to operate or signals a fault condition.
- deselect the encoder adjustment to determine the commutation angle (set p1990 to 0).
Re fault value = 100, 101:
Check and ensure that the motor is free to move.
Increase the current for motion-based pole position identification (p1993).
Re fault value = 102:
If the motor is to be operated with a brake: Select a different technique to identify the pole position (p1980).
If the motor can be operated without a brake: Open the brake (p1215 = 2).
Re fault value = 103:
The motion-based pole position identification can only be carried out using an encoder. Connect an encoder or select another technique for pole position identification routine (p1980).
Re fault value = 104:
Pole position identification, increase the smoothing time, motion-based (p1997).
Pole position identification, increase the rise time, motion-based (p1994).
Pole position identification, check the gain, motion-based (p1995).
Pole position identification, check the integral time, motion-based (p1996).

F07996 Drive: Pole position identification routine not carried out

Drive object: SERVO

Reaction: ENCODER (OFF2)

Acknowledge: IMMEDIATELY

Cause: In operation, the operating mode that requires a pole position identification was changed-over, which is not possible in this state:
- the drive was changed over, flying, from sensorless operation to operation with encoder without having previously carried out a pole position identification for the encoder. p1404 is then at a value between zero and the max. speed and the pulses in the speed range above p1404 were enabled without a pole position ident. routine having been previously carried out in operation with encoder.
- in operation, an EDS changeover was made to an encoder where it is necessary to carry out a pole position identification. However, this has still not been carried out (p1982 = 1 or 2 and p1992.7 = 0).

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Remedy: - for a flying changeover between operation with and without encoder with pole position identification after POWER ON or commissioning (p0010 not equal to zero) enable the pulses once at zero speed. This means that the pole position identification routine is carried out and the result is available for operation.
- carry out the EDS changeover with the pulses inhibited, or, before the changeover, carry out a pole position identification using this data set.

A07998 Drive: Motor data identification active on another drive

Drive object: SERVO
Reaction: NONE
Acknowledge: NONE
Cause: The motor data identification is activated on the drive object specified in the fault value and interlocks the other drive objects so they cannot be powered-up.
Fault value (r0949, interpret decimal):
Drive object with the active motor data identification.
See also: p1910 (Motor data identification routine, stationary (standstill)), p1960 (Rotating measurement selection)
Remedy: - wait for the complete execution of the motor data identification of the drive object designated in the fault value.
- de-select the motor data identification for the drive object designated in the fault value (p1910 = 0 or p1960 = 0).

A07999 Drive: Motor data identification cannot be activated

Drive object: SERVO
Reaction: NONE
Acknowledge: NONE
Cause: Closed-loop control is enabled on a SERVO drive object type. To select motor data identification, pulses must be canceled for all SERVO drive objects.
Fault value (r0949, interpret decimal):
Drive object with enabled closed-loop control.
Remedy: Withdraw the pulse enable on all drives and re-activate the motor data identification.

F08000 (N, A) TB: +/-15 V power supply faulted

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, 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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F08010 (N, A) TB: Analog-digital converter

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F08500 (A) COMM BOARD: Monitoring time configuration expired

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: A_INFEED: OFF1 (OFF2)
SERVO: OFF1 (OFF2, OFF3)
VECTOR: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the configuration has expired.
Fault value (r0949, interpret decimal):
0: The transfer of the send-configuration data has been exceeded (time).
1: The transfer of the receive-configuration data has been exceeded (time).

Remedy: Check communication line.

Reaction upon A: NONE
Acknowl. upon A: NONE

F08501 (A) COMM BOARD: Monitoring time process data expired

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: A_INFEED: OFF1 (OFF2)
SERVO: OFF1 (OFF2, OFF3)
VECTOR: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The set monitoring time expired while transferring process data via COMM BOARD.
See also: p8840 (COMM BOARD monitoring time)

Remedy: - check communications link.
- check the set monitoring time if the error persists.
See also: p8840 (COMM BOARD monitoring time)

Reaction upon A: NONE
Acknowl. upon A: NONE

F08502 (A) COMM BOARD: Monitoring time sign-of-life expired

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: A_INFEED: OFF1 (OFF2)
SERVO: OFF1 (OFF2, OFF3)
VECTOR: OFF1 (OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The monitoring time for the sign-of-life counter has expired.
The connection to the COMM BOARD was interrupted.

Remedy: - check communications link.
- check COMM BOARD.

Reaction upon A: NONE
Acknowl. upon A: NONE

A08504 (F) COMM BOARD: Internal cyclic data transfer error

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The cyclic actual and/or setpoint values were not transferred within the specified times.
Alarm value (r2124, interpret decimal):
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Remedy: Check the parameterizing telegram (Ti, To, Tdp, etc.).
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

F08510 (A) COMM BOARD: Send configuration data invalid

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: A_INFEED: OFF1 (OFF2)
SERVO: OFF1 (OFF2, OFF3)
VECTOR: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: COMM BOARD did not accept the send-configuration data.
Fault value (r0949, interpret decimal):
Return value of the send-configuration data check.
Remedy: Check the send configuration data.
Reaction upon A: NONE
Acknowl. upon A: NONE

A08511 (F) COMM BOARD: Receive configuration data invalid

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
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.
0: Configuration accepted.
1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence was defined using p0978.
2: Too many data words for input or output to a drive object. A max. of 16 words is permitted for SERVO and VECTOR; a max. of 5 words for A_INF, TB30, TM31 and CU320.
3: Uneven number of bytes for input or output.
4: Setting data for synchronization not accepted.
5: Drive still not in cyclic operation.
6: Buffer system not accepted.
7: Cyclic channel length too short for this setting.
8: Cyclic channel address not initialized.
9: 3-buffer system not permitted.
10: DRIVE-CLiQ fault.
11: CU-Link fault.
12: CX32 not in cyclic operation.
Remedy: Check the receive configuration data.
Re alarm value = 1:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

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A08520 (F) COMM BOARD: Non-cyclic channel error

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The memory or the buffer status of the non-cyclic channel has an error.
Alarm value (r2124, interpret decimal):
0: Error in the buffer status.
1: Error in the memory.

Remedy: Check communication line.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

A08526 (F) COMM BOARD: No cyclic connection

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: There is no cyclic connection to the control.

Remedy: Establish the cyclic connection and activate the control with cyclic operation.
For PROFINET, check the parameters "Name of Station" and "IP of Station" (r61000, r61001).

Reaction upon F: NONE (OFF1)

Acknowl. upon F: IMMEDIATELY

A08530 (F) COMM BOARD: Message channel error

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The memory or the buffer status of the message channel has an error.
Alarm value (r2124, interpret decimal):
0: Error in the buffer status.
1: Error in the memory.

Remedy: Check communication line.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

A08550 PZD Interface Hardware assignment error

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The assignment of the hardware to the PZD interface has been incorrectly parameterized.
Alarm value (r2124, interpret decimal):
1: Only one of the two indices is not equal to 99 (automatic).
2: Both PZD interfaces are assigned to the same hardware.
3: Assigned COMM BOARD missing.
4: CBC10 is assigned to interface 1.
See also: p8839 (PZD interface hardware assignment)

Remedy: Correct the parameterization (p8839).

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F08700 (A) CBC: Communications error

Drive object: CU_LINK, CU_S, DMC20, SERVO, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: A_INFEED: NONE
SERVO: OFF3 (NONE, OFF1, OFF2)
VECTOR: 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 interrupted.
- bus cable not connected.
- 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 (CBC node guarding), p8641 (CBC abort connection option code)

Remedy:
- check the bus cable
- check the baud rate (p8622).
- check the bit timing (p8623).
- check the master.

See also: p8622 (CBC baud rate), p8623 (CBC bit timing selection)

Reaction upon A: NONE

Acknowl. upon A: NONE

F08700 (A) CBC: Communications error

Drive object: A_INF, B_INF, S_INF

Reaction: A_INFEED: NONE
SERVO: OFF3 (NONE, OFF1, OFF2)
VECTOR: 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 interrupted.
- bus cable not connected.
- 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.

See also: p8604 (CBC node guarding), p8641 (CBC abort connection option code)

Remedy:
- check the bus cable
- check the baud rate (p8622).
- check the bit timing (p8623).
- check the master.

See also: p8622 (CBC baud rate), p8623 (CBC bit timing selection)

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Reaction upon A: NONE
Acknowl. upon A: NONE

F08701 CBC: NMT state change

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: A_INFEED: OFF2
SERVO: OFF3
VECTOR: 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: None necessary.
Acknowledge the fault and continue operation.

A08751 CBC: Telegram loss

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The CAN controller has lost a receive message (telegram).

Remedy: Reduce the cycle times of the receive messages.

A08752 CBC: Error counter for error passive exceeded

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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 (CBC baud rate), p8623 (CBC bit timing selection)

A08753 CBC: Message buffer overflow

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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).
Re alarm value = 2:
- reduce the cycle times of the SDO receive messages.
See also: p8622 (CBC baud rate), p8623 (CBC bit timing selection)

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A08754 CBC: Incorrect communications mode

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: In the "operational" mode, an attempt was made to change parameters p8700 ... p8737.

Remedy: Change into the "pre-operational" or "stopped" mode.

A08755 CBC: Obj cannot be mapped

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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 CBC: Number of mapped bytes exceeded

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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 (CBC receive mapping for RPDO 1), p8711 (CBC receive mapping for RPDO 2), p8712 (CBC receive mapping for RPDO 3), p8713 (CBC receive mapping for RPDO 4), p8714 (CBC receive mapping for RPDO 5), p8715 (CBC receive mapping for RPDO 6), p8716 (CBC receive mapping for RPDO 7), p8717 (CBC receive mapping for RPDO 8), p8730 (CBC send mapping for TPDO 1), p8731 (CBC send mapping for TPDO 2), p8732 (CBC send mapping for TPDO 3), p8733 (CBC send mapping for TPDO 4), p8734 (CBC send mapping for TPDO 5), p8735 (CBC send mapping for TPDO 6), p8736 (CBC send mapping for TPDO 7), p8737 (CBC send mapping for TPDO 8)

A08757 CBC: Set COB-ID invalid

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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.

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A08758 CBC: Number of PDO channels too low

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The number of PDO channels in p8740 has either been set to 0 or too low.
See also: p8740 (CBC channel assignment)

Remedy: The number of channels set in p8740 must be greater than or equal to the number of PDOs.
There are 2 possibilities:
Increase the number of channels in p8740 and confirm the selection using p8741.
Reduce the number of PDOs by setting the COB-ID to invalid.
See also: p8740 (CBC channel assignment), p8741 (CBC PDO configuration acknowledgement)

A08759 CBC: PDO COB-ID already available

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: An existing PDO COB-ID was allocated.

Remedy: Select another PDO COB-ID.

A13000 License not adequate

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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 CompactFlash card with the required licensing data was withdrawn in operation.
2:
An adequate license was not able to be determined, as an error occurred when reading-out the required licensing data from the CompactFlash 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: Re alarm value = 0:
Additional licenses are required and these must be activated (p9920, p9921).
Re alarm value = 1:
With the system powered-down, re-insert the CompactFlash card that matches the system.
Re alarm value = 2:
Enter and activate the license key (p9920, p9921).
Re 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).
Re alarm value = 4:
- carry out a POWER ON.
- upgrade the firmware release.
- contact the Hotline.

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A13001 Error in license checksum

Drive object: A_INF, B_INF, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

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).

F30001 Power unit: Overcurrent

Drive object: All objects

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).
- V/f operation: Up ramp set too low.
- V/f operation: Rated motor current is significantly greater than that of the Motor Module.
- infeed: High discharge and post-charging current for line supply voltage interruptions.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at power-on due to the missing commutating reactor.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Additional causes for a parallel switching device (r0108.15 = 1):
- a power unit has tripped (powered-down) due to a ground fault.
- the closed-loop circulating current control is either too slow or has been set too fast.

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).
- V/f operation: Increase up ramp.
- V/f operation: Check the assignment of the rated currents of the motor and Motor Module.
- infeed: Check the line supply quality.
- infeed: Reduce the load when motoring.
- infeed: Correct connection of the line commutating 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.

For a parallel switching device (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
- check the setting of the closed-loop circulating current control (p7036, p7037).

F30002 Power unit: DC link voltage, overvoltage

Drive object: All objects

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.
- when operating with a VSM, the phase assignment L1, L2, L3 at the VSM differs from the phase assignment at the power unit.

Fault value (r0949, interpret decimal):
DC link voltage [1 bit = 100 mV].
For SINAMICS GM/SM, the following applies:
Fault value (r0949, interpret decimal):
32: Overvoltage in the negative partial DC link (VdcP)

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64: Overvoltage in the positive partial DC link (VdcN)
96: Overvoltage in both partial -DC links

Remedy:
- increase the ramp-down time.
- activate the DC link voltage controller.
- use a brake resistor or Active Line Module.
- increase the current limit of the infeed or use a larger module (for the Active Line Module).
- check the line supply voltage.
- check and correct the phase assignment at the VSM and at the power unit.

See also: p0210 (Drive unit line supply voltage), p1240 (Vdc controller or Vdc monitoring configuration)

F30003 Power unit: DC link voltage, undervoltage

Drive object: All objects

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 supply infeed failed or faulted.

Note:
The monitoring threshold for the DC link undervoltage is the minimum of the following values:
- 85% of the unit supply voltage (p0210).
- lowest permissible lower DC link voltage of the power units (descriptive data).

Remedy:
- check the line supply voltage
- check the line supply infeed and if necessary observe the fault messages of the line supply infeed.

Note:
The ready signal of the infeed r0863 must be connected to the associated inputs p0864 of the drives.
See also: p0210 (Drive unit line supply voltage)

F30004 Power unit: Overtemperature heatsink AC inverter

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: The temperature of the power unit heatsink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.
- pulse frequency too high.

Fault value (r0949):
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 this alarm threshold for alarm A05000 has been fallen below.
See also: p1800 (Pulse frequency)

F30005 Power unit: Overload I2t

Drive object: All objects

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].

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Remedy: - reduce the continuous load.
- adapt the load duty cycle.
- check the motor and power unit rated currents.
See also: r0036 (Power unit overload I2t), r0206 (Rated power unit power), p0307 (Rated motor power)

F30006 Power unit: Thyristor Control Board

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The Thyristor Control Board (TCB) of the Basic Line Module signals a fault.
- there is not line supply voltage.
- the line contactor is not closed.
- the line supply voltage is too low.
- line supply frequency outside the permissible range (45 ... 66 Hz).
- there is a DC link short-circuit.
- there is a DC link short-circuit (during the pre-charging phase).
- voltage supply for the Thyristor Control Board outside the nominal range (5 ... 18 V) and line voltage >30 V.
- there is an internal fault in the Thyristor Control Board.

Remedy: The faults must be saved in the Thyristor Control Board and must be acknowledged. To do this, the supply voltage of the Thyristor Control Board must be switched-out for at least 10 s!
- check the line supply voltage
- check or energize the line contactor.
- check the monitoring time and, if required, increase (p0857).
- if required, observe additional power unit messages/signals.
- check the DC link regarding short-circuit or ground fault.
- evaluate diagnostic LEDs for the Thyristor Control Board.

F30008 Power unit: Sign-of-life error cyclic data

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
The cyclic setpoint telegrams of the Control Unit were not received on time by the power unit for at least two clock cycles within a time interval of 20 ms.
Remedy: - check the electrical cabinet design and cable routing for EMC compliance

A30010 (F) Power unit: Sign-of-life error cyclic data

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
The cyclic setpoint telegrams of the Control Unit were not received on time by the power unit for at least one clock cycle.
Remedy: - check the electrical cabinet design and cable routing for EMC compliance
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)

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F30011 Power unit: Line phase failure in main circuit

Drive object: All objects
Reaction: OFF2 (OFF1)
Acknowledge: IMMEDIATELY
Cause: A line phase failure was detected at the power unit.
- the fuse of a phase of a main circuit has ruptured.
- the DC link voltage ripple has exceeded the permissible limit value.

Remedy: Check the fuses in the main circuit.

F30012 Power unit: Temperature sensor heatsink wire breakage

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: The connection to one of the heatsink temperature sensors in the power unit is interrupted.
Fault value (r0949, interpret hexadecimal):
Bit 0: Module slot (electronics slot)
Bit 1: Air intake
Bit 2: Inverter 1
Bit 3: Inverter 2
Bit 4: Inverter 3
Bit 5: Inverter 4
Bit 6: Inverter 5
Bit 7: Inverter 6
Bit 8: Rectifier 1
Bit 9: Rectifier 2
See also: r0949 (Fault value)

Remedy: Contact the manufacturer.

F30013 Power unit: Temperature sensor heatsink short-circuit

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: The heatsink temperature sensor in the Motor Module is short-circuited.
Fault value (r0949, interpret hexadecimal):
Bit 0: Module slot (electronics slot)
Bit 1: Air intake
Bit 2: Inverter 1
Bit 3: Inverter 2
Bit 4: Inverter 3
Bit 5: Inverter 4
Bit 6: Inverter 5
Bit 7: Inverter 6
Bit 8: Rectifier 1
Bit 9: Rectifier 2

Remedy: Contact the manufacturer.

A30016 (N) Power unit: Load supply switched-out

Drive object: SERVO, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The following applies for CU31x and CUA31:
The DC link voltage is too low.
Fault value (r0949, interpret decimal):
DC link voltage in [V].

Remedy: The following applies for CU31x and CUA31:
Under certain circumstances, the AC line supply is not switched-in.

Reaction upon N: NONE
Acknowl. upon N: NONE

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F30017 Power unit: Hardware current limit has responded too often

Drive object: All objects

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.
For infeed units, the following applies:
- closed-loop control is incorrectly parameterized.
- load on the infeed is too high.
- Voltage Sensing Module incorrectly connected.
- commutating reactor missing or the incorrect type.
- power unit defective.

The following applies to Motor Modules:
- 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: For infeed units, the following applies:
- check the controller settings, if required, reset and identify the controller (p0340 = 2, p3410 = 5).
- reduce the load, if required, increase the DC link capacitance or use a higher-rating infeed.
- check the connection of the optional Voltage Sensing Module.
- check the connection and technical data of the commutating reactor.
- check the power cables for short-circuit or ground fault.
- replace power unit.

The following applies to Motor Modules:
- 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

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Power unit has detected a ground fault.
- ground fault in the power cables
- winding fault or ground fault at the motor.
- CT defective.

Additional cause for CU310/CUA31:
- when the brake is applied, this causes the hardware DC current monitoring to respond.

Fault value (r0949, interpret decimal):
Absolute value, summed current [32767 = 271 % rated current].
Additional cause for parallel switching units (r0108 bit 15 = 1):
- the closed-loop circulating current control is either too slow or has been set too fast.

Remedy:
- check the power cable connections.
- check the motor.
- check the CT.

The following applies additionally for CU310 and CUA31:
- check the cables and contacts of the brake connection (a wire is possibly broken).

For parallel switching units (r0108 bit 15 = 1) the following also applies:
- check the ground fault monitoring thresholds (p0287).
- check the setting of the closed-loop circulating current control (p7036, p7037).

See also: p0287 (Ground fault monitoring thresholds)

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F30022 Power unit: Monitoring V_ce

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: In the power unit, the monitoring of the collector-emitter voltage (V_ce) of the semiconductor has responded.
Possible causes:
- fiber-optic cable interrupted.
- power supply of the IGBT gating module missing.
- short-circuit at the Motor Module 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: V_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.

A30023 Power unit: Overtemperature thermal model alarm

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The temperature difference between the heatsink 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 (Control Unit temperature)

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.

F30024 Power unit: Overtemperature thermal model

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The temperature difference between the heatsink 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 (Control Unit temperature)

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.

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F30025 Power unit: Chip overtemperature

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: 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):
Temperature difference between the heatsink and chip [1 Bit = 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 this alarm threshold for alarm A05001 has been fallen below.
See also: r0037 (Control Unit temperature)

F30027 Power unit: Precharging DC link time monitoring

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The power unit DC link was not able to be pre-charged within the expected time.
- line supply voltage too low.
- line supply phase fault.
- short-circuit or ground fault in the DC link.
- pre-charging circuit defective.

Fault value (r0949):
Missing internal enable signals, power unit (lower 16 bit):
(Inverted bit-coded notation FFFF hex -> all internal enable signals available)
Bit 0: Power supply of the IGBT gating shut down
Bit 1: Reserved
Bit 2: Reserved
Bit 3: Ground fault detected
Bit 4: Peak current intervention
Bit 5: I2t exceeded
Bit 6. Thermal model overtemperature calculated
Bit 7: (heatsink, gating module, power unit) overtemperature measured
Bit 8: Reserved
Bit 9: Overvoltage detected
Bit 10: Power unit has completed pre-charging, ready for pulse enable
Bit 11: STO terminal missing
Bit 12: Overcurrent detected
Bit 13: Armature short-circuit active
Bit 14: DRIVE-CLiQ fault active
Bit 15: Uce fault detected, transistor de-saturated due to overcurrent/circuit-circuit
Status, power unit (upper 16 bit, hexadecimal number):
0: Fault status (wait for OFF and fault acknowledgement)
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 bypass contactor to open -> change into the fault state
5: Wait for bypass contactor to open -> change into restart inhibit
6: Commissioning
7: Ready for pre-charging
8: Pre-charging started, DC link voltage lower than the minimum switch-on voltage
9: Pre-charging, DC link voltage end of pre-charging still not detected

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10: Wait for the end of the de-bounce time of the main contactor after pre-charging has been completed
11: Pre-charging completed, ready for pulse enable
12: It was detected that the STO terminal was energized at the power unit
See also: p0210 (Drive unit line supply voltage)

Remedy:
- check the line supply voltage
- check the line supply.
- line contactor was closed during the DC link fast discharge by the braking module, the pre-charging resistor must cool down, check the interconnection of the external line contactor.

See also: p0210 (Drive unit line supply voltage)

A30031 Power unit: Hardware current limiting, phase U

Drive object: All objects

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.

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.

A30032 Power unit: Hardware current limiting, phase V

Drive object: All objects

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.

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.

A30033 Power unit: Hardware current limiting, phase W

Drive object: All objects

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.

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.

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F30035 Power unit: Air intake overtemperature

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: Power unit air intake temperature has exceeded the permissible limit value. For air-cooled power units, the limit is at 55 degrees Celsius.
- ambient temperature too high.
- insufficient cooling, fan failure
Fault value (r0949):
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.
Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05002 has been fallen below.

F30036 Power unit: Electronics board overtemperature

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Power unit temperature in the module slot of the drive converter has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.
Fault value (r0949):
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.
Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05003 has been fallen below.

F30037 Power unit: Rectifier overtemperature

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Power unit rectifier temperature has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload
- ambient temperature too high.
- line supply phase failure.
Fault value (r0949):
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.
- check the line supply phases.
Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05004 has been fallen below.

A30038 Power unit: Capacitor fan monitoring

Drive object: B_INF
Reaction: NONE
Acknowledge: NONE
Cause: The capacitor fan signals a fault.
Remedy: Replace the capacitor fan in the power unit.

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F30039 **Power unit: Failure capacitor fan**

Drive object: B_INF
Reaction: OFF1
Acknowledge: IMMEDIATELY
Cause: The capacitor fan has failed.
Remedy: Replace the capacitor fan in the power unit.

F30040 **Power unit: Undervolt 24 V**

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: Failure of the 24 V power supply for the power unit.
- the 16 V threshold was fallen below for longer than 3 ms.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].
Remedy: Check the 24 V DC voltage supply to power unit.

A30041 (F) **Power unit: Undervoltage 24 V alarm**

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: 24 V power supply fault for the power unit.
- the 16 V threshold was fallen below.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].
Remedy: Check the 24 V DC voltage supply to power unit.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)

A30042 **Power unit: Fan operating time reached or exceeded**

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The maximum operating time of the fan in the power unit is set in p0252.
This message indicates the following:
Fault value (r0949, interpret decimal):
0: The maximum fan operating time is 500 hours.
1: The maximum fan operating time has been exceeded.
Remedy: Replace the fan in the power unit and reset the operating hours counter to 0 (p0251 = 0).
See also: p0251 (Operating hours counter power unit fan), p0252 (Maximum operating time power unit fan)

F30043 **Power unit: Overvolt 24 V**

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: The following applies for CU31x:
Overvoltage of the 24 V power supply for the power unit.
- the 31.5 V threshold was exceeded for more than 3 ms.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].
Remedy: Check the 24 V DC voltage supply to power unit.

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A30044 (F) Power unit: Overvoltage 24 V alarm

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The following applies for CU31x:
24 V power supply fault for the power unit.
- the 32.0 V threshold was exceeded.
Fault value (r0949):
24 V voltage [1 bit = 0.1 V].
Remedy: Check the 24 V DC voltage supply to power unit.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)

F30045 Power unit: Supply undervoltage

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: The following applies for CU31x:
Power supply fault in the power unit.
- the voltage monitoring on the DAC board signals an undervoltage fault on the module.
Remedy: Check the 24 V DC power supply for the power unit and if required replace the module.

A30046 (F) Power unit: Undervoltage, alarm

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Before the last new start, a problem occurred at the power unit power supply.
- the voltage monitoring in the internal FPGA of the PSA signals an undervoltage fault on the module.
Fault value (r0949):
Register value of the voltage fault register.
Remedy: Check the 24 V DC power supply for the power unit and if required replace the module.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)

F30047 Cooling system: Cooling medium flow rate too low

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Cooling system: Fault - flow rate has fallen below the fault value
Remedy:

F30050 Power unit: Supply overvoltage

Drive object: All objects
Reaction: OFF2
Acknowledge: POWER ON
Cause: The following applies for CU31x and CUA31:
- the voltage monitoring on the DAC board signals an overvoltage fault on the module.
Remedy: - check the voltage supply for the Control Unit (24 V).
- if required, replace the module.

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F30052 EEPROM data error

Drive object: All objects
Reaction: NONE
Acknowledge: POWER ON
Cause: EEPROM data error of the power unit module.
Fault value (r0949, interpret hexadecimal):
0: The EEPROM data read-in from the power unit module is inconsistent.
1: EEPROM data is not compatible to the firmware of the power unit application.
Remedy: Re fault value = 0:
Replace the power unit module or update the EEPROM data.
Re fault value = 1:
The following applies for CU31x and CUA31:
Update the firmware \SIEMENS\SINAMICS\CODE\SAC\cu31xi.ufw (cua31.ufw)

F30070 Cycle requested by the power unit module not supported

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The following applies for CU31x and CUA31:
A cycle is requested that is not supported by the power unit.
Fault value (r0949, interpret hexadecimal):
The following applies for CU31x and CUA31:
0: The current control cycle is not supported.
1: The DRIVE-CLiQ cycle is not supported.
2: Internal timing problem (clearance between RX and TX instants too low).
3: Internal timing problem (TX instant too early).
Remedy: The following applies for CU31x and CUA31:
The power unit only supports the following cycles:
62.5 µs, 125 µs, 250 µs and 500 µs
Fault value (r0949, interpret hexadecimal):
The following applies for CU31x and CUA31:
0: Set a permitted current control cycle.
1: Set a permitted DRIVE-CLiQ cycle.
2/3: Contact the manufacturer (there is possibly an incompatible firmware release).

F30071 No new actual values received from the power unit module

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The following applies for CU31x and CUA31:
More than one actual value telegram from the power unit has failed.
Remedy: The following applies for CU31x and CUA31:
Check the interface (adjustment and locking) to the power unit.

F30072 Setpoints are no longer being transferred to the power unit

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The following applies for CU31x and CUA31:
More than one setpoint telegram was not able to be transferred to the power unit.
Remedy: The following applies for CU31x and CUA31:
Check the interface (adjustment and locking) to the power unit.

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A30073 (N) Actual value/setpoint preprocessing no longer synchronous to DRIVE-CLiQ

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The following applies for CU31x and CUA31:
Communications to the power unit module are no longer in synchronism with DRIVE-CLiQ.
Remedy: The following applies for CU31x and CUA31:
Wait until synchronization is re-established.
Reaction upon N: NONE
Acknowl. upon N: NONE

F30074 Communications error to the power unit module

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: Communications is not possible to the power unit via the plug contact.
Remedy: The following applies for CU31x and CUA31:
Either replace the CU board or the power unit. You must check which of the two components must be replaced by replacing one and then the other component; if neither are available then both components must be returned.

F30105 PU: Actual value sensing fault

Drive object: All objects
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.

F30600 SI MM: STOP A initiated

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-based "Safety Integrated" function in the Motor Module (MM) has detected a fault and initiated STOP A (pulse cancelation via the safety shutdown path of the Motor Module).
- forced checking procedure of the safety shutdown path of the Motor Module unsuccessful.
- subsequent response to fault F30611 (defect in a monitoring channel).
Fault value (r0949, interpret decimal):
0: Stop request from the Control Unit.
1005: Pulses canceled although STO not selected and there is no internal STOP A present.
1010: Pulses enabled although STO is selected or an internal STOP A is present.
9999: Subsequent response to fault F30611.
Remedy: - select Safe Torque Off and de-select again.
- replace the Motor Module involved.
Re fault value = 9999:
- carry out diagnostics for fault F30611.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

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F30611 SI MM: Defect in a monitoring channel".

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function in the Motor Module (MM) has detected a fault in the data cross-check between the Control Unit (CU) and MM and initiated a STOP F.
As a result of this fault, after the parameterized transition has expired (p9858), fault F30600 is output (SI MM: STOP A initiated).
Fault value (r0949, interpret decimal):
0: Stop request from the Control Unit.
1 to 999:
Number of the cross-checked data that resulted in this fault. This number is also displayed in r9895.
1: SI monitoring clock cycle (r9780, r9880).
2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.
3: SI SGE changeover tolerance time (p9650, p9850).
4: SI transition period STOP F to STOP A (p9658, p9858).
5: SI enable Safe Brake Control (p9602, p9802).
6: SI motion enable, safety-relevant functions (p9501, internal value).
7: SI pulse cancelation delay time for Safe Stop 1 (p9652, p9852).
8: SI PROFIsafe address (p9610, p9810).
1000: Watchdog timer has expired. Within the time of approx. 5 * p9850 too many switching operations have occurred at the safety-related inputs of the Control Unit.
1001, 1002: Initialization error, change timer / check timer.
2000: Status of the STO terminals on the Control Unit and Motor Module are different.
2001: Feedback signal for safe pulse cancelation on the Control Unit and Motor Module are different.
2002: Status of the delay timer SS1 on the Control Unit and Motor Module are different.

Remedy: Re fault value = 1 to 5 and 7 to 999:
- check the cross-checked data that resulted in a STOP F.
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 6:
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 1000:
- check the wiring of the safety-relevant inputs (SGE) on the Control Unit (contact problems).

Re fault value = 1001, 1002:
- carry out a POWER ON (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

Re fault value = 2000, 2001, 2002:
- check the tolerance time SGE changeover and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- replace the Motor Module involved.

Note:
CU: Control Unit
MM: Motor Module
SGE: Safety-relevant input
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
STO: Safe Torque Off / SH: Safe standstill

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N30620 (F, A) SI MM: Safe Torque Off active

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Torque Off" function was selected on the Motor Module (MM) via the input terminal and is active.
Note:
This message does not result in a safety stop response.
Remedy: None necessary.
Note:
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill
Reaction upon F: OFF2
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon A: NONE
Acknowl. upon A: NONE

N30621 (F, A) SI MM: Safe Stop 1 active

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The "Safe Stop 1" function (SS1) was selected on the Motor Module (MM) and is active.
Note:
This message does not result in a safety stop response.
Remedy: None necessary.
Note:
MM: Motor Module
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
Reaction upon F: A_INFEED: OFF2
SERVO: OFF3
VECTOR: OFF3
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon A: NONE
Acknowl. upon A: NONE

F30625 SI MM: Sign-of-life error in safety data

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive-based "Safety Integrated" function on the Motor Module (MM) has detected an error in the sign-of-life of the safety data between the Control Unit (CU) and MM and initiated a STOP A.
- there is either a DRIVE-CLiQ communications error or communications have 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 (power off/on) for all components.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
- de-select all drive functions that are not absolutely necessary.
- reduce the number of drives.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

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F30630 SI MM: Brake control error

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function on the Motor Module (MM) has detected a brake control error and initiated a STOP A.
- no motor holding brake connected.
- the motor holding brake control on the Motor Module or the Control Unit is faulty.
- a DRIVE-CLiQ communications error has occurred between the Control Unit and the Motor Module.
Fault value (r0949, interpret decimal):
10: No brake connected or fault in the Motor Module brake control circuit ("open brake" operation).
30: Short-circuit in the brake winding or fault in the Motor Module brake control circuit ("close brake" operation).
40: Defect in the brake control circuit of the Motor Module ("brake closed" state).
60, 70: Fault in the brake control of the Control Unit or communications fault between the Control Unit and Motor Module (brake control).

Remedy:
- select Safe Torque Off and de-select again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communications error between the Control Unit and the Motor Module involved and if required, carry out a diagnostics routine for the faults identified.
- check the electrical cabinet design and cable routing for EMC compliance
- replace the Motor Module involved.
Operation with Safe Brake Module:
- check the Safe Brake Modules connection.
- replace the Safe Brake Module.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

F30640 SI MM: Fault in the shutdown path of the second channel

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Motor Module has detected a communications error with the higher-level control or the TM54F to transfer the safety-relevant information.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: For the higher-level control, the following applies:
- check the PROFIsafe address in the higher-level control and Motor Modules and if required, align.
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.
For TM54F, carry out the following steps:
- start the copy function for the node identifier (p9700 = 1D hex).
- acknowledge hardware CRC (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.
The following generally applies:
- upgrade the Motor Module software.
Note:
MM: Motor Module
SI: Safety Integrated
See also: p9810 (SI PROFIsafe address (Motor Module))

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F30649 SI MM: Internal software error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: An internal error in the Safety Integrated software on the Motor Module 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 (power off/on) for all components.
- re-commission the Safety Integrated function and carry out a POWER ON.
- upgrade the Motor Module software.
- contact the Hotline.
- replace the Motor Module.
Note:
MM: Motor Module
SI: Safety Integrated

F30650 SI MM: Acceptance test required

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The "Safety Integrated" function on the Motor Module 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 the Motor Module not available.
1000: Reference and actual checksum in the Motor Module are not identical (booting).
- at least one checksum-checked piece of data is defective.
2000: Reference and actual checksum on the Motor Module are not identical (commissioning mode).
- reference checksum incorrectly entered into the Motor Module (p9899 not equal to r9898).
2003: Acceptance test is required as a safety parameter has been changed.
2005: The safety logbook has identified that the safety checksums have changed. An acceptance test is required.
3003: Acceptance test is required as a hardware-related safety parameter has been changed.
9999: Subsequent response of another safety-related fault, which occurred when booting and requires an acceptance test.
Remedy: Re fault value = 130:
- carry out safety commissioning routine.
Re fault value = 1000:
- again carry out safety commissioning routine.
- replace the CompactFlash card.
Re fault value = 2000:
- check the safety parameters in the Motor Module and adapt the reference checksum (p9899).
Re fault value = 2003, 2005:
- Carry out an acceptance test and generate an acceptance report.
Re fault value 3003:
- carry out the function checks for the modified hardware and generate an acceptance report.
The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Description Safety Integrated
Re fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.
Note:
MM: Motor Module
SI: Safety Integrated
See also: p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

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F30651 SI MM: Synchronization with Control Unit unsuccessful

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive-based "Safety Integrated" function is requesting synchronization of the safety time slices on the Control Unit and Motor Module. This synchronization routine was not successful.
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 (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
Note:
MM: Motor Module
SI: Safety Integrated

F30652 SI MM: Illegal monitoring clock cycle

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Safety Integrated monitoring clock cycle cannot be maintained due to the communication conditions requested in the system.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: Upgrade the Motor Module software.
Note:
MM: Motor Module
SI: Safety Integrated

F30655 SI MM: Align monitoring functions

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An error has occurred when aligning the Safety Integrated monitoring functions on the Control Unit (CU) and Motor Module (MM). Control unit and Motor Module were not able to determine a common set of supported SI monitoring functions.
- there is either a DRIVE-CLiQ communications error or communications have failed.
- Safety Integrated software releases on the Control Unit and Motor Module are not compatible with one another.
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 (power off/on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

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F30656 SI MM: Motor Module parameter error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: When accessing the Safety Integrated parameters for the Motor Module (MM) on the CompactFlash card, 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 the Motor Module corrupted.
131: Internal software error on the Control Unit.
255: Internal Motor Module software error.
Remedy: - re-commission the safety functions.
- upgrade the Control Unit software.
- upgrade the Motor Module software.
- replace the CompactFlash card.
Note:
MM: Motor Module
SI: Safety Integrated

F30659 SI MM: Write request for parameter rejected

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The write request for one or several Safety Integrated parameters on the Motor Module (MM) 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.
11: An attempt was made to enable the SBC function although this cannot be supported.
13: An attempt was made to enable the SS1 function although this cannot be supported.
14: An attempt was made to enable the safe motion monitoring function with the higher-level control, although this cannot be supported.
See also: r9771 (SI common functions (Control Unit)), r9871 (SI common functions (Motor Module)
Remedy: Re fault value = 10, 11:
- check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Motor Module that supports the function "Safe Torque Off" or "Safe Brake Control".
- upgrade the Motor Module software.
- upgrade the Control Unit software.
Note:
MM: Motor Module
SBC: Safe Brake Control
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
STO: Safe Torque Off / SH: Safe standstill

F30672 SI Motion: Control Unit software incompatible

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The existing Control Unit software does not support the safe drive-based motion monitoring function.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

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Remedy: - check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Control Unit that supports the safe motion monitoring function.
- upgrade the Control Unit software.
Note:
SI: Safety Integrated

F30680 SI Motion MM: Checksum error safety monitoring functions

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual checksum calculated by the Motor Module 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 cannot 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.
- carry out a POWER ON.
- carry out an acceptance test.
Note:
SI: Safety Integrated

C30681 SI Motion MM: Incorrect parameter value

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The parameter value cannot be parameterized with this value.
Fault value (r0949, interpret decimal):
Parameter number with the incorrect value.

Remedy: Correct the parameter value.

F30682 SI Motion MM: Monitoring function not supported

Drive object: SERVO, VECTOR

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 fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
30: The firmware version of the Motor Module is older than the version of the Control Unit.

Remedy: De-select the monitoring function involved (p9301, p9301, p9303, p9601, p9801).
Upgrade the Motor Module firmware.
See also: p9301 (SI motion enable safety functions (Motor Module)), p9501 (SI motion enable safety functions (Control Unit)), p9503 (SI motion SCA (SN) enable (Control Unit)), p9601 (SI enable, functions integrated in the drive (Control Unit)), p9801 (SI enable, functions integrated in the drive (Motor Module))

F30683 SI Motion MM: SOS/SLS enable missing

Drive object: SERVO, VECTOR

Reaction: OFF2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The safety-relevant basic function "SOS/SLS" is not enabled in p9301 although other safety-relevant monitoring functions are enabled.
Note:
This fault results in a STOP A that cannot be acknowledged.

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Remedy: Enable the function "SOS/SLS" (p9301.0).
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SOS: Safe Operating Stop / SBH: Safe operating stop
See also: p9301 (SI motion enable safety functions (Motor Module))

F30685 SI Motion MM: Safely-Limited Speed limit value too high

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The limit value for the function "Safely-Limited Speed" (SLS) is greater than the speed that corresponds to an encoder limit frequency of 500 kHz.
Fault value (r0949, interpret decimal):
Maximum permissible speed.
Remedy: Correct the limit values for SLS and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also: p9331 (SI motion SLS limit values (Motor Module))

F30688 SI Motion MM: Actual value synchronization not permissible

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: It is not permissible to simultaneously enable the actual value synchronization and a monitoring function with absolute reference (SCA/SLP).
Remedy: Either de-select the function "actual value synchronization" or the monitoring functions with absolute reference (SCA/SLP) and carry out a POWER ON.
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
See also: p9501 (SI motion enable safety functions (Control Unit))

C30700 SI Motion MM: STOP A initiated

Drive object: SERVO, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The drive is stopped via a STOP A (pulses are canceled via the safety shutdown path of the Control Unit).
Possible causes:
- stop request from the Control Unit.
- pulses not canceled after a parameterized time (p9357) after test stop selection.
- subsequent response to the message C30706 "SI Motion: Safe brake ramp exceeded".
- subsequent response to the message C30714 "SI Motion: Safely limited speed exceeded".
- subsequent response to the message C30701 "SI Motion: STOP B initiated".

Remedy:
- remove the cause to the fault on the Control Unit.
- check the value in p9357, if required, increase the value.
- check the shutdown path of Control Unit (check DRIVE-CLiQ communications).
- 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 Motor Module.
- replace Control Unit.

This message can only be acknowledged in the acceptance test mode without POWER ON via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SI: Safety Integrated

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C30701 SI Motion MM: STOP B initiated

Drive object: SERVO, VECTOR

Reaction: OFF3

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP B (braking along the OFF3 ramp).
As a result of this fault, after the time, parameterized in p9356 has expired, or the speed threshold, parameterized in p9360 has been fallen below, message C30700 "SI Motion MM: STOP A initiated" is output.
Possible causes:
- stop request from the Control Unit.
- subsequent response to the message C30714 "SI Motion MM: Safely limited speed exceeded".
- subsequent response to the message C30711 "SI Motion MM: Defect in a monitoring channel".

Remedy: - remove the fault cause in the control and carry out a POWER ON.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01711.
This message can only be acknowledged in the acceptance test mode without POWER ON via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SI: Safety Integrated

C30706 SI Motion MM: Safe Acceleration Monitor limit exceeded

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: After initiating STOP B or STOP C, the velocity has exceeded the selected tolerance.
The drive is shut down by the message C30700 "SI Motion MM: STOP A initiated".

Remedy: Check the braking behavior, if required, adapt the tolerance for "Safe Acceleration Monitor".
This message can only be acknowledged in the acceptance test mode without POWER ON via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SBR: Safe Acceleration Monitor
SI: Safety Integrated
See also: p9548 (SI motion SBR actual velocity tolerance (Control Unit))

C30707 SI Motion MM: Tolerance for safe operating stop exceeded

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The actual position has distanced itself further from the target position than the standstill tolerance.
The drive is shut down by the message C30701 "SI Motion MM: STOP B initiated".

Remedy: - check whether safety faults are present and if required carry out the appropriate diagnostic routines for the particular faults.
- check whether the standstill tolerance matches the accuracy and control dynamic performance of the axis.
- carry out a POWER ON.
This message can only be acknowledged in the acceptance test mode without POWER ON via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop
See also: p9530 (SI motion standstill tolerance (Control Unit))

C30708 SI Motion MM: STOP C initiated

Drive object: SERVO, VECTOR

Reaction: STOP2

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP C (braking along the OFF3 ramp).
"Safe Operating Stop" (SOS) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C30714 "SI Motion MM: Safely limited speed exceeded".

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See also: p9552 (SI motion transition time STOP C to SOS (SBH) (Control Unit))

Remedy: - remove the cause of the fault at the control.
- carry out a diagnostics routine for message C30714.
This message can only be acknowledged via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

C30709 SI Motion MM: STOP D initiated

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The drive is stopped via a STOP D (braking along the path).
"Safe Operating Stop" (SOS) is activated after the parameterized timer stage has expired.
Possible causes:
- stop request from the Control Unit.
- subsequent response to the message C30714 "SI Motion: Safely limited speed exceeded".
See also: p9353 (SI Motion transition time STOP D to SOS (Motor Module)), p9553 (SI motion transition time STOP D to SOS (SBH) (Control Unit))

Remedy: - remove the cause of the fault at the control.
- carry out a diagnostics routine for message C30714.
This message can only be acknowledged via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

C30711 SI MM MM: Defect in a monitoring channel

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: When cross-checking and 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 after the parameterized timer stage has expired, the message C30701 "SI Motion: STOP B initiated" is output. The alarm is output with message value 1031 when the Sensor Module hardware is replaced.
Message value (r9749, interpret decimal):
0 ... 999: Number of the cross-checked data that resulted in this fault.
0: Stop request from the other monitoring channel.
1: Status image of monitoring functions SOS, SLS or SLP (result list 1) (r9710[0], r9710[1]).
2: Status image of monitoring function SCA or n < nx (result list 2) (r9711[0], r9711[1]).
3: Position actual value.
4: Error when synchronizing the crosswise data comparison between the two channels.
5: Function enable signals (p9501, p9301).
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]).
10: Standstill tol. (p9530, p9330).
31: Pos. tol. (p9542, p9342).
33: Time, velocity changeover (p9551, p9351).
35: Delay time, pulse canc. (p9556, p9356).
36: Checking time, pulse canc. (p9557, p9357).
37: Trans. time, STOP C to SOS (p9552, p9352).
38: Trans. time STOP D to SOS (p9553, p9353).
40: Stop response for SLS.
42: Shutdown speed, pulse canc. (p9560, p9360).
43: Memory test, stop response (STOP A).
44: Position actual value + limit value SLS1 / safety monitoring clock cycle.
45: Pos. act. val. - limit value SLS1 / safety monitoring clock cycle.
46: Pos. act. val. + limit value SLS2 / safety monitoring clock cycle.

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47: Pos. act. val. - limit value SLS2 / safety monitoring clock cycle.
48: Pos. act. val. + limit value SLS3 / safety monitoring clock cycle.
49: Pos. act. val. - limit value SLS3 / safety monitoring clock cycle.
50: Pos. act. val. + limit value SLS4 / safety monitoring clock cycle.
51: Pos. act. val. - limit value SLS4 / safety monitoring clock cycle.
52: Standstill position + tolerance.
53: Standstill position - tolerance
54: Pos. act. val. + limit value nx / safety monit. clock cycle + tolerance.
55: Pos. act. val. + limit value nx / safety monit. clock cycle.
56: Pos. act. val. - limit value nx / safety monit. clock cycle.
57: Pos. act. val. - limit value nx / safety monit. clock cycle - tolerance.
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 SBR (p9548, p9348).
82: SGEs for SLS correction factor.
83: Acceptance test timer (p9558, p9358).
84: Trans. time STOP F (p9555, p9355).
85: Trans. time bus failure (p9580, p9380).
86: Ident. 1-encoder system.
87: Encoder assignment, 2nd channel (p9526, p9326).
89: Encoder limit freq.
1000: Watchdog timer has expired. Too many signal changes have occurred at safety-relevant inputs.
1001: Initialization error of watchdog timer.
1005: Pulses already canceled for test stop selection.
1011: Acceptance test status between the monitoring channels differ.
1012: Plausibility violation of the actual value from the encoder.
1020: Cyc. communication failure between the monit. cycles.
1021: Cyc. communication failure between the monit. channel and Sensor Module.
1030: Encoder fault detected from another monitoring channel.
1031: Data transfer error between the monitoring channel and the Sensor Module.
5000 ... 5140: PROFIsafe message values.
Message values 5000, 5014, 5023, 5024, 5030 ... 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140:
- an int. SW error has occurred. Only for int. Siemens troubleshooting.
5012: Error when initializing the PROFIsafe driver.
5013: The result of the initialization is different for the two controllers.
5022: Error when evaluating the F parameters. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.
5025: The result of the F parameterization is different for the two controllers.
5026: CRC error for the F parameters. The transferred CRC value of the F parameters does not match the value calculated in the PST.
5065: A communications error was identified when receiving the PROFIsafe telegram.
5066: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.
See also: p9555 (SI motion transition time STOP F to STOP B (Control Unit)), r9725 (SI motion, diagnostics STOP F)

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Remedy: Re message value = 1030:
- check the encoder connection.
- if required, replace the encoder.

Re message value = 1031:
When replacing a Sensor Module, carry out the following steps:
- start the copy function for the node identifier on the drive (p9700 = 1D hex).
- acknowledge the hardware CRC on the drive (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.

The following always applies:
- check the encoder connection.
- if required, replace the encoder.

Re other message values:
- the significance of the message values is described in safety message C01711 of the Control Unit.

Note:
This message can only be acknowledged via the Terminal Module 54F (TM54F) or PROFIsafe.
See also: p9300 (SI motion monitoring clock cycle (Motor Module)), p9500 (SI motion monitoring clock cycle (Control Unit))

C30714 SI Motion MM: Safely-Limited Speed exceeded

Drive object: SERVO, VECTOR

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 (r9749, interpret decimal):
100: SLS1 exceeded.
200: SLS2 exceeded.
300: SLS3 exceeded.
400: SLS4 exceeded.
1000: Encoder limit frequency exceeded.

Remedy: - check the traversing/motion program in the control.
- check the limits for "Safely-Limited Speed" (SLS) and if required, adapt (p9331).

This message can only be acknowledged via the Terminal Module 54F (TM54F) or PROFIsafe.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also: p9331 (SI motion SLS limit values (Motor Module)), p9363 (SI motion SLS stop response (Motor Module))

C30798 SI Motion MM: Test stop running

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The test stop is active.

Remedy: None necessary.
The message is withdrawn when the test stop is ended.
Note:
SI: Safety Integrated

C30799 SI Motion MM: Acceptance test mode active

Drive object: SERVO, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The acceptance test mode is active. The POWER ON signals of the safety-relevant motion monitoring functions can be acknowledged during the acceptance test using the acknowledgement functions of the higher-level control.

Remedy: None necessary.
The message is withdrawn when exiting the acceptance test mode.
Note:
SI: Safety Integrated

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N30800 (F) Power unit: Group signal

Drive object: All objects
Reaction: OFF2
Acknowledge: NONE
Cause: The power unit has detected at least one fault.
Remedy: Evaluates other actual messages.
Reaction upon F: OFF2
Acknowl. upon F: IMMEDIATELY

F30801 Power unit DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
The computation time load might be too high.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: - check the electrical cabinet design and cable routing for EMC compliance
- remove DRIVE-CLiQ components that are not required.
- de-select functions that are not required.
- if required, increase the sampling times (p0112, p0115).
- replace the component involved.

F30802 Power unit: Time slice overflow

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Time slide overflow.
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

A30804 (F) Power unit: CRC

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: CRC error actuator
Remedy: - carry out a POWER ON (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.
Reaction upon F: A_INFEED: OFF2 (OFF1)
SERVO: OFF2 (OFF1, OFF3)
VECTOR: OFF2 (OFF1, OFF3)
Acknowl. upon F: IMMEDIATELY

F30805 Power unit: EPROM checksum error

Drive object: All objects
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.

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F30809 Power unit: Switching information not valid

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: For 3P gating unit:
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 (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

A30810 (F) Power unit: Watchdog timer

Drive object: All objects
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 (power off/on) for all components.
- upgrade the firmware release.
- contact the Hotline.

Reaction upon F: NONE (OFF2)
Acknowl. upon F: IMMEDIATELY

F30820 Power unit DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry out a POWER 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)

F30835 Power unit DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

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F30836 Power unit DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry out a POWER ON.

F30837 Power unit DRIVE-CLiQ: Component fault

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
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.

F30845 Power unit DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F30850 Power unit: Internal software error

Drive object: All objects
Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowledge: POWER ON
Cause: An internal software error in the power unit has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - replace power unit.
- if required, upgrade the firmware in the power unit.
- contact the Hotline.

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F30851 CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (NONE, OFF1, OFF3)
VECTOR: OFF2 (NONE, OFF1, OFF3)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F30860 CU DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the power unit in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

F30885 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

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)

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F30886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

F30887 CU DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component (power unit) involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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.

F30895 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the power unit involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F30896 CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component (power unit), 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.

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F30897 DRIVE-CLiQ: No communication to component

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component (power unit) specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, interpret decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry out a POWER ON.

F30899 (N, A) Power unit: Unknown fault

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the power unit that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the power unit is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
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 power unit by an older firmware version (r0128).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A30903 Power unit: I2C bus error occurred

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: Communications with EPROM not possible.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: Replace the module.

F30907 Power unit: FPGA configuration unsuccessful

Drive object: A_INF, B_INF, CU_CX32, CU_LINK, CU_S, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: For the initialization within the power unit, an internal software error has occurred.

Remedy: - replace power unit.
- if required, upgrade the firmware in the power unit.
- contact the Hotline.

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A30920 (F) Power unit: Temperature sensor fault

Drive object: All objects
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 > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Remedy: - check that the sensor is connected correctly.
- replace sensor.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY

A30999 (F, N) Power unit: Unknown alarm

Drive object: All objects
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 the power unit is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
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).
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F31100 (N, A) Encoder 1: Zero mark distance error

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, 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).
- replace the encoder or encoder cable.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F31101 (N, A) Encoder 1: Zero marked failed

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, 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).
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31110 (N, A) Encoder 1: Serial communications error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, 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 acknowledgement 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: Re fault value:
Bit 0 = 1: Encoder defective. F31111 may provide additional details.
Bit 1 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 2 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 3 = 1: EMC / connect the cable shield, replace the encoder or encoder cable.
Bit 4 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 5 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 6 = 1: Update the Sensor Module firmware.
Bit 8 = 1: Check the parameterization (p0429.2).
Bit 9 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 10 = 1: Check the parameterization (p0429.2, p0449).
Bit 11 = 1: Check the parameterization (p0436).
Bit 12 = 1: Check the parameterization (p0429.6).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F31111 (N, A) Encoder 1: Absolute encoder EnDat, internal fault/error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The EnDat encoder fault word supplies fault bits that have been set.
Fault value (r0949, interpret binary):
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.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Re fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re 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.
Re 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.
Re fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31112 (N, A) Encoder 1: The error bit is set in the serial protocol

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module SMCxx.
Fault value (r0949, interpret binary):

Remedy: Re fault value:

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F31115 (N, A) Encoder 1: Amplitude error track A or B (A^2 + B^2)

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (A^2 + B^2) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is < 230 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
Fault value (r0949, interpret decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
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 the Sensor Module (e.g. contacts).
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
- for measuring systems with their own bearing system: Ensure that the encoder housing is not subject to any axial force.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31116 (N, A) Encoder 1: Amplitude error monitoring track A + B

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: The amplitude of the rectified encoder signals A and B is not within the tolerance bandwidth (hardware monitoring).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the hardware response thresholds are at < 176 mV and > 1.35 V.
Fault value (r0949, interpret decimal):
Low word: Signal level, track A (16 bits with sign).
High word: Signal level, track B (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
These analog values are not measured at the same time with the hardware fault output.
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 the Sensor Module (e.g. contacts).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F31117 (N, A) Encoder 1: Inversion error signals A and B and R

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: For a square-wave signal encoder (TTL. bipolar. double ended) the A* and B* and R* signals are not inverted with respect to signals A and B and R.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Check the setting of p0405: p0405.2 = 1 is only possible if the encoder is connected at X520.
Check the encoder/cable: Does the encoder supply TTL signals and the associated inverted signals?

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31118 (N, A) Encoder 1: Speed difference outside the tolerance range

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.
Encoder 1 is used as motor encoder and can be effective has fault response to change over to sensorless operation.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also: p0491 (Motor encoder fault response ENCODER)

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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31120 (N, A) Encoder 1: Power supply voltage

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: Encoder power supply voltage fault.
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.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line (threshold 4.75 V).
Bit 1: Encoder power supply voltage overcurrent condition (threshold 450 mA).
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.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31121 (N, A) Encoder 1: Coarse position error

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: ENCODER (NONE)
VECTOR: 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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: PULSE INHIBIT
Cause: The amplitude (track A or B) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is > 760 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
Fault value (r0949, interpret decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - check that the encoder cables are routed in compliance with EMC.
- replace the encoder or encoder cable.
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F31129 (N, A) Encoder 1: Position difference, hall sensor/track C/D and A/B too large

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31130 (N, A) Encoder 1: Zero mark and position error from the coarse synchronization

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, 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 as to 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.
Normalization: 32768 dec = 180 °
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check p0431 and if required, correct.
- 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F31131 (N, A) Encoder 1: Deviation, position incremental/absolute too large

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, 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.
Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.
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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31150 (N, A) Encoder 1: Initialization error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
The fault value is a bit field. Every set bit indicates functionality that is faulted.
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 value) and for SMCxx, the encoder cable.
- if relevant, note additional fault/error messages that describe the fault in detail.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A31400 (F, N) Encoder 1: Alarm threshold zero mark distance error

Drive object: All objects

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.

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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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A31401 (F, N) Encoder 1: Alarm threshold zero marked failed

Drive object: All objects

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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

F31405 (N, A) Encoder 1: Encoder evaluation temperature too high

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an excessively high temperature.
The fault threshold is 125 ° C.
Alarm value (r2124, interpret decimal):
Measured board/module temperature in 0.1 °C.

Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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A31410 (F, N) Encoder 1: Serial communications

Drive object: All objects

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 acknowledgement 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 the encoder.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A31411 (F, N) Encoder 1: EnDat encoder signals alarms

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The error word of the EnDat encoder has alarm bits that have been set.
Alarm value (r2124, interpret binary):
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.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Replace encoder.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A31414 (F, N) Encoder 1: Amplitude error track C or D (C^2 + D^2)

Drive object: All objects

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.
The nominal signal must be in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response thresholds are < 230 mV and > 750 mV (frequency characteristic).
This fault also occurs if the A/D converter is overcontrolled.
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

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Alarm value (r2124, interpret decimal):
Low word: Signal level, track C (16 bits with sign).
High word: Signal level, track D (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
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 the Sensor Module (e.g. contacts).
- check the Hall sensor box

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

N31415 (F, A) Encoder 1: Amplitude alarm track A or B (A^2 + B^2)

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (A^2 + B^2) of track A or B is not within the tolerance bandwidth.
SMC20:
The nominal signal level is at 500 mV (500 mV -25 % / +20 %). The response threshold is < 300 mV.
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
Alarm value (r2124, interpret decimal):
Low word:
Amplitude square root(A*A + B*B).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
High word:
Angle 0 to 65535 corresponds to 0 to 360 degrees of the fine position. Zero degrees is at the negative zero crossover of track B.
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 are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- dirty code disk
- aged lighting system.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon A: NONE

Acknowl. upon A: NONE

A31418 (F, N) Encoder 1: Speed difference per sampling rate exceeded

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.

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Remedy: - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A31419 (F, N) Encoder 1: Track A or B outside the tolerance range

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude, phase or 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):
xxx1: Minimum of the offset correction, track B
xxx2: Maximum of the offset correction, track B
xx1x: Minimum of the offset correction, track A
xx2x: Maximum of the offset correction, track A
x1xx: Minimum of the amplitude correction, track B/A
x2xx: Maximum of the amplitude correction, track B/A
1xxx: Minimum of the phase error correction
2xxx: Maximum of the phase error 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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A31421 (F, N) Encoder 1: Coarse position error

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: For this encoder, this coarse position is incorrect.
Fault value (r0949, 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 otherwise the position can be incorrect by one encoder pulse.

Remedy: Re fault value = 3:
For Sensor Module Cabinet (SMC) and Sensor Module External (SME), the following applies:
- use an encoder cable from Siemens.
- for encoder cables that you have fabricated yourself, interchange track A with A* and B with B*.
For Sensor Module Integrated (SMI), the following applies:
- replace the component.

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Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A31429 (F, N) Encoder 1: Position difference, hall sensor/track C/D and A/B too large

Drive object: All objects
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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A31431 (F, N) Encoder 1: Deviation, position incremental/absolute too large

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: When the zero pulse is passed, a deviation in the incremental position was detected.
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.
- coding disk dirty or strong magnetic fields.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

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A31432 (F, N) Encoder 1: Rotor position adaptation corrects deviation

Drive object: All objects
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 the 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.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F31500 (N, A) Encoder 1: Position tracking traversing range exceeded

Drive object: SERVO, VECTOR
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.
For the configured linear axis, the maximum traversing range is defined to be 64x (+/- 32x) of p0421. The value should be read in p0412 and interpreted as the number of motor revolutions.
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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31501 (N, A) Encoder 1: Position tracking encoder position outside tolerance window

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: When powered-down, the drive/encoder was moved through a distance greater than what 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, 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 gearbox, position tracking tolerance window), r0477 (Measuring gearbox, 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 (Infeed commissioning parameter filter), p2507 (LR absolute encoder adjustment status)

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31502 (N, A) Encoder 1: Encoder with measuring gearbox, without valid signals

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The encoder with measuring gearbox no longer provides any valid signals.
Remedy: It must be ensured that all of the encoders, with mounted measuring gearbox, provide valid actual values in operation.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31503 (N, A) Encoder 1: Position tracking cannot be reset

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The position tracking for the measuring gearbox 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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

N31800 (F) Encoder 1: Group signal

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: NONE
Cause: The motor encoder has detected at least one fault.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Evaluates other actual messages.
Reaction upon F: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowl. upon F: IMMEDIATELY

F31801 (N, A) Encoder 1 DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
See also: p0491 (Motor encoder fault response ENCODER)

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Remedy: - check the electrical cabinet design and cable routing for EMC compliance
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31802 (N, A) Encoder 1: Time slice overflow

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: Time slice overflow, encoder 1.
Fault value (r0949, interpret decimal):
9: Time slice overflow of the fast (current controller clock cycle) time slice.
10: Time slice overflow of the average time slice.
12: Time slice overflow of the slow time slice.
999: Timeout when waiting for SYNO, e.g. unexpected return to non-cyclic operation.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Reduce the current controller frequency.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31804 (N, A) Encoder 1: Checksum error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: A checksum error has occurred when reading-out the program memory on the Sensor Module.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Memory area involved.
xxxx: Difference between the checksum at POWER ON and the actual checksum.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Sensor Module.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31805 (N, A) Encoder 1: EPROM checksum error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, 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)

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Remedy: Replace the module.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31806 (N, A) Encoder 1: Initialization error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: PULSE INHIBIT
Cause: The encoder was not successfully initialized.
Fault value (r0949, interpret hexadecimal):
1, 2, 3: Encoder initialization with the motor rotating.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Acknowledge the fault.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A31811 (F, N) Encoder 1: Encoder serial number changed

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The serial number of the motor encoder of a synchronous motor has changed. The change was only checked for encoders with serial number (e.g. EnDat encoders) and build-in motors (e.g. p0300 = 401) or third-party motors (p0300 = 2).
Cause 1:
The encoder was replaced.
Cause 2:
A third-party, build-in or linear motor was re-commissioned.
Cause 3:
The motor with integrated and adjusted encoder was replaced.
Cause 4:
The firmware was updated to a version that checks the encoder serial number.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Re causes 1, 2:
Carry out an automatic adjustment using the pole position identification routine. First, accept the serial number with p0440 = 1. Acknowledge the fault. Initiate the pole position identification routine with p1990 = 1. Then check that the pole position identification routine is correctly executed.
SERVO:
If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated.
or
Set the adjustment via p0431. In this case, the new serial number is automatically accepted.
or
Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.
Re causes 3, 4:
Accept the new serial number with p0440 = 1.

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Reaction upon F: A_INFEED: OFF2 (NONE)
SERVO: NONE (ENCODER, OFF2)
VECTOR: NONE (ENCODER, OFF2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F31812 (N, A) Encoder 1: Requested cycle or RX-/TX timing not supported

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A cycle requested from the Control Unit or RX/TX timing is not supported.
Alarm value (r2124, interpret decimal):
0: Application cycle is not supported.
1: DQ cycle is not supported.
2: Clearance between RX and TX instants in time too low.
3: TX instant in time too early.
Remedy:
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31820 (N, A) Encoder 1 DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: A_INFEED: OFF2
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - carry out a POWER 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)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F31835 (N, A) Encoder 1 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31836 (N, A) Encoder 1 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: Carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31837 (N, A) Encoder 1 DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
See also: p0491 (Motor encoder fault response ENCODER)

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.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31845 (N, A) Encoder 1 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: A_INFEED: OFF2
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31850 (N, A) Encoder 1: Sensor Module, internal software error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: POWER ON
Cause: Internal software error 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.
See also: p0491 (Motor encoder fault response ENCODER)
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F31851 (N, A) CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Sensor Module (encoder 1) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: Upgrade the firmware of the component involved.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F31860 (N, A) CU DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 1).
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the encoder in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the encoder in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31885 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 1). The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

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)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F31886 (N, A) CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 1). Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: - carry out a POWER ON.
- check whether the firmware version of the encoder (r0148) matches the firmware version of Control Unit (r0018).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31887 (N, A) CU DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 1). Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31895 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 1).
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F31896 (N, A) CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component (Sensor Module for encoder 1), 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31897 (N, A) DRIVE-CLiQ: No communication to component

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component (Sensor Module for encoder 1) specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, interpret decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F31899 (N, A) Encoder 1: Unknown fault

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, 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 the Sensor Module for encoder 1 is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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A31902 (F, N) Encoder 1: SPI-BUS error occurred

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error when operating the internal SPI bus.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A31903 (F, N) Encoder 1: I2C-BUS error occurred

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error when operating the internal I2C bus.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F31905 (N, A) Encoder 1: Parameterization error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: ENCODER (IASC / DCBRAKE, NONE, OFF1, OFF2, OFF3, STOP1, 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):
High word - low word = information - parameter number
Info = 0:
No information available.
Info = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
Info = 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.
Info = 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.

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Info = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.
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 gearbox ratio. The quotient of the "pole pair number" divided by the "measuring gearbox ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A31920 (F, N) Encoder 1: Temperature sensor fault

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
Low word low byte: Cause:
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Additional values:
Only for internal Siemens troubleshooting.
Low word high byte: Channel number.
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).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A31999 (F, N) Encoder 1: Unknown alarm

Drive object: All objects

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 the Sensor Module for encoder 1 is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
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).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

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F32100 (N, A) Encoder 2: Zero mark clearance error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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).
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32101 (N, A) Encoder 2: Zero marked failed

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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).
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32110 (N, A) Encoder 2: Serial communications error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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 acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.

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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: Re fault value:
Bit 0 = 1: Encoder defective. F31111 may provide additional details.
Bit 1 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 2 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 3 = 1: EMC / connect the cable shield, replace the encoder or encoder cable.
Bit 4 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 5 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 6 = 1: Update the Sensor Module firmware.
Bit 8 = 1: Check the parameterization (p0429.2).
Bit 9 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 10 = 1: Check the parameterization (p0429.2, p0449).
Bit 11 = 1: Check the parameterization (p0436).
Bit 12 = 1: Check the parameterization (p0429.6).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32111 (N, A) Encoder 2: Absolute encoder EnDat, internal fault/error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The EnDat encoder fault word supplies fault bits that have been set.
Fault value (r0949, interpret binary):
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.

Remedy: Re fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re 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.
Re 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.
Re fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.

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Re fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32112 (N, A) Encoder 2: The error bit is set in the serial protocol

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Serial communication protocol transfer error between the encoder and evaluation module SMCxx.
Fault value (r0949, interpret decimal):

Remedy: Re fault value:

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32115 (N, A) Encoder 2: Amplitude error track A or B (A^2 + B^2)

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (A^2 + B^2) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is < 230 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
Fault value (r0949, interpret decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.

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).
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
- for measuring systems with their own bearing system: Ensure that the encoder housing is not subject to any axial force.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F32116 (N, A) Encoder 2: Amplitude error monitoring track A + B

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The amplitude of the rectified encoder signals A and B is not within the tolerance bandwidth (hardware monitoring).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the hardware response thresholds are at < 176 mV and > 1.35 V.
Fault value (r0949, interpret decimal):
Low word: Signal level, track A (16 bits with sign).
High word: Signal level, track B (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
These analog values are not measured at the same time with the hardware fault output.

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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32117 (N, A) Encoder 2: Inversion error signals A and B and R

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: For a square-wave signal encoder (TTL. bipolar. double ended) the A* and B* and R* signals are not inverted with respect to signals A and B and R.

Remedy: Check the setting of p0405: p0405.2 = 1 is only possible if the encoder is connected at X520.
Check the encoder/cable: Does the encoder supply TTL signals and the associated inverted signals?

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32118 (N, A) Encoder 2: Speed difference outside the tolerance range

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F32120 (N, A) Encoder 2: Power supply voltage

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Encoder power supply voltage fault.
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.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line (threshold 4.75 V).
Bit 1: Encoder power supply voltage overcurrent condition (threshold 450 mA).

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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32121 (N, A) Encoder 2: Coarse position error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (track A or B) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is > 760 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
Fault value (r0949, interpret decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.

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SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- replace the encoder or encoder cable.
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32129 (N, A) Encoder 2: Position difference, hall sensor/track C/D and A/B too large

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32130 (N, A) Encoder 2: Zero mark and position error from the coarse synchronization

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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 as to 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.
Normalization: 32768 dec = 180 °

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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.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32131 (N, A) Encoder 2: Deviation, position incremental/absolute too large

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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.
Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.
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.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32150 (N, A) Encoder 2: Initialization error

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
Acknowledge: PULSE INHIBIT
Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
The fault value is a bit field. Every set bit indicates functionality that is faulted.
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 value) and for SMCxx, the encoder cable.
- if relevant, note additional fault/error messages that describe the fault in detail.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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A32400 (F, N) Encoder 2: Alarm threshold zero mark distance error

Drive object: All objects
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.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A32401 (F, N) Encoder 2: Alarm threshold zero marked failed

Drive object: All objects
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.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F32405 (N, A) Encoder 2: Encoder evaluation temperature too high

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an excessively high temperature.
The fault threshold is 125 ° C.
Alarm value (r2124, interpret decimal):
Measured board/module temperature in 0.1 °C.
Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A32410 (F, N) Encoder 2: Serial communications

Drive object: All objects
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 acknowledgement 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 the encoder.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A32411 (F, N) Encoder 2: EnDat encoder signals alarms

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The error word of the EnDat encoder has alarm bits that have been set.
Alarm value (r2124, interpret binary):
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.
Remedy: Replace encoder.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

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A32414 (F, N) Encoder 2: Amplitude error track C or D (C^2 + D^2)

Drive object: All objects

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.
The nominal signal must be in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response thresholds are < 230 mV and > 750 mV (frequency characteristic).
This fault also occurs if the A/D converter is overcontrolled.
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.
Alarm value (r2124, interpret decimal):
Low word: Signal level, track C (16 bits with sign).
High word: Signal level, track D (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.

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

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

N32415 (F, A) Encoder 2: Amplitude alarm track A or B (A^2 + B^2)

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (A^2 + B^2) of track A or B is not within the tolerance bandwidth.
SMC20:
The nominal signal level is at 500 mV (500 mV -25 % / +20 %). The response threshold is < 300 mV.
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
Alarm value (r2124, interpret decimal):
Low word:
Amplitude square root(A*A + B*B).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
High word:
Angle 0 to 65535 corresponds to 0 to 360 degrees of the fine position. Zero degrees is at the negative zero crossover of track B.

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 are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- dirty code disk
- aged lighting system.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon A: NONE

Acknowl. upon A: NONE

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A32418 (F, N) Encoder 2: Speed difference per sampling rate exceeded

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
Remedy: - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A32419 (F, N) Encoder 2: Track A or B outside the tolerance range

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The amplitude, phase or 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):
xxx1: Minimum of the offset correction, track B
xxx2: Maximum of the offset correction, track B
xx1x: Minimum of the offset correction, track A
xx2x: Maximum of the offset correction, track A
x1xx: Minimum of the amplitude correction, track B/A
x2xx: Maximum of the amplitude correction, track B/A
1xxx: Minimum of the phase error correction
2xxx: Maximum of the phase error 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.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A32421 (F, N) Encoder 2: Coarse position error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: For this encoder, this coarse position is incorrect.
Fault value (r0949, 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 otherwise the position can be incorrect by one encoder pulse.

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Remedy: Re fault value = 3:
For Sensor Module Cabinet (SMC) and Sensor Module External (SME), the following applies:
- use an encoder cable from Siemens.
- for encoder cables that you have fabricated yourself, interchange track A with A* and B with B*.
For Sensor Module Integrated (SMI), the following applies:
- replace the component.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A32429 (F, N) Encoder 2: Position difference, hall sensor/track C/D and A/B too large

Drive object: All objects

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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A32431 (F, N) Encoder 2: Deviation, position incremental/absolute too large

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: When the zero pulse is passed, a deviation in the incremental position was detected.
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.
- coding disk dirty or strong magnetic fields.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

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A32432 (F, N) Encoder 2: Rotor position adaptation corrects deviation

Drive object: All objects
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 the 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.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F32500 (N, A) Encoder 2: Position tracking traversing range exceeded

Drive object: SERVO, VECTOR
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.
For the configured linear axis, the maximum traversing range is defined to be 64x (+/- 32x) of p0421. The value should be read in p0412 and interpreted as the number of motor revolutions.
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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32501 (N, A) Encoder 2: Position tracking encoder position outside tolerance window

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: When powered-down, the drive/encoder was moved through a distance greater than what 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, 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 gearbox, position tracking tolerance window), r0477 (Measuring gearbox, 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 (Infeed commissioning parameter filter), p2507 (LR absolute encoder adjustment status)

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32502 (N, A) Encoder 2: Encoder with measuring gearbox, without valid signals

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The encoder with measuring gearbox no longer provides any valid signals.
Remedy: It must be ensured that all of the encoders, with mounted measuring gearbox, provide valid actual values in operation.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32503 (N, A) Encoder 2: Position tracking cannot be reset

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The position tracking for the measuring gearbox 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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

N32800 (F) Encoder 2: Group signal

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: NONE
Cause: The motor encoder has detected at least one fault.
Remedy: Evaluates other actual messages.
Reaction upon F: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY

F32801 (N, A) Encoder 2 DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

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Remedy: - check the electrical cabinet design and cable routing for EMC compliance
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32802 (N, A) Encoder 2: Time slice overflow

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Time slice overflow, encoder 2.
Fault value (r0949, interpret decimal):
9: Time slice overflow of the fast (current controller clock cycle) time slice.
10: Time slice overflow of the average time slice.
12: Time slice overflow of the slow time slice.
999: Timeout when waiting for SYNO, e.g. unexpected return to non-cyclic operation.
Remedy: Reduce the current controller frequency.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32804 (N, A) Encoder 2: Checksum error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A checksum error has occurred when reading-out the program memory on the Sensor Module.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Memory area involved.
xxxx: Difference between the checksum at POWER ON and the actual checksum.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Sensor Module.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32805 (N, A) Encoder 2: EPROM checksum error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32806 (N, A) Encoder 2: Initialization error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: The encoder was not successfully initialized.
Fault value (r0949, interpret hexadecimal):
1, 2, 3: Encoder initialization with the motor rotating.
Remedy: Acknowledge the fault.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32811 (N, A) Encoder 2: Encoder serial number changed

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The encoder serial number has changed. The change is only checked for encoders with serial number (e.g. EnDat encoders).
Cause:
The encoder was replaced.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).
Remedy: Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32812 (N, A) Encoder 2: Requested cycle or RX-/TX timing not supported

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A cycle requested from the Control Unit or RX/TX timing is not supported.
Alarm value (r2124, interpret decimal):
0: Application cycle is not supported.
1: DQ cycle is not supported.
2: Clearance between RX and TX instants in time too low.
3: TX instant in time too early.
Remedy:
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F32820 (N, A) Encoder 2 DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32835 (N, A) Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32836 (N, A) Encoder 2 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32837 (N, A) Encoder 2 DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

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.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32845 (N, A) Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32850 (N, A) Encoder 2: Sensor Module, internal software error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: Internal software error 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.

Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32851 (N, A) CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Sensor Module (encoder 2) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: Upgrade the firmware of the component involved.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32860 (N, A) CU DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 2).
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the encoder in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the encoder in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry out a POWER 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)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F32885 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 2). The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

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)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32886 (N, A) CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 2). Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F32887 (N, A) CU DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 2). Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32895 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 2).
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32896 (N, A) CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY
Cause: The properties of the DRIVE-CLiQ component (Sensor Module for encoder 2), 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F32897 (N, A) DRIVE-CLiQ: No communication to component

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: Communications with the DRIVE-CLiQ component (Sensor Module for encoder 2) specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, interpret decimal):
Component ID.
Remedy: - check the DRIVE-CLiQ connections.
- carry out a POWER ON.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F32899 (N, A) Encoder 2: Unknown fault

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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 the Sensor Module for encoder 2 is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A32902 (F, N) Encoder 2: SPI-BUS error occurred

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: Error when operating the internal SPI bus.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A32903 (F, N) Encoder 2: I2C-BUS error occurred

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: Error when operating the internal I2C bus.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

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F32905 (N, A) Encoder 2: Parameterization error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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):
High word - low word = information - parameter number
Info = 0:
No information available.
Info = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
Info = 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.
Info = 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.
Info = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.

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 gearbox ratio. The quotient of the "pole pair number" divided by the "measuring gearbox ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A32920 (F, N) Encoder 2: Temperature sensor fault

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
Low word low byte: Cause:
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Additional values:
Only for internal Siemens troubleshooting.
Low word high byte: Channel number.

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).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

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A32999 (F, N) Encoder 2: Unknown alarm

Drive object: All objects

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 the Sensor Module for encoder 2 is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
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).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

F33100 (N, A) Encoder 3: Zero mark clearance error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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).
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33101 (N, A) Encoder 3: Zero marked failed

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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).

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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.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33110 (N, A) Encoder 3: Serial communications error

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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 acknowledgement 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: Re fault value:
Bit 0 = 1: Encoder defective. F31111 may provide additional details.
Bit 1 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 2 = 1: Incorrect encoder type / replace the encoder or encoder cable.
Bit 3 = 1: EMC / connect the cable shield, replace the encoder or encoder cable.
Bit 4 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 5 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 6 = 1: Update the Sensor Module firmware.
Bit 8 = 1: Check the parameterization (p0429.2).
Bit 9 = 1: EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.
Bit 10 = 1: Check the parameterization (p0429.2, p0449).
Bit 11 = 1: Check the parameterization (p0436).
Bit 12 = 1: Check the parameterization (p0429.6).
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33111 (N, A) Encoder 3: Absolute encoder EnDat, internal fault/error

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: The EnDat encoder fault word supplies fault bits that have been set.
Fault value (r0949, interpret binary):
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.

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Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.

Remedy: Re fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re 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.
Re 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.
Re fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
Re fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33112 (N, A) Encoder 3: The error bit is set in the serial protocol

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: Serial communication protocol transfer error between the encoder and evaluation module SMCxx.
Fault value (r0949, interpret decimal):
Remedy: Re fault value:
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33115 (N, A) Encoder 3: Amplitude error track A or B (A^2 + B^2)

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: PULSE INHIBIT
Cause: The amplitude (A^2 + B^2) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is < 230 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
Fault value (r0949, interpret decimal):
Low word:
Signal level, track A (16 bits with sign).

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High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.

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).
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.
- for measuring systems with their own bearing system: Ensure that the encoder housing is not subject to any axial force.

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33116 (N, A) Encoder 3: Amplitude error monitoring track A + B

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The amplitude of the rectified encoder signals A and B is not within the tolerance bandwidth (hardware monitoring).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the hardware response thresholds are at < 176 mV and > 1.35 V.
Fault value (r0949, interpret decimal):
Low word: Signal level, track A (16 bits with sign).
High word: Signal level, track B (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.
These analog values are not measured at the same time with the hardware fault output.
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).

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33117 (N, A) Encoder 3: Inversion error signals A and B and R

Drive object: All objects
Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For a square-wave signal encoder (TTL. bipolar. double ended) the A* and B* and R* signals are not inverted with respect to signals A and B and R.
Remedy: Check the setting of p0405: p0405.2 = 1 is only possible if the encoder is connected at X520.
Check the encoder/cable: Does the encoder supply TTL signals and the associated inverted signals?

Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F33118 (N, A) Encoder 3: Speed difference outside the tolerance range

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33120 (N, A) Encoder 3: Power supply voltage

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: Encoder power supply voltage fault.
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.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line (threshold 4.75 V).
Bit 1: Encoder power supply voltage overcurrent condition (threshold 450 mA).

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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33121 (N, A) Encoder 3: Coarse position error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33125 (N, A) Encoder 1: Amplitude error track A or B overcontrolled

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: ENCODER (IASC / DCBRAKE, NONE)
VECTOR: ENCODER (IASC / DCBRAKE, NONE)

Acknowledge: PULSE INHIBIT

Cause: The amplitude (track A or B) does not lie within the tolerance bandwidth (software monitoring function).
SMC20:
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response threshold is > 760 mV (frequency characteristic).
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.
Fault value (r0949, interpret decimal):
Low word:
Signal level, track A (16 bits with sign).
High word:
Signal level, track B (16 bits with sign).
SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
See also: p0491 (Motor encoder fault response ENCODER)

Remedy: - check that the encoder cables are routed in compliance with EMC.
- replace the encoder or encoder cable.
- with measuring systems without their own bearing system: Adjust the scanning head and check the bearing system of the measuring wheel.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33129 (N, A) Encoder 3: Position difference, hall sensor/track C/D and A/B too large

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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 A33429.
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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33130 (N, A) Encoder 3: Zero mark and position error from the coarse synchronization

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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 as to 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.
Normalization: 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33131 (N, A) Encoder 3: Deviation, position incremental/absolute too large

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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.
Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
Incremental encoder: When the zero pulse is passed, a deviation in the incremental position was detected.

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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33150 (N, A) Encoder 3: Initialization error

Drive object: All objects

Reaction: A_INFEED: NONE
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: PULSE INHIBIT

Cause: Encoder functionality selected in p0404 is not operating correctly.
Fault value (r0949, interpret hexadecimal):
The fault value is a bit field. Every set bit indicates functionality that is faulted.
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 value) and for SMCxx, the encoder cable.
- if relevant, note additional fault/error messages that describe the fault in detail.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A33400 (F, N) Encoder 3: Alarm threshold zero mark distance error

Drive object: All objects

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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A33401 (F, N) Encoder 3: Alarm threshold zero marked failed

Drive object: All objects

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.

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Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F33405 (N, A) Encoder 3: Encoder evaluation temperature too high

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The encoder evaluation for a motor with DRIVE-CLiQ has detected an excessively high temperature.
The fault threshold is 125 ° C.
Alarm value (r2124, interpret decimal):
Measured board/module temperature in 0.1 °C.
Remedy: Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A33410 (F, N) Encoder 3: Serial communications

Drive object: All objects
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 acknowledgement 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 the encoder.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

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A33411 (F, N) Encoder 3: EnDat encoder signals alarms

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The error word of the EnDat encoder has alarm bits that have been set.
Alarm value (r2124, interpret binary):
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.

Remedy: Replace encoder.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A33414 (F, N) Encoder 3: Amplitude error track C or D (C^2 + D^2)

Drive object: All objects

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.
The nominal signal must be in the range 375 mV to 600 mV (500 mV -25 % / +20 %).
On the other hand, the response thresholds are < 230 mV and > 750 mV (frequency characteristic).
This fault also occurs if the A/D converter is overcontrolled.
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.
Alarm value (r2124, interpret decimal):
Low word: Signal level, track C (16 bits with sign).
High word: Signal level, track D (16 bits with sign).
A signal level of 500 mV corresponds to the numerical value 5333 hex = 21299 dec.

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

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

N33415 (F, A) Encoder 3: Amplitude alarm track A or B (A^2 + B^2)

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude (A^2 + B^2) of track A or B is not within the tolerance bandwidth.
SMC20:
The nominal signal level is at 500 mV (500 mV -25 % / +20 %). The response threshold is < 300 mV.
SMC10:
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
Alarm value (r2124, interpret decimal):
Low word:
Amplitude square root(A*A + B*B).

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SMC20:
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
SMC10:
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
High word:
Angle 0 to 65535 corresponds to 0 to 360 degrees of the fine position. Zero degrees is at the negative zero crossover of track B.

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 are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- dirty code disk
- aged lighting system.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon A: NONE

Acknowl. upon A: NONE

A33418 (F, N) Encoder 3: Speed difference per sampling rate exceeded

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A33419 (F, N) Encoder 3: Track A or B outside the tolerance range

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The amplitude, phase or 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):
xxx1: Minimum of the offset correction, track B
xxx2: Maximum of the offset correction, track B
xx1x: Minimum of the offset correction, track A
xx2x: Maximum of the offset correction, track A
x1xx: Minimum of the amplitude correction, track B/A
x2xx: Maximum of the amplitude correction, track B/A
1xxx: Minimum of the phase error correction
2xxx: Maximum of the phase error correction

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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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A33421 (F, N) Encoder 3: Coarse position error

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: For this encoder, this coarse position is incorrect.
Fault value (r0949, 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 otherwise the position can be incorrect by one encoder pulse.

Remedy: Re fault value = 3:
For Sensor Module Cabinet (SMC) and Sensor Module External (SME), the following applies:
- use an encoder cable from Siemens.
- for encoder cables that you have fabricated yourself, interchange track A with A* and B with B*.

For Sensor Module Integrated (SMI), the following applies:
- replace the component.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A33429 (F, N) Encoder 3: Position difference, hall sensor/track C/D and A/B too large

Drive object: All objects

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.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

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A33431 (F, N) Encoder 3: Deviation, position incremental/absolute too large

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: When the zero pulse is passed, a deviation in the incremental position was detected.
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.
- coding disk dirty or strong magnetic fields.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A33432 (F, N) Encoder 3: Rotor position adaptation corrects deviation

Drive object: All objects
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 the 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.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F33500 (N, A) Encoder 3: Position tracking traversing range exceeded

Drive object: SERVO, VECTOR
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.
For the configured linear axis, the maximum traversing range is defined to be 64x (+/- 32x) of p0421. The value should be read in p0412 and interpreted as the number of motor revolutions.
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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F33501 (N, A) Encoder 3: Position tracking encoder position outside tolerance window

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: When powered-down, the drive/encoder was moved through a distance greater than what 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, 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 gearbox, position tracking tolerance window), r0477 (Measuring gearbox, 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 (Infeed commissioning parameter filter), p2507 (LR absolute encoder adjustment status)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33502 (N, A) Encoder 3: Encoder with measuring gearbox, without valid signals

Drive object: SERVO, VECTOR
Reaction: OFF1 (OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The encoder with measuring gearbox no longer provides any valid signals.
Remedy: It must be ensured that all of the encoders, with mounted measuring gearbox, provide valid actual values in operation.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33503 (N, A) Encoder 3: Position tracking cannot be reset

Drive object: SERVO, VECTOR
Reaction: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: The position tracking for the measuring gearbox 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.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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N33800 (F) Encoder 3: Group signal

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: NONE

Cause: The motor encoder has detected at least one fault.

Remedy: Evaluates other actual messages.

Reaction upon F: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

F33801 (N, A) Encoder 3 DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: - check the electrical cabinet design and cable routing for EMC compliance
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33802 (N, A) Encoder 3: Time slice overflow

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Time slice overflow, encoder 3.
Fault value (r0949, interpret decimal):
9: Time slice overflow of the fast (current controller clock cycle) time slice.
10: Time slice overflow of the average time slice.
12: Time slice overflow of the slow time slice.
999: Timeout when waiting for SYNO, e.g. unexpected return to non-cyclic operation.

Remedy: Reduce the current controller frequency.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33804 (N, A) Encoder 3: Checksum error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A checksum error has occurred when reading-out the program memory on the Sensor Module.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Memory area involved.
xxxx: Difference between the checksum at POWER ON and the actual checksum.

Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Sensor Module.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33805 (N, A) Encoder 3: EPROM checksum error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, 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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33806 (N, A) Encoder 3: Initialization error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: PULSE INHIBIT

Cause: The encoder was not successfully initialized.
Fault value (r0949, interpret hexadecimal):
1, 2, 3: Encoder initialization with the motor rotating.

Remedy: Acknowledge the fault.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33811 (N, A) Encoder 3: Encoder serial number changed

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: The encoder serial number has changed. The change is only checked for encoders with serial number (e.g. EnDat encoders).
Cause:
The encoder was replaced.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).

Remedy: Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33812 (N, A) Encoder 3: Requested cycle or RX-/TX timing not supported

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A cycle requested from the Control Unit or RX/TX timing is not supported.
Alarm value (r2124, interpret decimal):
0: Application cycle is not supported.
1: DQ cycle is not supported.
2: Clearance between RX and TX instants in time too low.
3: TX instant in time too early.

Remedy:

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33820 (N, A) Encoder 3 DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33835 (N, A) Encoder 3 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33836 (N, A) Encoder 3 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: All objects
Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry out a POWER ON.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33837 (N, A) Encoder 3 DRIVE-CLiQ: Component fault

Drive object: All objects
Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
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.

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33845 (N, A) Encoder 3 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: A_INFEED: OFF2
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33850 (N, A) Encoder 3: Sensor Module, internal software error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: POWER ON
Cause: Internal software error in the Sensor Module of encoder 3.
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.
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F33851 (N, A) CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Sensor Module (encoder 3) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: Upgrade the firmware of the component involved.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

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F33860 (N, A) CU DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 3).
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the encoder in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the encoder in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33885 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 3). The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

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)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33886 (N, A) CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 3). Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33887 (N, A) CU DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 3). Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33895 (N, A) CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: DRIVE-CLiQ communications error between the Control Unit and the encoder involved (encoder 3).
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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F33896 (N, A) CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY

Cause: The properties of the DRIVE-CLiQ component (Sensor Module for encoder 3), 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33897 (N, A) DRIVE-CLiQ: No communication to component

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component (Sensor Module for encoder 3) specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, interpret decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry out a POWER ON.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

F33899 (N, A) Encoder 3: Unknown fault

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the Sensor Module for encoder 3 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Sensor Module for encoder 3 is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
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).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

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A33902 (F, N) Encoder 3: SPI-BUS error occurred

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error when operating the internal SPI bus.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A33903 (F, N) Encoder 3: I2C-BUS error occurred

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error when operating the internal I2C bus.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Remedy: - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (ENCODER, IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

F33905 (N, A) Encoder 3: Parameterization error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, STOP2)
VECTOR: OFF1 (IASC / DCBRAKE, NONE, OFF2, OFF3, STOP1, 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):
High word - low word = information - parameter number
Info = 0:
No information available.
Info = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
Info = 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.
Info = 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.

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Info = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.

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 gearbox ratio. The quotient of the "pole pair number" divided by the "measuring gearbox ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A33920 (F, N) Encoder 3: Temperature sensor fault

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
Low word low byte: Cause:
1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Additional values:
Only for internal Siemens troubleshooting.
Low word high byte: Channel number.

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).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

A33999 (F, N) Encoder 3: Unknown alarm

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: A alarm has occurred on the Sensor Module for encoder 3 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on the Sensor Module for encoder 3 is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
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).

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

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F34207 (N, A) VSM: Temperature fault threshold exceeded

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE
VECTOR: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The temperature (r3666) measured using the Voltage Sensing Module (VSM) has exceeded the threshold value (p3668).
This fault can only be initiated if the temperature evaluation was activated (p3665 = 2 for a KTY sensor or p3665 = 1 for a PTC sensor).
Fault value (r0949, interpret decimal):
The hundred thousands and ten thousands position specifies the component number of the VSM where the fault occurred.

Remedy: - check the fan.
- reduce the power.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A34211 (F, N) VSM: Temperature alarm threshold exceeded

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: The temperature (r3666) measured using the Voltage Sensing Module (VSM) has exceeded the threshold value (p3667).
Alarm value (r2124, interpret decimal):
The hundred thousands and ten thousands position specifies the component number of the VSM where the fault occurred.

Remedy: - check the fan.
- reduce the power.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE
VECTOR: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

N34800 (F) VSM: Group signal

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: NONE

Cause: The Voltage Sensing Module (VSM) has detected at least one fault.

Remedy: Evaluates other actual messages.

Reaction upon F: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

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F34801 VSM DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM).
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: - check the DRIVE-CLiQ connection.
- replace the Terminal Module.

F34802 VSM: Time slice overflow

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: Time slice overflow on the Voltage Sensing Module.

Remedy: Replace the Voltage Sensing Module.

F34803 VSM: Memory test

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: An error has occurred during the memory test on the Voltage Sensing Module.

Remedy: - check whether the permissible ambient temperature for the Voltage Sensing Module is being maintained.
- replace the Voltage Sensing Module.

F34804 VSM: CRC

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY

Cause: A checksum error has occurred when reading-out the program memory on the Voltage Sensing Module (VSM).

Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Voltage Sensing Module.

F34805 VSM: EPROM checksum error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, 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: - check whether the permissible ambient temperature for the component is maintained.
- replace the Voltage Sensing Module (VSM).

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F34806 VSM: Initialization

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowledge: IMMEDIATELY
Cause: For the Voltage Sensing Module (VSM), a fault has occurred while initializing.
Remedy: Replace the Voltage Sensing Module.

A34807 (F, N) VSM: Sequence control time monitoring

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error, timeout in the sequence control on the Voltage Sensing Module (VSM).
Remedy: Replace the Voltage Sensing Module.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F34820 VSM DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry out a POWER 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)

F34835 VSM DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry out a POWER ON.
- replace the component involved.

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F34836 VSM DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

F34837 VSM DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

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.

F34845 VSM DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM).
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F34850 VSM: Internal software error

Drive object: All objects

Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)

Acknowledge: POWER ON

Cause: An internal software error in the Voltage Sensing Module (VSM) has occurred.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.

Remedy: - replace the Voltage Sensing Module (VSM).
- if required, upgrade the firmware in the Voltage Sensing Module.
- contact the Hotline.

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F34851 CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM). The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F34860 CU DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM).
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the Voltage Sensing Module in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the Voltage Sensing Module in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

F34885 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM). The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

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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 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM). Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

F34887 CU DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component (Voltage Sensing Module) involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: NONE (OFF1, OFF2)
VECTOR: NONE (OFF1, OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Voltage Sensing Module (VSM).
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

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F34896 CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.

F34897 DRIVE-CLiQ: No communication to component

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component (Voltage Sensing Module) specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, interpret decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry out a POWER ON.

F34899 (N, A) VSM: Unknown fault

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault occurred on the Voltage Sensing Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Voltage Sensing Module is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
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 Voltage Sensing Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A34903 (F, N) VSM: I2C bus error occurred

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: An error has occurred in while accessing via the internal TM I2C bus.

Remedy: Replace the Terminal Module.

Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE
VECTOR: NONE

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Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A34904 (F, N) VSM: EEPROM

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An error has occurred accessing the non-volatile memory on the Terminal Module.
Remedy: Replace the Terminal Module.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE
VECTOR: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A34905 (F, N) VSM: Parameter access

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The Control Unit attempted to write an illegal parameter value into the Voltage Sensing Module (VSM).
Remedy: - check whether the firmware version of the VSM (r0158) matches the firmware version of Control Unit (r0018).
- if required, replace the Voltage Sensing Module.
Note:
The firmware versions that match each other are in the readme.txt file on the CompactFlash card.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE
VECTOR: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A34920 (F, N) VSM: Temperature sensor fault

Drive object: All objects
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 > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Remedy: - check that the sensor is connected correctly.
- replace sensor.
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE
VECTOR: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

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A34999 (F, N) VSM: Unknown alarm

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A fault occurred on the Voltage Sensing Module (VSM) an alarm has occurred that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the module is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
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 Voltage Sensing Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (OFF1, OFF2, OFF3)
VECTOR: NONE (OFF1, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F35000 TM54F: Sampling time invalid

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: POWER ON
Cause: The set sampling time is invalid.
- not a multiple integer of the DP clock cycle.
Fault value (r0949, floating point):
Recommended valid sampling time.
Remedy: Adapt the sampling time (e.g. set the recommended valid sampling time).
See also: p10000 (SI sampling time)

F35001 TM54F: Parameter value invalid

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The entered value is invalid.
Fault value (r0949, interpret decimal):
Parameter number with the invalid value.
Remedy: Correct the parameter value.

F35002 TM54F: Commissioning not possible

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The commissioning mode setting was rejected because for at least one drive belonging to the TM54F, the pulses had not been canceled.
Fault value (r0949, interpret decimal):
Drive object number of the first drive found without pulse cancelation.
Remedy: Cancel the pulses for the drive specified in the fault value.

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F35011 TM54F: Drive object number assignment illegal

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A drive object number was assigned twice. Each drive object number can be assigned only once.

Remedy: Correct the assignment of the drive object numbers.
See also: p10010 (SI drive object assignment)

A35012 TM54F: Test stop active

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The test stop for the Terminal Module 54F (TM54F) is presently being executed.
F35013 is output when a error occurs during the test stop.

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

F35013 TM54F: Test stop error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An error was detected when carrying out the test stop on the TM54F. As fault response, instead of the fail-safe input image, a logical 0 signal is transferred to the motion monitoring function.
Fault value (r0949, interpret hexadecimal):
0xaaaabbcc hex
aaaa: Specifies the DOs or F-DIs (dependent on test step cc) for which the expected state was not assumed. The number is bit-coded (bit 0 = F-DI 0 or F-DO 0; bit 3 = F-DI 3 or F-DO 3).
bb: Precise problem:
0x01 = Internal error (error state on the opposite side).
0x02 = Error when comparing the switching signals.
0x03 = Internal error (delay time in the new state has still not expired).
cc: Test step of the test stop in which the error has occurred.
Test stop step cc for slave (hexadecimal):
0x00: Action: L1+ switched-out, L2+ switched-in - error: Master not in initial state 0x00 and 0x0A.
0x0A: Action: L1+ switched-out, L2+ switched-in - error: Master not in state 0x15.
0x15: Action: L1+ switched-out, L2+ switched-out - error: F-DIs 0...4 of the master do not correspond to those of the slave (expected: level 0) or master not in state 0x20.
0x20: Action: L1+ switched-out, L2+ switched-out - error: Master not in state 0x2B.
0x2B: Action: L1+ switched-in, L2+ switched-in - error: F-DIs 5...9 of the master do not correspond to those of the slave (expected: level 0) or master not in state 0x36.
0x36: Action: All slave DOs at OFF - error: Master not in state 0x41.
0x41: Action: All slave DOs at OFF - error: Master not in state 0x4C.
0x4C: Action: All slave-DOs at ON - error: State of DI 20...23 does not correspond to the expected state (24V) or the master not in state 0x57.
0x57: Action: All slave DOs at ON - error: Master not in state 0x62.
0x62: Action: All slave-DOs at OFF - error: State of DI 20...23 does not correspond to the expected state (0V) or the master not in state 0x6D.
0x6D: Action: All slave DOs at OFF - error: Master not in state 0x78.
0x78: Action: All slave-DOs at ON - error: State of DI 20...23 does not correspond to the expected state (0V) or the master not in state 0x83.
0x83: Action: All slave DOs at ON - error: Master not in state 0x8E.
0x8E: Action: All slave-DOs at OFF - error: State of DI 20...23 does not correspond to the expected state (0V) or the master not in state 0x99.
0x99: Action: All slave DOs at OFF - error: Master not in state 0xA4.
0xA4: Action: All slave-DOs at OFF - error: State of DI 20...23 do not correspond to the expected state 24V) or the master not in state 0xAF.
0xAF: Action: All slave DOs at the original state - error: Master not in state 0xBA.

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0xBA: Action: All slave DOs at the original state - error: Master not in state 0xC5.
0xC5: Action: Return to start state, test stop completed on the slave side. Error: Master not in state 0xD0.
Test stop step cc for master (hexadecimal):
0x0A: No actions - error: Slave not in initial state 0x00.
0x15: No actions - error: Slave not in initial state 0x0A.
0x20: No actions - error: F-DIs 0...4 of the slave do not correspond with those of the master (expected: level 0) or slave not in state 0x15.
0x2B: No actions - error: Slave not in initial state 0x20.
0x36: No actions - error: F-DIs 0...5 of the slave do not correspond with those of the master (expected: level 0) or slave not in state 0x2B.
0x41: Action: All master DOs at OFF - error: Slave not in state 0x36.
0x4C: Action: All master DOs at OFF - error: Slave not in state 0x41.
0x57: Action: All master-DOs at ON - error: Status of DI 20...23 of the slave does not correspond to the expected state (24V) or the slave not in state 0x4C.
0x62: Action: All master DOs at ON - error: Slave not in initial state 0x57.
0x6D: Action: All master-DOs at ON - error: State of DI 20...23 of the slave does not correspond to the expected state (0V) or the slave not in state 0x62.
0x78: Action: All master DOs at ON - error: Slave not in state 0x6D.
0x83: Action: All master-DOs at OFF - error: State of DI 20...23 of the slave does not correspond to the expected state (0V) or the slave not in state 0x78.
0x8E: Action: All master DOs at OFF - error: Slave not in state 0x83.
0x99: Action: All master-DOs at OFF - error: State of DI 20...23 of the slave does not correspond to the expected state (0V) or the slave not in state 0x8E.
0xA4: Action: All master DOs at OFF - error: Slave not in state 0x99.
0xAF: Action: All master-DOs at OFF - error: Status of DI 20...23 of the slave does not correspond to the expected state (24V) or the slave not in state 0xA4.
0xBA: Action: All master DOs at the original state - error: Slave not in state 0xAF.
0xC5: Action: All master DOs at the original state - error: Slave not in state 0xBA.
0xD0: Wait for the end of the test stop and return to the start state
Note: A check of the switching state of the F-DIs and DIs always refers to the switching operation of the previous state. The actions in one state are always only carried out after the actual state has been checked.

Remedy: Check the wiring of the F-DIs and F-DOs and restart the test stop. The fault is withdrawn if the test stop is successfully completed.

A35014 TM54F: Test stop required

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause:
- after powering-up the drive, a test stop has still not been carried out.
- a new test stop is required after commissioning.
- the time to carry out the forced checking procedure (test stop) has expired (p10003).

Remedy: Initiate test stop (BI: p10007).

A35015 TM54F: Communication with drive not established

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: Cyclic communication of one or several drives with the Terminal Module 54F (TM54F) is not active.
Fault value (r0949, interpret binary):
Bit 0 = 1: No communication with drive 1.
...
Bit 5 = 1: No communication with drive 6.
For fault value = 0, the following applies:
The number of drive objects specified in p10010 is not equal to the number of drives that have drive-based motion monitoring functions that have been enabled.
The drive object number for drive n is set in p10010[n-1].
When this fault is present, none of the drives that have drive-based motion monitoring functions operating with TM54F, are enabled.

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Remedy: For all drive objects specified in p10010, check whether the drive-based motion monitoring functions with TM54F are enabled (p9601).

A35016 TM54F: Net data communication with drive not established

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The cyclic net data communication within the Terminal Module 54F (TM54F) is still not active.
This message is output after the TM54F master and TM54F slave have booted and is automatically withdrawn as soon as communications have been established.
If a drive does not communicate with the TM54F, then none of the drives parameterized in p10010 are enabled.

Remedy: When replacing a Motor Module, carry out the following steps:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.

The following always applies:
- for all drive objects specified in p10010, check whether the drive-based motion monitoring functions with TM54F are enabled (p9601).
- check whether fault F35150 is present and if required, remove the cause of the fault.

See also: r10055 (SI TM54F communication status drive-specific)

F35040 TM54F: 24V undervoltage

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: POWER ON

Cause: For the 24 V power supply for the Terminal Module 54F (TM54F) an undervoltage condition was detected.
As fault response at the F-DIs involved, fail-safe signals are transferred to the motion monitoring functions instead of the actual terminal signals.
Fault value (r0949, interpret binary):
Bit 0 = 1: Power supply undervoltage at connection X524.
Bit 1 = 1: Power supply undervoltage at connection X514.

Remedy: Check the 24 V DC power supply for the TM54F.

F35043 TM54F: 24V overvoltage

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: POWER ON

Cause: For the 24 V power supply for the Terminal Module 54F (TM54F) an overvoltage condition was detected.
As fault response at the F-DIs involved, fail-safe signals are transferred to the motion monitoring functions instead of the actual terminal signals.

Remedy: Check the 24 V DC power supply for the TM54F.

F35051 TM54F: Defect in a monitoring channel

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The Terminal Module 54F (TM54F) has identified an error in the data cross check between the two control channels.
As fault response, instead of the fail-safe input image, a logical 0 signal is transferred to the motion monitoring function.
Fault value (r0949, interpret hexadecimal):
aaaabbcc hex
aaaa: A value greater than zero indicates an internal software error.
bb: Data to be cross-checked that resulted in the error.
bb = 00 hex: p10000

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bb = 01 hex: p10001
bb = 02 hex: p10002
bb = 03 hex: p10006
bb = 04 hex: p10008
bb = 05 hex: p10010
bb = 06 hex: p10011
bb = 07 hex: p10020
bb = 08 hex: p10021
bb = 09 hex: p10022
bb = 0A hex: p10023
bb = 0B hex: p10024
bb = 0C hex: p10025
bb = 0D hex: p10026
bb = 0E hex: p10027
bb = 0F hex: p10028
bb = 10 hex: p10036
bb = 11 hex: p10037
bb = 12 hex: p10038
bb = 13 hex: p10039
bb = 14 hex: p10040
bb = 15 hex: p10041
bb = 16 hex: p10042
bb = 17 hex: p10043
bb = 18 hex: p10044
bb = 19 hex: p10045
bb = 1A hex: p10046
cc: Index of the data to be cross-checked that resulted in the error.

Remedy: Carry out the following steps on the TM54F:
- activate the safety commissioning mode (p0010 = 95).
- start the copy function for SI parameters (p9700 = 57 hex).
- acknowledge complete data change (p9701 = AC hex).
- exit the safety commissioning mode (p0010 = 0).
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.

For an internal software error (aaaa greater than zero):
- upgrade the software on the TM54F.
- contact the Hotline.
- replace the TM54F.

F35052 (A) TM54F: Internal hardware fault

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: An internal software/hardware fault on the TM54F was identified.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy:
- check the electrical cabinet design and cable routing for EMC compliance
- upgrade the software on the TM54F.
- contact the Hotline.
- replace the TM54F.

Reaction upon A: NONE

Acknowl. upon A: NONE

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F35053 TM54F: Temperature fault threshold exceeded

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The temperature measured using the temperature sensing on the TM54F has exceeded the threshold value to initiate this fault.
As fault response, instead of the fail-safe input image, a logical 0 signal is transferred to the motion monitoring function.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

Remedy: - allow the TM54F to cool down.
- carry out a POWER ON.

A35075 (F) TM54F: Internal communications

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: An internal communications error has occurred in the Terminal Module 54F (TM54F).
Fault value (r0949, interpret decimal):
Only for internal Siemens diagnostics.

Remedy: - check the electrical cabinet design and cable routing for EMC compliance
- upgrade the software on the TM54F.
- contact the Hotline.
- replace the TM54F.

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

A35080 (F) TM54F: Checksum error safety parameters

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: NONE

Cause: The calculated checksum entered in r10004 over the safety-relevant parameters does not match the reference checksum saved in p10005 at the last machine acceptance.
Fault value (r0949, interpret decimal):
1: Checksum error for functional SI parameters.
2: 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.
- acknowledge that hardware was replaced
- carry out a POWER ON.
- carry out an acceptance test.

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

F35150 TM54F: Communication error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A communication error between the TM54F master and Control Unit or between the TM54F slave and the Motor Module was detected.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

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Remedy: When replacing a Motor Module, carry out the following steps:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.

The following always applies:
- check the electrical cabinet design and cable routing for EMC compliance
- upgrade the software on the TM54F.
- contact the Hotline.
- replace the TM54F.

F35151 TM54F: Discrepancy error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY (POWER ON)

Cause: The safety input terminals or output terminals show a different state longer than that parameterized in p10002.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
xxxx:
The safety-relevant input terminals F-DI indicate a discrepancy.
Bit 0: Discrepancy for F-DI 0
...
Bit 9: Discrepancy for F-DI 9
yyyy:
The safety-relevant output terminals F-DO indicate a discrepancy.
Bit 0: Discrepancy for F-DO 0
...
Bit 3: Discrepancy for F-DO 3
Note:
If several discrepancy errors occur consecutively, then this fault is only signaled for the first error that occurs.
The following possibilities exist of diagnosing all of the discrepancy errors:
- in the commissioning software, evaluate the input states and output states of the TM54F. All discrepancy errors are displayed here.
- compare parameters p10051 and p10052 from the TM54F master and TM54F slave for discrepancy.

Remedy: Check the wiring of the F-DI and F-DO (contact problems).
Note:
A discrepancy of the F-DO also occurs (in this special case, in conjunction with fault F35150 for the TM54F slave), if, after replacing a Motor Module, it was forgotten to acknowledge this.
When replacing a Motor Module, carry out the following steps:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (power off/on) for all components.

F-DI: Failsafe Digital Input
F-DO: Failsafe Digital Output

A35200 (F, N) TM: Calibration data

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: An error was detected in the calibration data of the Terminal Module.
Alarm value (r2124, interpret decimal):
The hundred thousands and ten thousands location specifies the component Id of the Terminal Module where the fault occurred.
The thousands location specifies whether the analog input 0 (=0) or analog output 1 (= 1) is involved.
The hundreds location specifies the fault type:
0: No calibration data available.
1: Offset too high (> 100 mV).
The tens and ones location specifies the number of the input involved.

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Remedy: Power-down the unit and power-up again.
If the fault is still present, replace the module/board.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F35207 (N, A) TM: Temperature fault threshold exceeded

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (NONE, OFF1, OFF3)
VECTOR: OFF2 (NONE, OFF1, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105) has exceeded the threshold value to initiate this fault (p4102[1]).
Please note that this fault can only be initiated if the temperature evaluation was activated (p4100 = 2 for KTY sensor or p4100 = 1 for PTC sensor).
Fault value (r0949, interpret decimal):
The hundred thousands and ten thousands location specifies the component number of the TMxx where the fault occurred.
Alarm:
Please note that Fault F35207 only causes the drive to be shut down if there is at least one BICO interconnection between the drive and TM31.
Remedy: - allow the temperature sensor to cool down.
- if required, set the fault response to NONE (p2100, p2101).
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A35211 (F, N) TM: Temperature alarm threshold exceeded

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105) has exceeded the threshold value to initiate this alarm (p4102[0]).
Alarm value (r2124, interpret decimal):
The hundred thousands and ten thousands location specifies the component number of the TMxx where the fault occurred.
Remedy: Allow the temperature sensor to cool down.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F35220 (N, A) TM: Frequency limit reached for signal output

Drive object: All objects
Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The signals output from the Terminal Module 41 (TM41) for tracks A/B have reached the limit frequency. The output signals are no longer in synchronism with the specified setpoint.
Remedy: - enter a lower speed setpoint (p1155).
- reduce the encoder pulse number (p0408).

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Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

F35221 (N, A) TM: Setpoint - actual value deviation, outside the tolerance range

Drive object: All objects
Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowledge: IMMEDIATELY (POWER ON)
Cause: The deviation between the setpoint and the output signals (track A/B) exceeds the tolerance of +/-3 %.
Remedy: - reduce the basic clock cycle (p0110, p0111).
- replace the module.
Reaction upon N: NONE
Acknowl. upon N: NONE
Reaction upon A: NONE
Acknowl. upon A: NONE

A35222 (F, N) TM: Encoder pulse number not permissible

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The encoder pulse number entered does not match the permissible pulse number from a hardware perspective.
Fault value (r0949, interpret decimal):
1: Encoder pulse number is too high.
2: Encoder pulse number is too low.
4: Encoder pulse number is less than the zero mark offset (p4426).
Remedy: Enter the encoder pulse number in the permissible range (p0408).
Reaction upon F: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35223 (F, N) TM: Zero mark offset not permissible

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The entered zero mark offset is not permissible.
Fault value (r0949, interpret decimal):
1: Zero mark offset is too high.
See also: p4426 (Incremental encoder emulation, pulses for zero mark)
Remedy: Enter the zero mark offset in the permissible range (p4426).
Reaction upon F: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

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A35224 (N) TM: Zero mark synchronization interrupted

Drive object: TM41
Reaction: NONE
Acknowledge: NONE
Cause: The zero mark synchronization with the encoder to be emulated was interrupted.
Alarm value (r2124, interpret decimal):
0: The encoder is not in the ready state (e.g. encoder parked)
1: An absolute encoder was connected.
2: The encoder r0479[0...2] interconnected with CI: p4420 is already communicating with another TM41 (precisely one TM41 can be interconnected with a specific r0479[0...2]).
3: The BICO interconnection to Terminal Module 41 (TM41) was removed (CI: p4420 = 0 signal).
4: The encoder connected with CI: p4420 has carried out an EDS changeover (this operation is not supported, set p4420 to 0 and interconnect again).
5: The maximum number of revolutions of the encoder was exceeded.
6: Encoder in an invalid state.
7: Encoder in an invalid state.
8: Encoder in an invalid state (the encoder is not parameterized or the interconnected signal source is not in the cyclic state).
Remedy: None necessary.
- if the encoder changes into the ready state, then a synchronization operation that was previously interrupted is carried out again.
- if the synchronization was interrupted due to the maximum permissible synchronization duration, then a new synchronization is not carried out.
- for an absolute encoder, no synchronization is carried out, the zero mark is always output at the zero revolution of the TM41.

Reaction upon N: NONE
Acknowl. upon N: NONE

A35225 TM: Zero mark synchronization held - encoder not in the ready state

Drive object: TM41
Reaction: NONE
Acknowledge: NONE
Cause: The zero mark synchronization with the encoder to be emulated was held.
The encoder is not in the "ready" state.
Remedy: Bring the encoder into the "ready" state.

A35226 TM: Tracks A/B are de-activated

Drive object: TM41
Reaction: NONE
Acknowledge: NONE
Cause: The output of tracks A/B of the Terminal Module 41 (TM41) has been held (frozen). This means:
The encoder emulation of the TM41 hardware is enabled (this is necessary so that no TRI state of the AB tracks occurs). The hardware receives a setpoint of zero so that no motion occurs at the TM41 AB tracks.
Reasons for Alarm 35226:
- CI: p4420 was not interconnected (in this case, the encoder emulation of the hardware is de-activated)
- the encoder is not in the "ready" state (parking encoder or non-parameterized encoder data set).
- for TM41 there is an additional fault.

Remedy:
- establish an interconnection from CI: p4420.
- bring the encoder into the "ready" state.
- remove any TM41 faults.

A35227 TM: Zero mark synchronization interrupted - EDS changeover not supported

Drive object: TM41
Reaction: NONE
Acknowledge: NONE
Cause: The interconnected encoder has carried out an EDS changeover.
Terminal Module 41 (TM41) does not support this particular application case.
Remedy: Bring the encoder into the ready state, carry out RAM to ROM and then Power On.

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F35228 TM: Sampling time p4099[3] invalid

Drive object: TM41
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The value of the cycle time for the incremental encoder emulation, specified in p4099[3] does not correspond to a valid value.
The system already changed the p4099[3] to a valid value.
The parameters of the TM41 involved must be saved on the CompactFlash card and a POWER ON carried out.
Remedy:

F35229 TM time slice de-activated

Drive object: TM41
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The required value of a cycle time in P4099 () is invalid.
The corresponding time slice was not activated.
Alarm value:
0 Digital input/outputs (P4099(0))
1 Analog input (P4099 (1))
3 Encoder emulation position setpoint (P4099 (3))
4 Encoder emulation speed setpoint (P4099 (3))
5 Encoder emulation speed setpoint (P4099 (3))
6 Internal sequencer of the TM41 (internal error)
Remedy: The sampling time P4099 (0) may not be zero. Change the sampling time corresponding to the error code.

F35230 HW problem with the TM module

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: NONE
VECTOR: NONE
Acknowledge: POWER ON
Cause: The terminal module used has signaled an internal error. Signals of this module may not be evaluated and are potentially incorrect.
Remedy: The module must be replaced if no other alarms that refer to a communications error are present in the system.

N35800 (F) TM: Group signal

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowledge: NONE
Cause: The Terminal Module has detected at least one fault.
Remedy: Evaluates other actual messages.
Reaction upon F: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY

A35801 (F, N) TM DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved.
Alarm value (r2124, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

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Remedy: - check the DRIVE-CLiQ connection.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A35802 (F, N) TM: Time slice overflow

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Time slice overflow on Terminal Module.
Remedy: Replace the Terminal Module.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35803 (F, N) TM: Memory test

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An error has occurred during the memory test on the Terminal Module.
Remedy: - check whether the permissible ambient temperature for the Terminal Module is being maintained.
- replace the Terminal Module.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35804 (F, N) TM: CRC

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: A checksum error has occurred when reading-out the program memory on the Terminal Module.
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Terminal Module.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35805 (F, N) TM: EPROM checksum error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Internal parameter data is corrupted.
Alarm value (r2124, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the Terminal Module 31 (TM31).

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Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35807 (F, N) TM: Sequence control time monitoring

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: Error, timeout, sequence control on the Terminal Module.
Remedy: Replace the Terminal Module.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F35820 TM DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry out a POWER 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)

F35835 TM DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

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F35836 TM DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry out a POWER ON.

F35837 PTM DRIVE-CLiQ: Component fault

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
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.

F35845 TM DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F35850 TM: Internal software error

Drive object: All objects
Reaction: A_INFEED: OFF1 (NONE, OFF2)
SERVO: OFF1 (NONE, OFF2, OFF3)
VECTOR: OFF1 (NONE, OFF2, OFF3)
Acknowledge: POWER ON
Cause: An internal software error in the Terminal Module (TM) has occurred.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
Remedy: - replace the Terminal Module (TM).
- if required, upgrade the firmware in the Terminal Module.
- contact the Hotline.

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F35851 CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F35860 CU DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the Terminal Module in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the Terminal Module in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

F35885 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: OFF1 (OFF2)

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

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)

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F35886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry out a POWER ON.

F35887 CU DRIVE-CLiQ: Component fault

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component (Terminal Module) involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.
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 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF1 (OFF2)
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the Terminal Module (TM) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F35896 CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects
Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.

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F35897 DRIVE-CLiQ: No communication to component

Drive object: All objects

Reaction: A_INFEED: OFF2 (NONE, OFF1)
SERVO: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)
VECTOR: OFF2 (ENCODER, IASC / DCBRAKE, NONE, OFF1, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: Communications with the DRIVE-CLiQ component (Terminal Module) specified by the fault value is not possible.
One cause can be, e.g. that a DRIVE-CLiQ cable has been withdrawn.
Fault value (r0949, interpret decimal):
Component ID.

Remedy: - check the DRIVE-CLiQ connections.
- carry out a POWER ON.

F35899 (N, A) TM: Unknown fault

Drive object: All objects

Reaction: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)

Acknowledge: IMMEDIATELY (POWER ON)

Cause: A fault has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Terminal Module is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
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 Terminal Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

A35903 (F, N) TM: I2C bus error occurred

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: An error has occurred while accessing the internal I2C bus of the Terminal Module.

Remedy: Replace the Terminal Module.

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

A35904 (F, N) TM: EEPROM

Drive object: All objects

Reaction: NONE

Acknowledge: NONE

Cause: An error has occurred accessing the non-volatile memory on the Terminal Module.

Remedy: Replace the Terminal Module.

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

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A35905 (F, N) TM: Parameter access

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The Control Unit attempted to write an illegal parameter value into the Terminal Module.
Remedy: - check whether the firmware version of the Terminal Module (r0158) matches the firmware version of Control Unit (r0018).
- if required, replace the Terminal Module.
Note:
The firmware versions that match each other are in the readme.txt file on the CompactFlash card.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35906 (F, N) TM: 24 V power supply missing

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The 24 V power supply for the digital outputs is missing.
Alarm value (r2124, interpret hexadecimal):
01: TM17 24 V power supply for DI/DO 0 ... 7 missing.
02: TM17 24 V power supply for DI/DO 8 ... 15 missing.
04: TM15 24 V power supply for DI/DO 0 ... 7 (X520) missing.
08: TM15 24 V power supply for DI/DO 8 ... 15 (X521) missing.
10: TM15 24 V power supply for DI/DO 16 ... 23 (X522) missing.
20: TM41 24 V power supply for DI/DO 0 ... 3 missing.
Remedy: Check the terminals for the power supply voltage (L1+, L2+, L3+, M).
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35907 (F, N) TM: Hardware initialization error

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The Terminal Module was not successfully initialized.
Alarm value (r2124, interpret hexadecimal):
01: TM17 or TM41 - incorrect configuration request.
02: TM17 or TM41 - programming not successful.
04: TM17 or TM41 - invalid time stamp
Remedy: Carry out a POWER ON.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35910 (F, N) TM: Module overtemperature

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The temperature in the module has exceeded the highest permissible limit.
Remedy: - reduce the ambient temperature.
- replace the Terminal Module.

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Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35911 (F, N) TM: Clock synchronous operation sign-of-life missing

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: The maximum permissible number of errors in the master sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.
When the alarm is output, the module outputs are reset up to the next synchronization.
Remedy: - check the physical bus configuration (terminating resistor, shielding, etc.).
- check the interconnection of the master sign-of-life (r4201 via p0915).
- check whether the master correctly sends the sign-of-life (e.g. set-up a trace with r4201.12 ... r4201.15 and trigger signal r4301.9).
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35920 (F, N) TM: Temperature sensor fault

Drive object: All objects
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 > 1630 Ohm).
2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm).
Remedy: - check that the sensor is connected correctly.
- replace sensor.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A35999 (F, N) TM: Unknown alarm

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on the Terminal Module is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
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 Terminal Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).
Reaction upon F: A_INFEED: NONE (OFF1, OFF2)
SERVO: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
VECTOR: NONE (IASC / DCBRAKE, OFF1, OFF2, OFF3, STOP1, STOP2)
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

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N36800 (F) DMC: Group signal

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The DRIVE-CLiQ Hub Module Cabinet (DMC) has detected at least one fault.
Remedy: Evaluates other actual messages.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY

A36801 (F, N) DMC DRIVE-CLiQ: Sign-of-life missing

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Alarm value (r2124, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: - check the DRIVE-CLiQ connection.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY
Reaction upon N: NONE
Acknowl. upon N: NONE

A36804 (F, N) DMC: CRC

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: A checksum error has occurred when reading-out the program memory on the DRIVE-CLiQ Hub Module Cabinet (DMC).
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the DRIVE-CLiQ Hub Module Cabinet (DMC).
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

A36805 (F, N) DMC: EPROM checksum error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: Internal parameter data is corrupted.
Alarm value (r2124, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
Remedy: - check whether the permissible ambient temperature for the component is maintained.
- replace the DRIVE-CLiQ Hub Module Cabinet (DMC).

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Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY (POWER ON)
Reaction upon N: NONE
Acknowl. upon N: NONE

F36820 DMC DRIVE-CLiQ: Telegram error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
01. CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.
04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

F36835 DMC DRIVE-CLiQ: Cyclic data transfer error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F36836 DMC DRIVE-CLiQ: Send error for DRIVE-CLiQ data

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

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F36837 DMC DRIVE-CLiQ: Component fault

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

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.

F36845 DMC DRIVE-CLiQ: Cyclic data transfer error

Drive object: A_INF, B_INF, CU_LINK, DMC20, SERVO, S_INF, TB30, TM15, TM15DI_DO, TM17, TM31, TM41, TM54F_MA, TM54F_SL, VECTOR

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F36851 CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.

Remedy: Upgrade the firmware of the component involved.

F36860 CU DRIVE-CLiQ: Telegram error

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the Terminal Module in the telegram and in the receive list does not match and the receive telegram is too early.

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06: The address of the Terminal Module in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER ON.
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

F36885 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.

Remedy: - check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

F36886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

F36887 CU DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: NONE

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module Cabinet) involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.

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.

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F36895 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the DRIVE-CLiQ Hub Module Cabinet (DMC) involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F36896 CU DRIVE-CLiQ: Inconsistent component characteristics

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The properties of the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module Cabinet), 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: - when replacing cables, only use cables with the same length as the original cables.
- when replacing components, use the same components and firmware releases.
- carry out a POWER ON.

F40000 Fault at DRIVE-CLiQ socket X100

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X100.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40001 Fault at DRIVE-CLiQ socket X101

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X101.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40002 Fault at DRIVE-CLiQ socket X102

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X102.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

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F40003 Fault at DRIVE-CLiQ socket X103

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X103.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40004 Fault at DRIVE-CLiQ socket X104

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X104.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

F40005 Fault at DRIVE-CLiQ socket X105

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: A fault has occurred at the drive object at the DRIVE-CLiQ socket X105.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
Remedy: Evaluate the fault buffer of the specified object.

A40100 Alarm at DRIVE-CLiQ socket X100

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X100.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40101 Alarm at DRIVE-CLiQ socket X101

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X101.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40102 Alarm at DRIVE-CLiQ socket X102

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X102.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

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A40103 Alarm at DRIVE-CLiQ socket X103

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X103.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40104 Alarm at DRIVE-CLiQ socket X104

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X104.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

A40105 Alarm at DRIVE-CLiQ socket X105

Drive object: All objects
Reaction: NONE
Acknowledge: NONE
Cause: An alarm has occurred at the drive object at the DRIVE-CLiQ socket X105.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
Remedy: Evaluate the alarm buffer of the specified object.

F40799 CU-Link: Configured transfer end time exceeded

Drive object: All objects
Reaction: NONE
Acknowledge: IMMEDIATELY
Cause: The configured transfer end time when transferring the cyclic actual values was exceeded.
Remedy: - carry out a POWER ON (power off/on) for all components.
- contact the Hotline.

F40801 CX32 DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: - carry out a POWER ON.
- replace the component involved.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F40820 CX32 DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
01: CRC error.
02: Telegram is shorter than specified in the length byte or in the receive list.
03: Telegram is longer than specified in the length byte or in the receive list.

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04: The length of the receive telegram does not match the receive list.
05: The type of the receive telegram does not match the receive list.
06: The address of the component in the telegram and in the receive list do not match.
07: A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
08: A SYNC telegram is not expected - but the received telegram is a SYNC telegram.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.

Remedy: - carry out a POWER 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)

F40835 CX32 DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved. The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.

Remedy: - carry out a POWER 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

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.

Remedy: Carry out a POWER ON.

F40837 CX32 DRIVE-CLiQ: Component fault

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.

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

Drive object: All objects

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.

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Remedy: Carry out a POWER ON.
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

F40851 CU DRIVE-CLiQ: Sign-of-life missing

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The DRIVE-CLiQ component did not set the sign of life to the Control Unit.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
Remedy: Upgrade the firmware of the component involved.

F40860 CU DRIVE-CLiQ: Telegram error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
11: CRC error and the receive telegram is too early.
01: CRC error.
12: The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
02: Telegram is shorter than specified in the length byte or in the receive list.
13: The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
03: Telegram is longer than specified in the length byte or in the receive list.
14: The length of the receive telegram does not match the receive list and the receive telegram is too early.
04: The length of the receive telegram does not match the receive list.
15: The type of the receive telegram does not match the receive list and the receive telegram is too early.
05: The type of the receive telegram does not match the receive list.
16: The address of the controller extension in the telegram and in the receive list does not match and the receive telegram is too early.
06: The address of the controller extension in the telegram and in the receive list do not match.
19: The error bit in the receive telegram is set and the receive telegram is too early.
09: The error bit in the receive telegram is set.
10: The receive telegram is too early.
Remedy: - carry out a POWER 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)

F40885 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
The nodes do not send and receive in synchronism.
Fault value (r0949, interpret hexadecimal):
0A: The sign-of-life bit in the receive telegram is not set.
1A: Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
21: The cyclic telegram has not been received.
22: Timeout in the telegram receive list.
40: Timeout in the telegram send list.
62: Error at the transition to cyclic operation.
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)

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F40886 CU DRIVE-CLiQ: Error when sending DRIVE-CLiQ data

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved. Data were not able to be sent.
Fault value (r0949, interpret hexadecimal):
41: Telegram type does not match send list.
Remedy: Carry out a POWER ON.

F40887 CU DRIVE-CLiQ: Component fault

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: Fault detected on the DRIVE-CLiQ component involved. Faulty hardware cannot be excluded.
Fault value (r0949, interpret hexadecimal):
20: Error in the telegram header.
23: Receive error: The telegram buffer memory contains an error.
42: Send error: The telegram buffer memory contains an error.
43: Send error: The telegram buffer memory contains an error.
60: Response received too late during runtime measurement.
61: Time taken to exchange characteristic data too long.
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 CU DRIVE-CLiQ: Cyclic data transfer error

Drive object: All objects
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: A DRIVE-CLiQ communications error has occurred between the Control Unit and the controller extension involved.
Fault value (r0949, interpret hexadecimal):
0B: Synchronization error during alternating cyclic data transfer.
Remedy: Carry out a POWER ON.
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

F49150 Cooling system: Fault occurred

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The cooling system signals a general fault.
Remedy: - check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.
See also: p0266 (Cooling system, feedback signals, signal source)

F49151 Cooling system: Conductivity has exceeded the fault threshold

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The conductivity of the cooling liquid has exceeded the selected fault threshold (p0269[2]).
See also: p0261 (Cooling system, starting time 2), p0262 (Cooling system, fault conductivity delay time), p0266 (Cooling system, feedback signals, signal source)
Remedy: Check the device to de-ionize the cooling liquid.

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F49152 Cooling system: ON command feedback signal missing

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The feedback signal of the ON command of the cooling system is missing.
- after the ON command, the feedback signal has not been received within the selected starting time (p0260).
- the feedback signal has failed in operation.
See also: p0260 (Cooling system, starting time 1), r0267 (Cooling system status word)

Remedy:
- check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.

F49153 Cooling system: Liquid flow too low

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The drive converter cooling system signals that the cooling liquid flow is too low.
- after the ON command, the feedback signal has not been received within the selected starting time (p0260).
- in operation, the feedback signal has failed for longer than the permitted failure time (p0263).
See also: p0260 (Cooling system, starting time 1), p0263 (Cooling system fault liquid flow, delay time), r0267 (Cooling system status word)

Remedy:
- check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.

F49154 (A) Cooling system: Liquid leak is present

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The liquid leakage monitoring function has responded.
See also: r0267 (Cooling system status word)

Remedy:
- check the cooling system for leaks in the cooling circuit.
- check the wiring of the input terminal (Terminal Module) used to monitor leaking fluid.

Reaction upon A: NONE
Acknowl. upon A: NONE

F49155 Cooling system: Power Stack Adapter, firmware version too old

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: POWER ON
Cause: The firmware version in the Power Stack Adapter (PSA) is too old and does not support the liquid cooling.
Remedy: Upgrade the firmware.

F49156 Cooling system: Cooling liquid temperature has exceeded the fault threshold

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The cooling liquid intake temperature has exceeded the permanently set fault threshold.
Remedy: Check the cooling system and the ambient conditions.

A49170 Cooling system: Alarm has occurred

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The cooling system signals a general alarm.
Remedy:
- check the wiring between the cooling system and the input terminal (Terminal Module).
- check the external Control Unit for the cooling system.

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A49171 **Cooling system: Conductivity has exceeded the alarm threshold**

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The conductivity of the cooling liquid has exceeded the selected alarm threshold (p0269[1]).
See also: p0261 (Cooling system, starting time 2), p0262 (Cooling system, fault conductivity delay time), p0266 (Cooling system, feedback signals, signal source)
Remedy: Check the device to de-ionize the cooling liquid.

A49172 **Cooling system: Conductivity actual value is not valid**

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: When monitoring the conductivity of the cooling liquid, there is a fault in the wiring or in the sensor.
Remedy: - check the wiring between the cooling system and the Power Stack Adapter (PSA).
- check the function of the sensor to measure the conductivity.

A49173 **Cooling system: Cooling liquid temperature has exceeded the alarm threshold**

Drive object: A_INF, B_INF, SERVO, S_INF, VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The cooling liquid intake temperature has exceeded the permanently set alarm threshold.
Remedy: Check the cooling system and the ambient conditions.

F49200 **Excitation group signal fault**

Drive object: VECTOR
Reaction: OFF2
Acknowledge: IMMEDIATELY
Cause: The excitation sequence control signals a fault.
Fault value (r0949, hexadecimal):
Bit 0:
When powered-down or when powering-down the excitation, the signal "excitation ready to power-up feedback signal" was not received within the monitoring time.
Bit 1:
After an ON command, the signal "excitation ready feedback signal" was not received within the monitoring time.
Bit 2:
After the pulses were enabled, the signal "excitation operational feedback signal" was not received within the monitoring time.
Bit 3:
The "excitation group signal fault" signal is present.
Remedy: - check the excitation.
- check commands, feedback signals and BICO interconnections.

A49201 (F) **Excitation, group signal alarm**

Drive object: VECTOR
Reaction: NONE
Acknowledge: NONE
Cause: The "excitation group signal alarm" signal is present.
Remedy: Check the excitation equipment.
Reaction upon F: NONE
Acknowl. upon F: IMMEDIATELY

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Appendix

A

Content

A.1	ASCII table (excerpt)	A-1752
A.2	List for motor code/encoder code	A-1753

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A.1 ASCII table (excerpt)

The following table includes the decimal and hexadecimal notation of selected ASCII characters.

Table A-1 ASCII table (excerpt)

Letter/number	Decimal	Hexadecimal	Letter/number	Decimal	Hexadecimal
Blanks	32	20	H	72	48
-	45	2D	I	73	49
0	48	30	J	74	4A
1	49	31	K	75	4B
2	50	32	L	76	4C
3	51	33	M	77	4D
4	52	34	N	78	4E
5	53	35	O	79	4F
6	54	36	P	80	50
7	55	37	Q	81	51
8	56	38	R	82	52
9	57	39	S	83	53
A	65	41	T	84	54
B	66	42	U	85	55
C	67	43	V	86	56
D	68	44	W	87	57
E	69	45	X	88	58
F	70	46	Y	89	59
G	71	47	Z	90	5A

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A.2 List for motor code/encoder code

A.2.1 Motor code

Induction motors (Version: 2502900)

Table A-2 Motor code for induction motors

Order number	Motor type (p0300)	Motor code (p0301)
1PH2092-4WG4x-xxxx	102	10201
1PH2093-6WF4x-xxxx	102	10202
1PH2095-6WF4x-xxxx	102	10203
1PH2096-4WG4x-xxxx	102	10204
1PH2113-6WF4x-xxxx	102	10205
1PH2115-6WF4x-xxxx	102	10206
1PH2117-6WF4x-xxxx	102	10207
1PH2118-6WF4x-xxxx	102	10208
1PH2123-4WF4x-xxxx	102	10209
1PH2127-4WF4x-xxxx	102	10210
1PH2128-4WF4x-xxxx	102	10211
1PH2143-4WF4x-xxxx	102	10212
1PH2147-4WF4x-xxxx	102	10213
1PH2182-6WC4x-xxxx	102	10214
1PH2184-6WP4x-xxxx	102	10215
1PH2186-6WB4x-xxxx	102	10216
1PH2188-6WB4x-xxxx	102	10217
1PH2254-6WB4x-xxxx	102	10218
1PH2256-6WB4x-xxxx	102	10219
1PH4103-4NF2x-xxxx	104	10401
1PH4105-4NF2x-xxxx	104	10403
1PH4107-4NF2x-xxxx	104	10405
1PH4133-4NF2x-xxxx	104	10407
1PH4135-4NF2x-xxxx	104	10409
1PH4137-4NF2x-xxxx	104	10411
1PH4138-4NF2x-xxxx	104	10413
1PH4163-4NF2x-xxxx	104	10416
1PH4167-4NF2x-xxxx	104	10418
1PH4168-4NF2x-xxxx	104	10420

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Table A-2 Motor code for induction motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1PH7101-xxFxx-xLxx	107	12701
1PH7101-xxFxx-xxxx	107	10701
1PH7103-xxDxx-xLxx	107	12702
1PH7103-xxDxx-xxxx	107	10702
1PH7103-xxFxx-xLxx	107	12703
1PH7103-xxFxx-xxxx	107	10703
1PH7103-xxGxx-xLxx	107	12704
1PH7103-xxGxx-xxxx	107	10704
1PH7105-xxFxx-xLxx	107	12705
1PH7105-xxFxx-xxxx	107	10705
1PH7107-xxDxx-xLxx	107	12706
1PH7107-xxDxx-xxxx	107	10706
1PH7107-xxFxx-xLxx	107	12707
1PH7107-xxFxx-xxxx	107	10707
1PH7107-xxGxx-xLxx	107	12708
1PH7107-xxGxx-xxxx	107	10708
1PH7131-xxFxx-xLxx	107	12709
1PH7131-xxFxx-xLxx	107	10709
1PH7133-xxDxx-xLxx	107	12710
1PH7133-xxDxx-xLxx	107	10710
1PH7133-xxFxx-xLxx	107	12711
1PH7133-xxFxx-xxxx	107	10711
1PH7133-xxGxx-xLxx	107	12712
1PH7133-xxGxx-xxxx	107	10712
1PH7135-xxFxx-xLxx	107	12713
1PH7135-xxFxx-xLxx	107	10713
1PH7137-xxDxx-xLxx	107	12714
1PH7137-xxDxx-xxxx	107	10714
1PH7137-xxFxx-xLxx	107	12715
1PH7137-xxFxx-xxxx	107	10715
1PH7137-xxGxx-xLxx	107	12716
1PH7137-xxGxx-xxxx	107	10716
1PH7163-xxBxx-xLxx	107	12717
1PH7163-xxBxx-xxxx	107	10717
1PH7163-xxDxx-xLxx	107	12718

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Table A-2 Motor code for induction motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1PH7163-xxDxx-xxxx	107	10718
1PH7163-xxFxx-xLxx	107	12719
1PH7163-xxFxx-xxxx	107	10719
1PH7163-xxGxx-xLxx	107	12720
1PH7163-xxGxx-xxxx	107	10720
1PH7167-xxBxx-xLxx	107	12721
1PH7167-xxBxx-xxxx	107	10721
1PH7167-xxDxx-xLxx	107	12722
1PH7167-xxDxx-xxxx	107	10722
1PH7167-xxFxx-xLxx	107	12723
1PH7167-xxFxx-xxxx	107	10723
1PH7167-xxGxx-xLxx	107	12724
1PH7167-xxGxx-xxxx	107	10724
1PH7184-xxBxx-xxxx	107	10725
1PH7184-xxDxx-xxxx	107	10735
1PH7184-xxExx-xxxx	107	10727
1PH7184-xxFxx-xxxx	107	10736
1PH7184-xxLxx-xxxx	107	10737
1PH7184-xxTxx-xxxx	107	10726
1PH7186-xxBxx-xxxx	107	10728
1PH7186-xxDxx-xxxx	107	10734
1PH7186-xxExx-xxxx	107	10730
1PH7186-xxFxx-xxxx	107	10740
1PH7186-xxLxx-xxxx	107	10742
1PH7186-xxTxx-xxxx	107	10729
1PH7224-xxBxx-xxxx	107	10743
1PH7224-xxCxx-xxxx	107	10731
1PH7224-xxDxx-xxxx	107	10738
1PH7224-xxFxx-xxxx	107	10732
1PH7224-xxLxx-xxxx	107	10744
1PH7224-xxUxx-xxxx	107	10745
1PH7226-xxBxx-xxxx	107	10746
1PH7226-xxDxx-xxxx	107	10747
1PH7226-xxFxx-xxxx	107	10739
1PH7226-xxLxx-xxxx	107	10748

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Table A-2 Motor code for induction motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1PH7228-xxBxx-xxxx	107	10749
1PH7228-xxDxx-xxxx	107	10750
1PH7228-xxFxx-xxxx	107	10741
1PH7228-xxLxx-xxxx	107	10751
1PH7284-xxBxx-xxxx	107	10752
1PH7284-xxCxx-xxxx	107	10753
1PH7284-xxDxx-xxxx	107	10754
1PH7284-xxFxx-xxxx	107	10755
1PH7286-xxBxx-xxxx	107	10756
1PH7286-xxCxx-xxxx	107	10757
1PH7286-xxDxx-xxxx	107	10758
1PH7286-xxFxx-xxxx	107	10759
1PH7288-xxBxx-xxxx	107	10760
1PH7288-xxCxx-xxxx	107	10761
1PH7288-xxDxx-xxxx	107	10762
1PH7288-xxFxx-xxxx	107	10763
1PL6184-xxBxx-xxxx	166	16600
1PL6184-xxDxx-xxxx	166	16601
1PL6184-xxFxx-xxxx	166	16602
1PL6184-xxLxx-xxxx	166	16603
1PL6186-xxBxx-xxxx	166	16604
1PL6186-xxDxx-xxxx	166	16605
1PL6186-xxFxx-xxxx	166	16606
1PL6224-xxBxx-xxxx	166	16608
1PL6224-xxDxx-xxxx	166	16609
1PL6224-xxFxx-xxxx	166	16610
1PL6224-xxLxx-xxxx	166	16611
1PL6226-xxBxx-xxxx	166	16612
1PL6226-xxDxx-xxxx	166	16614
1PL6226-xxFxx-xxxx	166	16615
1PL6226-xxLxx-xxxx	166	16616
1PL6228-xxBxx-xxxx	166	16617
1PL6228-xxDxx-xxxx	166	16618
1PL6228-xxFxx-xxxx	166	16619
1PL6228-xxLxx-xxxx	166	16620

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Table A-2 Motor code for induction motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1PL6284-xxCxx-xxxx	166	16621
1PL6284-xxDxx-xxxx	166	16622
1PL6284-xxFxx-xxxx	166	16623
1PL6286-xxCxx-xxxx	166	16624
1PL6286-xxDxx-xxxx	166	16626
1PL6286-xxFxx-xxxx	166	16625
1PL6288-xxCxx-xxxx	166	16627
1PL6288-xxDxx-xxxx	166	16628
1PL6288-xxFxx-xxxx	166	16629
1PM4101-xxF8x-xxxx	134	14401
1PM4101-xxF8x-xxxx	134	14402
1PM4101-xxW2x-xxxx	134	13401
1PM4105-xxF8x-xxxx	134	14403
1PM4105-xxF8x-xxxx	134	14404
1PM4105-xxW2x-xxxx	134	13403
1PM4133-xxF8x-xxxx	134	14405
1PM4133-xxF8x-xxxx	134	14406
1PM4133-xxW2x-xxxx	134	13405
1PM4137-xxF8x-xxxx	134	14407
1PM4137-xxF8x-xxxx	134	14408
1PM4137-xxW2x-xxxx	134	13407
1PM6101-xxF8x-xxxx	136	14601
1PM6101-xxF8x-xxxx	136	14602
1PM6105-xxF8x-xxxx	136	14603
1PM6105-xxF8x-xxxx	136	14604
1PM6133-xxF8x-xxxx	136	14605
1PM6133-xxF8x-xxxx	136	14606
1PM6137-xxF8x-xxxx	136	14607
1PM6137-xxF8x-xxxx	136	14608
1PM6138-xxF8x-xxxx	136	14609

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Table A-2 Motor code for induction motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1PM6138-xxF8x-xxxx	136	14610
2SP1253-8xAxx-0xxx	191	19102
2SP1253-8xAxx-0xxx	191	19101
2SP1255-8xAxx-0xxx	191	19103
2SP1255-8xAxx-0xxx	191	19104
DMR160.80.6RIF	1	19901

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Synchronous motors (Version: 2502900)

Table A-3 Motor code for synchronous motors

Order number	Motor type (p0300)	Motor code (p0301)
1FE1051-4WL11-xxxx	261	26103
1FE1051-4WL51-xxxx	261	26104
1FE1051-4WN11-xxxx	261	26105
1FE1051-6WK10-xxxx	261	26106
1FE1051-6WN00-xxxx	261	26107
1FE1051-6WN10-xxxx	261	26108
1FE1051-6WN20-xxxx	261	26109
1FE1051-6WN30-xxxx	261	26110
1FE1052-4WK11-xxxx	261	26111
1FE1052-4WN11-xxxx	261	26112
1FE1052-4WN51-xxxx	261	26113
1FE1052-6LK00-xxxx	261	26114
1FE1052-6WK10-xxxx	261	26115
1FE1052-6WN00-xxxx	261	26116
1FE1052-6WN10-xxxx	261	26117
1FE1052-6WY10-xxxx	261	26118
1FE1053-4WN11-xxxx	261	26119
1FE1054-6LR00-xxxx	261	26120
1FE1054-6WQ10-xxxx	261	26122
1FE1054-6WR10-xxxx	261	26287
1FE1055-6LU00-xxxx	261	26123
1FE1055-6LX00-xxxx	261	26124
1FE1061-6LW00-xxxx	261	26125
1FE1061-6WV10-xxxx	261	26284
1FE1061-6WY10-xxxx	261	26126
1FE1064-6LQ00-xxxx	261	26127
1FE1064-6WN11-xxxx	261	26128
1FE1072-4WH11-xxxx	261	26129
1FE1072-4WL11-xxxx	261	26130
1FE1072-4WN01-xxxx	261	26131
1FE1072-4WN11-xxxx	261	26132
1FE1072-4WN31-xxxx	261	26133
1FE1073-4WL11-xxxx	261	26289
1FE1073-4WN01-xxxx	261	26134

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FE1073-4WN11-xxxx	261	26135
1FE1073-4WR01-xxxx	261	26136
1FE1073-4WT11-xxxx	261	26137
1FE1073-4WT31-xxxx	261	26138
1FE1074-4WM11-xxxx	261	26139
1FE1074-4WN11-xxxx	261	26140
1FE1074-4WN51-xxxx	261	26141
1FE1082-4WN01-xxxx	261	26142
1FE1082-4WN11-xxxx	261	26143
1FE1082-4WN51-xxxx	261	26144
1FE1082-4WP11-xxxx	261	26145
1FE1082-4WR11-xxxx	261	26146
1FE1082-4WR31-xxxx	261	26147
1FE1082-6WE11-xxxx	261	26285
1FE1082-6WP10-xxxx	261	26148
1FE1082-6WQ11-xxxx	261	26149
1FE1082-6WS10-xxxx	261	26150
1FE1082-6WS30-xxxx	261	26151
1FE1082-6WW11-xxxx	261	26152
1FE1083-4WN01-xxxx	261	26153
1FE1083-4WN11-xxxx	261	26154
1FE1084-4WN11-xxxx	261	26155
1FE1084-4WN31-xxxx	261	26156
1FE1084-4WP11-xxxx	261	26157
1FE1084-4WQ11-xxxx	261	26158
1FE1084-4WQ51-xxxx	261	26159
1FE1084-4WT11-xxxx	261	26160
1FE1084-4WT51-xxxx	261	26161
1FE1084-6LN00-xxxx	261	26162
1FE1084-6WN11-xxxx	261	26163
1FE1084-6WR11-xxxx	261	26164
1FE1084-6WX11-xxxx	261	26165
1FE1085-4WN11-xxxx	261	26166
1FE1085-4WQ11-xxxx	261	26167
1FE1085-4WT11-xxxx	261	26168

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FE1091-6WN10-xxxx	261	26169
1FE1091-6WN30-xxxx	261	26170
1FE1091-6WS10-xxxx	261	26171
1FE1092-4WV11-xxxx	261	26172
1FE1092-6WN00-xxxx	261	26173
1FE1092-6WN10-xxxx	261	26174
1FE1092-6WN30-xxxx	261	26175
1FE1092-6WR11-xxxx	261	26176
1FE1093-4WF01-xxxx	261	26177
1FE1093-4WH11-xxxx	261	26178
1FE1093-4WK01-xxxx	261	26179
1FE1093-4WM11-xxxx	261	26180
1FE1093-4WN01-xxxx	261	26181
1FE1093-4WN10-xxxx	261	26182
1FE1093-4WN11-xxxx	261	26183
1FE1093-6WN10-xxxx	261	26184
1FE1093-6WS10-xxxx	261	26185
1FE1093-6WS30-xxxx	261	26186
1FE1093-6WV01-xxxx	261	26286
1FE1093-6WV11-xxxx	261	26187
1FE1093-6WV31-xxxx	261	26188
1FE1093-7LN00-xxxx	261	26189
1FE1094-4LW01-xxxx	261	26190
1FE1094-4WK11-xxxx	261	26191
1FE1094-4WL11-xxxx	261	26192
1FE1094-4WS11-xxxx	261	26193
1FE1094-4WU11-xxxx	261	26243
1FE1095-4WN11-xxxx	261	26194
1FE1095-6LT01-xxxx	261	26195
1FE1095-6WU11-xxxx	261	26290
1FE1096-4WK10-xxxx	261	26196
1FE1096-4WN11-xxxx	261	26197
1FE1103-4WN01-xxxx	261	26245
1FE1103-4WN11-xxxx	261	26198
1FE1103-4WN31-xxxx	261	26199

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FE1103-4WQ01-xxxx	261	26200
1FE1103-4WQ11-xxxx	261	26201
1FE1103-4WT01-xxxx	261	26202
1FE1103-4WT11-xxxx	261	26203
1FE1103-4WU01-xxxx	261	26204
1FE1104-4WN11-xxxx	261	26205
1FE1105-4WN01-xxxx	261	26206
1FE1105-4WN11-xxxx	261	26207
1FE1105-4WQ01-xxxx	261	26208
1FE1105-4WQ11-xxxx	261	26209
1FE1106-4WN11-xxxx	261	26210
1FE1106-4WS11-xxxx	261	26211
1FE1106-4WY11-xxxx	261	26212
1FE1112-6LW01-xxxx	261	26213
1FE1113-6LU01-xxxx	261	26214
1FE1114-6LU11-xxxx	261	26215
1FE1114-6WR11-xxxx	261	26216
1FE1114-6WR31-xxxx	261	26217
1FE1114-6WT10-xxxx	261	26218
1FE1114-6WT11-xxxx	261	26219
1FE1114-6WT31-xxxx	261	26220
1FE1114-6WT51-xxxx	261	26221
1FE1114-6WW11-xxxx	261	26222
1FE1114-6WW31-xxxx	261	26223
1FE1116-6LS01-xxxx	261	26224
1FE1116-6LT01-xxxx	261	26225
1FE1116-6WR11-xxxx	261	26226
1FE1116-6WT11-xxxx	261	26227
1FE1116-6WW11-xxxx	261	26242
1FE1116-6WY11-xxxx	261	26228
1FE1124-4WN11-xxxx	261	26229
1FE1125-4WN11-xxxx	261	26230
1FE1125-4WP11-xxxx	261	26231
1FE1126-4WN11-xxxx	261	26232
1FE1126-4WP11-xxxx	261	26233

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FE1126-4WQ11-xxxx	261	26234
1FE1144-8WT10-xxxx	261	26244
1FE1145-8WN11-xxxx	261	26235
1FE1145-8WS11-xxxx	261	26237
1FE1147-8WN11-xxxx	261	26238
1FE1147-8WQ11-xxxx	261	26239
1FE1147-8WQ31-xxxx	261	26240
1FE1147-8WS11-xxxx	261	26241
1FK6032-6AK7x-xxxx	236	23601
1FK6033-7AK7x-xxxx	236	23602
1FK6040-6AK7x-xxxx	236	23603
1FK6042-6AF7x-xxxx	236	23604
1FK6043-7AH7x-xxxx	236	23605
1FK6043-7AK7x-xxxx	236	23606
1FK6044-7AF7x-xxxx	236	23607
1FK6044-7AH7x-xxxx	236	23608
1FK6060-6AF7x-xxxx	236	23609
1FK6061-7AF7x-xxxx	236	23610
1FK6061-7AH7x-xxxx	236	23611
1FK6063-6AF7x-xxxx	236	23612
1FK6064-7AF7x-xxxx	236	23613
1FK6064-7AH7x-xxxx	236	23614
1FK6080-6AF7x-xxxx	236	23615
1FK6082-7AF7x-xxxx	236	23616
1FK6083-6AF7x-xxxx	236	23617
1FK6085-7AF7x-xxxx	236	23618
1FK6100-8AF7x-xxxx	236	23619
1FK6101-8AF7x-xxxx	236	23620
1FK6103-8AF7x-xxxx	236	23621
1FK7011-5AK2x-xxxx	237	23738
1FK7011-5AK7x-xxxx	237	23747
1FK7015-5AK2x-xxxx	237	23739
1FK7015-5AK7x-xxxx	237	23748
1FK7022-5AK2x-xxxx	237	23733
1FK7022-5AK7x-xxxx	237	23726

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FK7032-5AF2x-xxxx	237	23742
1FK7032-5AK7x-xxxx	237	23727
1FK7033-7AF2x-xxxx	237	23741
1FK7033-7AK7x-xxxx	237	23701
1FK7034-5AF2x-xxxx	237	23740
1FK7034-5AK7x-xxxx	237	23732
1FK7040-5AK7x-xxxx	237	23702
1FK7042-5AF2x-xxxx	237	23735
1FK7042-5AF7x-xxxx	237	23703
1FK7042-5AK7x-xxxx	237	23704
1FK7043-7AF2x-xxxx	237	23743
1FK7043-7AH7x-xxxx	237	23705
1FK7043-7AK7x-xxxx	237	23706
1FK7044-7AF7x-xxxx	237	23707
1FK7044-7AH7x-xxxx	237	23708
1FK7060-5AF7x-xxxx	237	23709
1FK7060-5AH7x-xxxx	237	23710
1FK7061-7AF7x-xxxx	237	23711
1FK7061-7AH7x-xxxx	237	23712
1FK7063-5AF7x-xxxx	237	23713
1FK7063-5AH7x-xxxx	237	23714
1FK7064-7AF7x-xxxx	237	23715
1FK7064-7AH7x-xxxx	237	23716
1FK7080-5AF7x-xxxx	237	23717
1FK7080-5AH7x-xxxx	237	23718
1FK7082-7AF7x-xxxx	237	23719
1FK7083-5AF7x-xxxx	237	23720
1FK7083-5AH7x-xxxx	237	23721
1FK7085-7AF7x-xxxx	237	23722
1FK7086-7AA7x-xxxx	237	23737
1FK7086-7AC7x-xxxx	237	23744
1FK7086-7AF7x-xxxx	237	23731
1FK7086-7SF7x-xxxx	237	23730
1FK7100-5AF7x-xxxx	237	23723
1FK7101-5AC7x-xxxx	237	23745

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FK7101-5AF7x-xxxx	237	23724
1FK7103-5AC7x-xxxx	237	23746
1FK7103-5AF7x-xxxx	237	23725
1FK7105-5AC7x-xxxx	237	23728
1FK7105-5AF7x-xxxx	237	23729
1FS6074-xAC7x-xxxx	276	27601
1FS6074-xAF7x-xxxx	276	27602
1FS6074-xAH7x-xxxx	276	27603
1FS6074-xAK7x-xxxx	276	27604
1FS6096-xAC7x-xxxx	276	27605
1FS6096-xAF7x-xxxx	276	27606
1FS6096-xAH7x-xxxx	276	27607
1FS6115-xAB7x-xxxx	276	27608
1FS6115-xAC7x-xxxx	276	27609
1FS6115-xAF7x-xxxx	276	27610
1FS6134-xAB7x-xxxx	276	27611
1FS6134-xAC7x-xxxx	276	27612
1FS6134-xAF7x-xxxx	276	27613
1FT6021-6AK7x-xxxx	206	20601
1FT6024-6AK7x-xxxx	206	20602
1FT6031-xAK7x-xxxx	206	20603
1FT6034-xAK7x-xxxx	206	20604
1FT6041-xAF7x-xxxx	206	20605
1FT6041-xAK7x-xxxx	206	20606
1FT6044-xAF7x-xxxx	206	20607
1FT6044-xAK7x-xxxx	206	20608
1FT6061-xAC7x-xxxx	206	20609
1FT6061-xAF7x-xxxx	206	20610
1FT6061-xAH7x-xxxx	206	20611
1FT6061-xAK7x-xxxx	206	20612
1FT6062-xAC7x-xxxx	206	20613
1FT6062-xAF7x-xxxx	206	20614
1FT6062-xAH7x-xxxx	206	20615
1FT6062-xAK7x-xxxx	206	20616
1FT6062-xWF7x-xxxx	206	22601

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FT6062-xWH7x-xxxx	206	22602
1FT6062-xWK7x-xxxx	206	22603
1FT6064-xAC7x-xxxx	206	20617
1FT6064-xAF7x-xxxx	206	20618
1FT6064-xAH7x-xxxx	206	20619
1FT6064-xAK7x-xxxx	206	20620
1FT6064-xWF7x-xxxx	206	22604
1FT6064-xWH7x-xxxx	206	22605
1FT6064-xWK7x-xxxx	206	22606
1FT6081-xAC7x-xxxx	206	20621
1FT6081-xAF7x-xxxx	206	20622
1FT6081-xAH7x-xxxx	206	20623
1FT6081-xAK7x-xxxx	206	20624
1FT6082-xAC7x-xxxx	206	20625
1FT6082-xAF7x-xxxx	206	20626
1FT6082-xAH7x-xxxx	206	20627
1FT6082-xAK7x-xxxx	206	20628
1FT6084-xAC7x-xxxx	206	20629
1FT6084-xAF7x-xxxx	206	20630
1FT6084-xAH7x-xxxx	206	20631
1FT6084-xAK7x-xxxx	206	20632
1FT6084-xSF7x-xxxx	206	21601
1FT6084-xSH7x-xxxx	206	21602
1FT6084-xSK7x-xxxx	206	21603
1FT6084-xWF7x-xxxx	206	22607
1FT6084-xWH7x-xxxx	206	22608
1FT6084-xWK7x-xxxx	206	22609
1FT6086-xAC7x-xxxx	206	20633
1FT6086-xAF7x-xxxx	206	20634
1FT6086-xAH7x-xxxx	206	20635
1FT6086-xSF7x-xxxx	206	21604
1FT6086-xSH7x-xxxx	206	21605
1FT6086-xSK7x-xxxx	206	21606
1FT6086-xWF7x-xxxx	206	22610
1FT6086-xWH7x-xxxx	206	22611

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FT6086-xWK7x-xxxx	206	22612
1FT6102-xAB7x-xxxx	206	20636
1FT6102-xAC7x-xxxx	206	20637
1FT6102-xAF7x-xxxx	206	20638
1FT6102-xAH7x-xxxx	206	20639
1FT6105-xAB7x-xxxx	206	20640
1FT6105-xAC7x-xxxx	206	20641
1FT6105-xAF7x-xxxx	206	20642
1FT6105-xSB7x-xxxx	206	21607
1FT6105-xSC7x-xxxx	206	21608
1FT6105-xSF7x-xxxx	206	21609
1FT6105-xSH7x-xxxx	206	21610
1FT6105-xWC7x-xxxx	206	22613
1FT6105-xWF7x-xxxx	206	22614
1FT6108-xAB7x-xxxx	206	20643
1FT6108-xAC7x-xxxx	206	20644
1FT6108-xAF7x-xxxx	206	20645
1FT6108-xSB7x-xxxx	206	21611
1FT6108-xSC7x-xxxx	206	21612
1FT6108-xSF7x-xxxx	206	21613
1FT6108-xWB7x-xxxx	206	22615
1FT6108-xWC7x-xxxx	206	22616
1FT6108-xWF7x-xxxx	206	22617
1FT6132-xAB7x-xxxx	206	20646
1FT6132-xAC7x-xxxx	206	20647
1FT6132-xAF7x-xxxx	206	20648
1FT6132-xSB7x-xxxx	206	21614
1FT6132-xSC7x-xxxx	206	21615
1FT6132-xSF7x-xxxx	206	21616
1FT6132-xWB7x-xxxx	206	22618
1FT6132-xWD7x-xxxx	206	22619
1FT6134-xAB7x-xxxx	206	20649
1FT6134-xAC7x-xxxx	206	20650
1FT6134-xSB7x-xxxx	206	21617
1FT6134-xSC7x-xxxx	206	21618

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FT6134-xSF7x-xxxx	206	21619
1FT6134-xWB7x-xxxx	206	22620
1FT6134-xWD7x-xxxx	206	22621
1FT6136-xAB7x-xxxx	206	20651
1FT6136-xAC7x-xxxx	206	20652
1FT6136-xSB7x-xxxx	206	21620
1FT6136-xSC7x-xxxx	206	21621
1FT6136-xSF7x-xxxx	206	21622
1FT6136-xWB7x-xxxx	206	22622
1FT6136-xWD7x-xxxx	206	22623
1FT6138-xWB7x-xxxx	206	22624
1FT6138-xWD7x-xxxx	206	22625
1FT6163-xSB7x-xxxx	206	21623
1FT6163-xSD7x-xxxx	206	21624
1FT6163-xWB7x-xxxx	206	22626
1FT6163-xWD7x-xxxx	206	22627
1FT6168-xSB7x-xxxx	206	21625
1FT6168-xWB7x-xxxx	206	22628
1FT7042-xAF7x-xxxx	207	20701
1FT7042-xAK7x-xxxx	207	20702
1FT7044-xAF7x-xxxx	207	20703
1FT7044-xAK7x-xxxx	207	20704
1FT7046-xAF7x-xxxx	207	20705
1FT7046-xAH7x-xxxx	207	20732
1FT7062-xAF7x-xxxx	207	20716
1FT7062-xAK7x-xxxx	207	20717
1FT7064-xAF7x-xxxx	207	20720
1FT7064-xAK7x-xxxx	207	20721
1FT7066-xAF7x-xxxx	207	20722
1FT7066-xAH7x-xxxx	207	20733
1FT7068-xAF7x-xxxx	207	20725
1FT7082-xAC7x-xxxx	207	20734
1FT7082-xAF7x-xxxx	207	20709
1FT7082-xAH7x-xxxx	207	20707
1FT7084-xAC7x-xxxx	207	20735

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FT7084-xAF7x-xxxx	207	20711
1FT7084-xAH7x-xxxx	207	20712
1FT7086-xAC7x-xxxx	207	20736
1FT7086-xAF7x-xxxx	207	20714
1FT7086-xAH7x-xxxx	207	20715
1FT7102-xAB7x-xxxx	207	20726
1FT7102-xAC7x-xxxx	207	20737
1FT7102-xAF7x-xxxx	207	20727
1FT7105-xAB7x-xxxx	207	20728
1FT7105-xAC7x-xxxx	207	20738
1FT7105-xAF7x-xxxx	207	20729
1FT7108-xAB7x-xxxx	207	20730
1FT7108-xAC7x-xxxx	207	20739
1FT7108-xWB7x-xxxx	207	20742
1FW3150-1xH7x-xxxx	283	28301
1FW3150-1xL7x-xxxx	283	28302
1FW3150-1xP7x-xxxx	283	28303
1FW3152-1xH7x-xxxx	283	28304
1FW3152-1xL7x-xxxx	283	28305
1FW3152-1xP7x-xxxx	283	28306
1FW3154-1xH7x-xxxx	283	28307
1FW3154-1xL7x-xxxx	283	28308
1FW3154-1xP7x-xxxx	283	28309
1FW3155-1xH7x-xxxx	283	28310
1FW3155-1xL7x-xxxx	283	28311
1FW3155-1xP7x-xxxx	283	28312
1FW3156-1xH7x-xxxx	283	28313
1FW3156-1xL7x-xxxx	283	28314
1FW3156-1xP7x-xxxx	283	28315
1FW3201-1xE7x-xxxx	283	28316
1FW3201-1xH7x-xxxx	283	28317
1FW3201-1xL7x-xxxx	283	28318
1FW3202-1xE7x-xxxx	283	28319
1FW3202-1xH7x-xxxx	283	28320
1FW3202-1xL7x-xxxx	283	28321

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FW3203-1xE7x-xxxx	283	28322
1FW3203-1xH7x-xxxx	283	28323
1FW3203-1xL7x-xxxx	283	28324
1FW3204-1xE7x-xxxx	283	28325
1FW3204-1xH7x-xxxx	283	28326
1FW3204-1xL7x-xxxx	283	28327
1FW3206-1xE7x-xxxx	283	28328
1FW3206-1xH7x-xxxx	283	28329
1FW3206-1xL7x-xxxx	283	28330
1FW3208-1xE7x-xxxx	283	28331
1FW3208-1xH7x-xxxx	283	28332
1FW3208-1xL7x-xxxx	283	28333
1FW3281-1xE7x-xxxx	283	28334
1FW3281-1xG7x-xxxx	283	28335
1FW3283-1xE7x-xxxx	283	28336
1FW3283-1xG7x-xxxx	283	28337
1FW3285-1xE7x-xxxx	283	28338
1FW3285-1xG7x-xxxx	283	28339
1FW3288-1xE7x-xxxx	283	28340
1FW3288-1xG7x-xxxx	283	28341
1FW6090-0xx05-0Fxx	286	28601
1FW6090-0xx05-0Kxx	286	28602
1FW6090-0xx07-0Kxx	286	28603
1FW6090-0xx07-1Jxx	286	28604
1FW6090-0xx10-0Kxx	286	28605
1FW6090-0xx10-1Jxx	286	28606
1FW6090-0xx15-1Jxx	286	28607
1FW6090-0xx15-2Jxx	286	28608
1FW6130-0xx05-0Kxx	286	28620
1FW6130-0xx05-1Jxx	286	28621
1FW6130-0xx07-0Kxx	286	28622
1FW6130-0xx07-1Jxx	286	28623
1FW6130-0xx10-1Jxx	286	28624
1FW6130-0xx10-2Jxx	286	28625
1FW6130-0xx15-1Jxx	286	28626

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Table A-3 Motor code for synchronous motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FW6130-0xx15-2Jxx	286	28627
1FW6160-0xx05-1Jxx	286	28628
1FW6160-0xx05-2Jxx	286	28629
1FW6160-0xx07-1Jxx	286	28630
1FW6160-0xx07-2Jxx	286	28631
1FW6160-0xx10-1Jxx	286	28632
1FW6160-0xx10-2Jxx	286	28633
1FW6160-0xx15-2Jxx	286	28634
1FW6160-0xx15-5Gxx	286	28635
1FW6190-0xx05-1Jxx	286	28636
1FW6190-0xx05-2Jxx	286	28637
1FW6190-0xx07-1Jxx	286	28638
1FW6190-0xx07-2Jxx	286	28639
1FW6190-0xx10-1Jxx	286	28640
1FW6190-0xx10-2Jxx	286	28641
1FW6190-0xx15-2Jxx	286	28609
1FW6190-0xx15-5Gxx	286	28610
1FW6230-0xx05-1Jxx	286	28611
1FW6230-0xx05-2Jxx	286	28612
1FW6230-0xx07-1Jxxx	286	28613
1FW6230-0xx07-2Jxx	286	28614
1FW6230-0xx10-2Jxx	286	28615
1FW6230-0xx10-5Gxx	286	28616
1FW6230-0xx15-4Cxx	286	28617
1FW6230-0xx15-5Gxx	286	28618
1FW6290-0xx15-7Axx	286	28619
2SP1202-1HAxx-xxxx	291	29101
2SP1202-1HBxx-xxxx	291	29102
2SP1204-1HAxx-xxxx	291	29103
2SP1204-1HBxx-xxxx	291	29104
2SP1253-1xAxx-xxxx	291	29105
2SP1253-1xBxx-xxxx	291	29106
2SP1255-1xAxx-xxxx	291	29107
2SP1255-1xBxx-xxxx	291	29108

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Linear motors (Version: 2502900)

Table A-4 Motor code for linear motors

Order number	Motor type (p0300)	Motor code (p0301)
1FN1072-3xF7x-xxxx	401	40131
1FN1076-3xF7x-xxxx	401	40132
1FN1122-5xC7x-xxxx	401	40103
1FN1122-5xF7x-xxxx	401	40121
1FN1124-5xC7x-xxxx	401	40101
1FN1124-5xF7x-xxxx	401	40123
1FN1126-5xC7x-xxxx	401	40104
1FN1126-5xF7x-xxxx	401	40122
1FN1184-5xC7x-xxxx	401	40102
1FN1184-5xF7x-xxxx	401	40124
1FN1186-5xC7x-xxxx	401	40105
1FN1186-5xF7x-xxxx	401	40125
1FN1244-5xC7x-xxxx	401	40106
1FN1244-5xF7x-xxxx	401	40126
1FN1246-5xC7x-xxxx	401	40107
1FN1246-5xF7x-xxxx	401	40127
1FN3050-1ND0x-xxxx	403	41301
1FN3050-2NB8x-xxxx	403	41302
1FN3050-2WC0x-xxxx	403	40349
1FN3100-1NC0x-xxxx	403	41303
1FN3100-1WC0x-xxxx	403	40341
1FN3100-2NC8x-xxxx	403	41304
1FN3100-2WC0x-xxxx	403	40302
1FN3100-2WE0x-xxxx	403	40303
1FN3100-3NC0x-xxxx	403	41305
1FN3100-3WC0x-xxxx	403	40342
1FN3100-3WE0x-xxxx	403	40304
1FN3100-4NC8x-xxxx	403	41306
1FN3100-4WC0x-xxxx	403	40305
1FN3100-4WE0x-xxxx	403	40306
1FN3100-5WC0x-xxxx	403	40307
1FN3150-1NC2x-xxxx	403	41307
1FN3150-1WC0x-xxxx	403	40308
1FN3150-1WE0x-xxxx	403	40309

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Table A-4 Motor code for linear motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FN3150-2NB8x-xxxx	403	41308
1FN3150-2WC0x-xxxx	403	40310
1FN3150-3NC7x-xxxx	403	41309
1FN3150-3WC0x-xxxx	403	40311
1FN3150-4NB8x-xxxx	403	41310
1FN3150-4WC0x-xxxx	403	40312
1FN3150-5WC0x-xxxx	403	40313
1FN3300-1NC1x-xxxx	403	41311
1FN3300-1WC0x-xxxx	403	40343
1FN3300-2NC1x-xxxx	403	41312
1FN3300-2WB0x-xxxx	403	40314
1FN3300-2WC0x-xxxx	403	40315
1FN3300-2WG0x-xxxx	403	40316
1FN3300-3NC4x-xxxx	403	41313
1FN3300-3WC0x-xxxx	403	40317
1FN3300-3WG0x-xxxx	403	40318
1FN3300-4NB8x-xxxx	403	41314
1FN3300-4WB0x-xxxx	403	40319
1FN3300-4WC0x-xxxx	403	40320
1FN3450-2NC5x-xxxx	403	41315
1FN3450-2WA5x-xxxx	403	40344
1FN3450-2WC0x-xxxx	403	40321
1FN3450-2WE0x-xxxx	403	40322
1FN3450-3NC5x-xxxx	403	41316
1FN3450-3WA5x-xxxx	403	40345
1FN3450-3WB0x-xxxx	403	40323
1FN3450-3WB5x-xxxx	403	40324
1FN3450-3WC0x-xxxx	403	40325
1FN3450-3WE0x-xxxx	403	40326
1FN3450-4NB8x-xxxx	403	41317
1FN3450-4WB0x-xxxx	403	40327
1FN3450-4WB5x-xxxx	403	40328
1FN3450-4WC0x-xxxx	403	40329
1FN3450-4WE0x-xxxx	403	40330
1FN3600-2NB8x-xxxx	403	41318

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Table A-4 Motor code for linear motors, continued

Order number	Motor type (p0300)	Motor code (p0301)
1FN3600-2WA5x-xxxx	403	40346
1FN3600-3NB8x-xxxx	403	41319
1FN3600-3WB0x-xxxx	403	40331
1FN3600-3WC0x-xxxx	403	40332
1FN3600-4NB8x-xxxx	403	41320
1FN3600-4WA3x-xxxx	403	40347
1FN3600-4WB0x-xxxx	403	40333
1FN3600-4WB5x-xxxx	403	40334
1FN3600-4WC0x-xxxx	403	40335
1FN3900-2NB2x-xxxx	403	41321
1FN3900-2WB0x-xxxx	403	40336
1FN3900-2WC0x-xxxx	403	40337
1FN3900-3NB2x-xxxx	403	41322
1FN3900-3WB0x-xxxx	403	40348
1FN3900-4NB2x-xxxx	403	41323
1FN3900-4WB0x-xxxx	403	40338
1FN3900-4WB5x-xxxx	403	40339
1FN3900-4WC0x-xxxx	403	40340

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A.2.2 Encoder code

1FK6 encoders

Table A-5 Encoder code for 1FK6 encoders

Order number	Encoder code (p0400)	Comments
1FK6xxx-xxxxx-xAxx	2001	-
1FK6xxx-xxxxx-xExx	2051	-
1FK6xxx-xxxxx-xGxx	2052	-
1FK6xxx-xxxxx-xHxx	2053	-
1FK6xxx-xxxxx-xJxx	2054	-
1FK6xxx-xxxxx-xSxx	1002 1003 1004	4p (2-speed) 6p (3-speed) 8p (4-speed) The pole number of the resolver corresponds to the pole number of the motor (see catalog).
1FK6xxx-xxxxx-xTxx	1001	-

1FK7 encoders

Table A-6 Encoder code for 1FK7 encoders

Order number	Encoder code (p0400)	Comments
1FK7xxx-xxxxx-xAxx	2001	-
1FK7xxx-xxxxx-xExx	2051	-
1FK7xxx-xxxxx-xGxx	2052	-
1FK7xxx-xxxxx-xHxx	2053	-
1FK7xxx-xxxxx-xJxx	2054	-
1FK7xxx-xxxxx-xSxx	1002 1003 1004	4p (2-speed) 6p (3-speed) 8p (4-speed) The pole number of the resolver corresponds to the pole number of the motor (see catalog).
1FK7xxx-xxxxx-xTxx	1001	-

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1FS6 encoders

Table A-7 Encoder code for 1FS6 encoders

Order number	Encoder code (p0400)	Comments
1FS6xxx-xxxxx-xAxx	2001	-
1FS6xxx-xxxxx-xExx	2051	-

1FT6 encoders

Table A-8 Encoder code for 1FT6 encoders

Order number	Encoder code (p0400)	Comments
1FT6xxx-xxxxx-xAxx	2001	-
1FT6xxx-xxxxx-xExx	2051	-
1FT6xxx-xxxxx-xHxx	2053	-
1FT6xxx-4xxxx-xSxx	1002	4p (2-speed)
1FT6xxx-6xxxx-xSxx	1003	6p (3-speed)
1FT6xxx-8xxxx-xSxx	1004	8p (4-speed)
1FT6xxx-xxxxx-xTxx	1001	-

1FW3 encoders

Table A-9 Encoder code for 1FW3 encoders

Order number	Encoder code (p0400)	Comments
1FW3xxx-xAxxx-xxxx	2001	-
1FW3xxx-xExxx-xxxx	2051	-
1FW3xxx-xGxxx-xxxx	2052	-
1FW3xxx-xSxxx-xxxx	1003	-

1PH4 encoders

Table A-10 Encoder code for 1PH4 encoders

Order number	Encoder code (p0400)	Comments
1PH4xxx-xNxxx-xxxx	2002	-

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1PH7 encoders

Table A-11 Encoder code for 1PH7 encoders

Order number	Encoder code (p0400)	Comments
1PH7xxx-xExxx-xxxx	2051	-
1PH7xxx-xHxxx-xxxx	3002	-
1PH7xxx-xJxxx-xxxx	3003	-
1PH7xxx-xMxxx-xxxx	2001	-
1PH7xxx-xNxxx-xxxx	2002	-
1PH7xxx-xRxxx-xxxx	1001	-

1PM4 encoders

Table A-12 Encoder code for 1PM4 encoders

Order number	Encoder code (p0400)	Comments
1PM4xxx-xGxxx-xxxx	2002	-
1PM4xxx-xLxxx-xxxx	2003	-

1PM6 encoders

Table A-13 Encoder code for 1PM6 encoders

Order number	Encoder code (p0400)	Comments
1PM6xxx-xGxxx-xxxx	2002	-
1PM6xxx-xLxxx-xxxx	2003	-

2SP1 encoders

Table A-14 Encoder code for 2SP1 encoders

Order number	Encoder code (p0400)	Comments
2SP1xxx-xHxxx-xxxx	2003	-

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List of abbreviations

B

Note:

The following list of abbreviations contains the abbreviations and their meanings used in the entire SINAMICS user documentation.

Abbreviation	German	English
A		
A...	Warnung	Alarm
AC	Wechselstrom	Alternating current
ADC	Analog-Digital-Konverter	Analog Digital Converter
AI	Analogeingang	Analog Input
AIM	Active Interface Module	Active Interface Module
ALM	Active Line Module	Active Line Module
AO	Analogausgang	Analog Output
AOP	Advanced Operator Panel	Advanced Operator Panel
APC	Advanced Positioning Control	Advanced Positioning Control
ASC	Ankerkurzschluss	Armature Short-Circuit
ASCII	Amerikanische Code-Norm für den Informationsaustausch	American Standard Code for Information Interchange
ASM	Asynchronmotor	Induction motor
B		
BB	Betriebsbedingung	Operating condition
BERO	Firmenname für einen Näherungsschalter	Tradename for a type of proximity switch
BI	Binektoreingang	Binector input
BIA	Berufsgenossenschaftliches Institut für Arbeitssicherheit	German Institute for Occupational Safety
BICO	Binektor-Konnektor-Technologie	Binector Connector Technology
BLM	Basic Line Module	Basic Line Module
BO	Binektorausgang	Binector Output
BOP	Basic Operator Panel	Basic Operator Panel
C		
C	Kapazität	Capacitance
C...	Safety-Meldung	Safety message
CAN	Serielles Bussystem	Controller Area Network
CBC	Kommunikationsbaugruppe CAN	Communication Board CAN

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Abbreviation	German	English
CD	Compact Disc	Compact Disc
CDS	Befehlsdatensatz	Command Data Set
CF	Compact Flash	Compact Flash
CI	Konnektoreingang	Connector Input
CNC	Computerunterstützte numerische Steuerung	Computer Numerical Control
CO	Konnektorausgang	Connector Output
CO/BO	Konnektor-/Binektorausgang	Connector Output/Binector Output
COB-ID	CAN Object-Identification	CAN Object-Identification
COM	Mittelkontakt eines Wechselkontaktes	Common contact of a change-over relay
CP	Kommunikationsprozessor	Communications Processor
CPU	Zentrale Recheneinheit	Central Processing Unit
CRC	Zyklische Redundanzprüfung	Cyclic Redundancy Check
CSM	Control Supply Module	Control Supply Module
CU	Control Unit	Control Unit
D		
DAC	Digital-Analog-Konverter	Digital Analog Converter
DC	Gleichstrom	Direct Current
DCB	Drive Control Block	Drive Control Block
DCC	Drive Control Chart	Drive Control Chart
DCN	Gleichstrom negativ	Direct Current Negative
DCP	Gleichstrom positiv	Direct Current Positive
DDS	Antriebsdatensatz	Drive Data Set
DI	Digitaleingang	Digital Input
DI/DO	Digitaleingang/-ausgang bidirektional	Bidirectional Digital Input/Output
DMC	DRIVE-CLiQ Module Cabinet (Hub)	DRIVE-CLiQ Module Cabinet (Hub)
DO	Digitalausgang	Digital Output
DO	Antriebsobjekt	Drive Object
DP	Dezentrale Peripherie	Distributed I/Os
DPRAM	Speicher mit beidseitigem Zugriff	Dual-Port Random Access Memory
DRAM	Dynamischer Speicher	Dynamic Random Access Memory
DRIVE-CLiQ	Drive Component Link with IQ	Drive Component Link with IQ
DSC	Dynamic Servo Control	Dynamic Servo Control
E		
EASC	Externer Ankerkurzschluss	External Armature Short-Circuit
EDS	Geberdatensatz	Encoder Data Set
EGB	Elektrostatisch gefährdete Baugruppen	Electrostatic Sensitive Devices (ESD)
ELP	Erdschlussüberwachung	Earth Leakage Protection
EMK	Elektromagnetische Kraft	Electromagnetic Force (EMF)
EMV	Elektromagnetische Verträglichkeit	Electromagnetic Compatibility (EMC)
EN	Europäische Norm	European Standard

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Abbreviation	German	English
EnDat	Geber-Schnittstelle	Encoder-Data-Interface
EP	Impulsfreigabe	Enable Pulses
EPOS	Einfachpositionierer	Basic positioner
ES	Engineering System	Engineering System
ESB	Ersatzschaltbild	Equivalent circuit diagram
ESR	Erweitertes Stillsetzen und Rückziehen	Extended Stop and Retract
F		
F...	Störung	Fault
FAQ	Häufig gestellte Fragen	Frequently Asked Questions
FBL	Freie Funktionsblöcke	Free Blocks
FCC	Function Control Chart	Function Control Chart
FCC	Flussstromregelung	Flux Current Control
F-DI	Fehlersicherer Digitaleingang	Failsafe Digital Input
F-DO	Fehlersicherer Digitalausgang	Failsafe Digital Output
FEM	Fremderregter Synchronmotor	Separately excited synchronous motor
FEPROM	Schreib- und Lesespeicher nichtflüchtig	Flash-EPROM
FG	Funktionsgenerator	Function Generator
FI	Fehlerstrom-Schutzschalter	Residual-Current Circuit-Breaker (RCCB)
FP	Funktionsplan	Function diagram
FPGA	Field Programmable Gate Array	Field Programmable Gate Array
FW	Firmware	Firmware
G		
GB	Gigabyte	Gigabyte
GC	Global-Control-Telegramm (Broadcast-Telegramm)	Global Control Telegram (Broadcast Telegram)
GSD	Gerätestammdatei: beschreibt die Merkmale eines PROFIBUS-Slaves	Device master file: describes the features of a PROFIBUS slave
GSV	Gate Supply Voltage	Gate Supply Voltage
GUID	Globally Unique Identifier	Globally Unique Identifier
H		
HF	Hochfrequenz	High Frequency
HFD	Hochfrequenzdrossel	High Frequency Reactor
HLG	Hochlaufgeber	Ramp-function generator
HMI	Mensch-Maschine-Schnittstelle	Human Machine Interface
HTL	Logik mit hoher Störschwelle	High-Threshold Logic
HW	Hardware	Hardware
I		
i. V.	In Vorbereitung: diese Eigenschaft steht zur Zeit nicht zur Verfügung	In preparation: this feature is currently not available
I/O	Eingang/Ausgang	Input/Output
I2C	Serieller interner Datenbus	Inter Integrated Circuit
IASC	Interner Ankerkurzschluss	Internal Armature Short-Circuit

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Abbreviation	German	English
IBN	Inbetriebnahme	Commissioning
ID	Identifizierung	Identifier
IEC	Internationale Norm in der Elektrotechnik	International Electrotechnical Commission
IF	Interface	Interface
IGBT	Bipolartransistor mit isolierter Steuerelektrode	Insulated Gate Bipolar Transistor
IGCT	Halbleiter-Leistungsschalter mit integrierter Steuerelektrode	Integrated Gate-Controlled Thyristor
IL	Impulslöschung	Pulse suppression
IP	Internet Protokoll	Internet Protocol
IPO	Interpolatortakt	Interpolator clock
IT	Drehstromversorgungsnetz ungeerdet	Insulated three-phase supply network
IVP	Interner Spannungsschutz	Internal Voltage Protection
J		
JOG	Tippen	Jogging
K		
KDV	Kreuzweiser Datenvergleich	Data cross-checking
KIP	Kinetische Pufferung	Kinetic buffering
Kp	Proportionalverstärkung	Proportional gain
KTY	Spezieller Temperatursensor	Special temperature sensor
L		
L	Induktivität	Inductance
LED	Leuchtdiode	Light Emitting Diode
LIN	Linearmotor	Linear motor
LR	Lageregler	Position controller
LSB	Niederstwertiges Bit	Least Significant Bit
LSS	Netzschalter	Line Side Switch
LU	Längeneinheit	Length Unit
LWL	Lichtwellenleiter	Fiber-optic cable
M		
M	Masse	Reference potential, zero potential
MB	Megabyte	Megabyte
MCC	Motion Control Chart	Motion Control Chart
MDS	Motordatensatz	Motor Data Set
MLFB	Maschinenlesbare Fabrikatebezeichnung	Machine-readable product designation
MMC	Mensch Maschine Kommunikation	Man-Machine Communication
MSB	Höchstwertiges Bit	Most Significant Bit
MSCY_C1	Zyklische Kommunikation zwischen Master (Klasse 1) und Slave	Master Slave Cycle Class 1
MSC	Motorstromrichter	Motor power converter
MT	Messtaster	Measuring probe

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Abbreviation	German	English
N		
N. C.	Nicht angeschlossen	Not Connected
N...	Keine Meldung oder Interne Meldung	No Report
NAMUR	Normenarbeitsgemeinschaft für Mess- und Regeltechnik in der chemischen Industrie	Standardization association for instrumentation and control in the chemical industry
NC	Öffner	Normally Closed (contact)
NC	Numerische Steuerung	Numerical Control
NEMA	Normengremium in USA (United States of America)	National Electrical Manufacturers Association
NM	Nullmarke	Zero Mark
NO	Schließer	Normally Open (contact)
NSR	Netzstromrichter	Line side converter (LSC)
O		
OA	Open Architecture	Open Architecture
OEM	Original Equipment Manufacturer	Original Equipment Manufacturer
OLP	Busstecker für Lichtleiter	Optical Link Plug
OMI	Option Module Interface	Option Module Interface
P		
p...	Einstellparameter	Adjustable parameter
PB	PROFIBUS	PROFIBUS
PcCtrl	Steuerungshoheit	Master Control
PD	PROFIdrive	PROFIdrive
PDS	Leistungsteildatensatz	Power unit Data Set
PE	Schutzerde	Protective Earth
PELV	Schutzkleinspannung	Protective Extra Low Voltage
PEM	Permanenterregter Synchronmotor	Permanent-magnet synchronous motor
PG	Programmiergerät	Programming terminal
PI	Proportional Integral	Proportional Integral
PID	Proportional Integral Differential	Proportional Integral Differential
PLC	Speicherprogrammierbare Steuerung (SPS)	Programmable Logic Controller
PLL	Phase-Locked Loop	Phase-Locked Loop
PN	PROFINET	PROFINET
PNO	PROFIBUS Nutzerorganisation	PROFIBUS user organisation
PPI	Punkt zu Punkt Schnittstelle	Point to Point Interface
PRBS	Weißes Rauschen	Pseudo Random Binary Signal
PROFIBUS	Serieller Datenbus	Process Field Bus
PS	Stromversorgung	Power Supply
PSA	Power Stack Adapter	Power Stack Adapter
PTC	Positiver Temperaturkoeffizient	Positive Temperature Coefficient
PTP	Punkt zu Punkt	Point-To-Point
PWM	Pulsweitenmodulation	Pulse Width Modulation
PZD	PROFIBUS Prozessdaten	PROFIBUS process data

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Abbreviation	German	English
Q		
R		
r...	Beobachtungsparameter (nur lesbar)	Display parameter (read only)
RAM	Speicher zum Lesen und Schreiben	Random Access Memory
RCCB	Fehlerstrom-Schutzschalter	Residual Current Circuit Breaker
RCD	Fehlerstrom-Schutzschalter	Residual Current Device
RJ45	Norm. Beschreibt eine 8-polige Steckverbindung mit Twisted-Pair Ethernet.	Standard. Describes an 8-pole plug connector with twisted pair Ethernet.
RKA	Rückkühlanlage	Cooling unit
RO	Nur lesbar	Read Only
RPDO	Receive Process Data Object	Receive Process Data Object
RS232	Serielle Schnittstelle	Serial Interface
RS485	Norm. Beschreibt die Physik einer digitalen seriellen Schnittstelle.	Standard. Describes the physical characteristics of a digital serial interface.
RTC	Echtzeituhr	Real Time Clock
RZA	Raumzeigerapproximation	Space vector approximation (SVA)
S		
S1	Dauerbetrieb	Continuous operation
S3	Aussetzbetrieb	Periodic duty
SBC	Sichere Bremsenansteuerung	Safe Brake Control
SBH	Sicherer Betriebshalt	Safe operating stop
SBR	Sichere Beschleunigungsüberwachung	Safe Acceleration Monitor
SBT	Sicherer Bremsentest	Safe Brake Test
SCA	Sicherer Nocken	Safe Cam
SDI	Sichere Richtung	Safe Direction
SE	Sicherer Software-Endschalter	Safe software limit switch
SG	Sicher reduzierte Geschwindigkeit	Safely reduced speed
SGA	Sicherheitsgerichteter Ausgang	Safety-related output
SGE	Sicherheitsgerichteter Eingang	Safety-related input
SH	Sicherer Halt	Safe standstill
SP	Safety Integrated	Safety Integrated
SIL	Sicherheitsintegritätsgrad	Safety Integrity Level
SLI	Sicheres Schrittmaß	Safely Limited Increment
SLM	Smart Line Module	Smart Line Module
SLP	Sicher begrenzte Position	Safely-Limited Position
SLS	Sicher begrenzte Geschwindigkeit	Safely-Limited Speed
SLVC	Geberlose Vektorregelung	Sensorless Vector Control
SM	Sensor Module	Sensor Module
SMC	Sensor Module Cabinet	Sensor Module Cabinet
SME	Sensor Module External	Sensor Module External
SN	Sicherer Software-Nocken	Safe software cam
SOS	Sicherer Betriebshalt	Safe Operating Stop

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Abbreviation	German	English
SP	Service Pack	Service Pack
SPC	Sollwertkanal	Setpoint Channel
SPI	Serielle Schnittstelle für Peripherieanbindung	Serial Peripheral Interface
SPS	Speicherprogrammierbare Steuerung	Programmable Logic Controller (PLC)
SS1	Sicherer Stop 1	Safe Stop 1
SS2	Sicherer Stop 2	Safe Stop 2
SSI	Synchron Serielle Schnittstelle	Synchronous Serial Interface
SSM	Sichere Rückmeldung der Geschwindigkeitsüberwachung (n < nx)	Safe Speed Monitor
SSR	Sichere Bremsrampe	Safe Stop Ramp
STO	Sicher abgeschaltetes Moment	Safe Torque Off
STW	PROFIdrive Steuerwort	PROFIdrive control word
T		
TB	Terminal Board	Terminal Board
TIA	Totally Integrated Automation	Totally Integrated Automation
TM	Terminal Module	Terminal Module
TN	Drehstromversorgungsnetz geerdet	Grounded three-phase supply network
Tn	Nachstellzeit	Integral time
TPDO	Transmit Process Data Object	Transmit Process Data Object
TT	Drehstromversorgungsnetz geerdet	Grounded three-phase supply network
TTL	Transistor-Transistor-Logik	Transistor-Transistor Logic
Tv	Vorhaltezeit	Derivation-action time
U		
UL	Underwriters Laboratories Inc.	Underwriters Laboratories Inc.
USV	Unterbrechungsfreie Stromversorgung	Uninterruptible power supply
V		
VC	Vektorregelung	Vector Control
Vdc	Zwischenkreisspannung	DC link voltage
VdcN	Teilzwischenkreisspannung negativ	Partial DC link voltage negative
VdcP	Teilzwischenkreisspannung positiv	Partial DC link voltage positive
VDE	Verband Deutscher Elektrotechniker	Association of German Electrical Engineers
VDI	Verein Deutscher Ingenieure	Association of German Engineers
Vpp	Volt Spitze zu Spitze	Volt peak to peak
VSM	Voltage Sensing Module	Voltage Sensing Module
W		
WEA	Wiedereinschaltautomatik	Automatic restart
WZM	Werkzeugmaschine	Machine tool
X		
XML	Erweiterbare Auszeichnungssprache (Standardsprache für Web-Publishing und Dokumentenmanagement)	Extensible Markup Language

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Abbreviation	German	English
Y		
Z		
ZK	Zwischenkreis	DC Link
ZSW	PROFIdrive Zustandswort	PROFIdrive status word

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References

C

SINAMICS documentation

Catalogs

/D11.1/ **SINAMICS G110/SINAMICS G120 Inverter Chassis Units**
SINAMICS G120D Distributed Frequency Inverters
Order number: E86060-K5511-A111-A4 Edition: 04/2007

/D11/ **SINAMICS G130 Drive Converter Chassis Units**
SINAMICS G150 Drive Converter Cabinet Units
Order no.: E86060-K5511-A101-A3 Edition: 12/2005

/D21.1/ **SINAMICS S120 Chassis Units**
Order No.: E86060-K5521-A111-A2 Edition: 06/2006

/D21.3/ **SINAMICS S150 Converter Cabinet Units**
75 kW to 1200 kW
Ordner No.: E86060-K5521-A131-A1 Edition: 05/2004

Related catalogs

/ST70/ **SIMATIC Products for Totally Integrated Automation**
Ordering information
Ordner No.: E86060-K4670-A101-B1 Edition: 09/2006

/PM10/ **SIMOTION Motion Control System**
Ordering information
Order No.: E86060-K4910-A101-A5 Edition: 07/2005

/PM10N/ **SIMOTION Motion Control System, (Catalog News)**
Ordering information
Order number: E86060-K4910-A111-A1 Edition: 11/2006

/NC61/ **SINUMERIK & SINAMICS**
Automation Systems for Machine Tools
Ordering information
Order no.: E86060-K4461-A101-A2 Edition: 08/2007

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Interactive catalogs

/CA01/ **Automation and Drives' Offline Mall**
CD-ROM
Ordner No.: E86060-D4001-A100-C5 Edition: 10/2006

/Mall/ **A&D Mall, Catalog and Online Ordering System**
http://www.siemens.com/automation/mall

Electronic documentation

/CD2/ **SINAMICS DOCONCD**
The SINAMICS System
Order no.: 6SL3097-2CA00-0YG5 Edition: 07/2007

User Documentation

/BA1/ **SINAMICS G150**
Operating instructions
Order number: On request Edition: 07/2007

/BA2/ **SINAMICS G130**
Operating instructions
Order number: On request Edition: 07/2007

/BA3/ **SINAMICS S150**
Operating instructions
Order number: On request Edition: 07/2007

/GH1/ **SINAMICS S120**
Equipment Manual for Control Units and Additional System Components
Order number: 6SL3097-2AH00-0?P4 Edition: 03/2007

/GH2/ **SINAMICS S120**
Equipment Manual for Booksize Power Units
Order number: 6SL3097-2AC00-0?P4 Edition: 03/2007

/GH3/ **SINAMICS S120**
Equipment Manual for Chassis Power Units
Order number: 6SL3097-2AE00-0?P2 Edition: 07/2007

/GH4/ **SINAMICS S120**
Equipment Manual Power Modules Booksize Cold-Plate
Order number: 6SL3097-2AJ00-0?P4 Edition: 03/2007

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/GH5/ **SINAMICS S120**
Equipment Manual Cabinet Modules
Order number: On request Edition: 07/2007

/GH6/ **SINAMICS S120**
Equipment Manual AC Drive
Order number: 6SL3097-2AL00-0?P2 Edition: 07/2007

/GH7/ **SINAMICS S120**
Equipment Manual for Chassis Liquid Cooled Power Units
Order number: 6SL3097-2AM00-0?P2 Edition: 04/2007

/GS1/ **SINAMICS S120**
Getting Started
Order number: 6SL3097-2AG00-0?P2 Edition: 03/2006

/IH1/ **SINAMICS S120**
Commissioning Manual
Order number: 6SL3097-2AF00-0?P7 Edition: 07/2007

/IH2/ **SINAMICS S120**
Commissioning Manual for CANopen
Order number: 6SL3097-2AA00-0?P2 Edition: 03/2006

/FH1/ **SINAMICS S120**
Function Manual Drive Functions
Order number: 6SL3097-2AB00-0?P4 Edition: 07/2007

/FHS/ **SINAMICS S120**
Function Manual Safety Integrated
Order number: 6SL3097-2AR00-0?P0 Edition: 07/2007

/FH4/ **SINAMICS / SIMOTION**
Function Manual DCC Standard Blocks
Order number: 6SL3097-2AQ00-0?P1 Edition: 07/2007

/PB1/ **SINAMICS / SIMOTION**
Programming and Operating Manual DCC Editor Description
Order number: 6SL3097-2AN00-0?P1 Edition: 07/2007

/LH1/ **SINAMICS S**
List Manual
Order number: 6SL3097-2AP00-0?P6 Edition: 07/2007

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/PFK7S/ **SINAMICS 1FK7 Synchronous Motors**
Configuration Manual
Order number: 6SN1197-0AD16-0?P1 Edition: 12/2006

/PFT6S/ **SINAMICS 1FT6 Synchronous Motors**
Configuration Manual
Order number: 6SN1197-0AD12-0?P0 Edition: 12/2004

/PFT7S/ **SINAMICS Synchronous Motors 1FT7**
Configuration Manual
Order number: 6SN1197-0AD13-0?P0 Edition: 04/2007

/APH7P/ **SINAMICS Induction Motors 1PH7**
Configuration Manual Production Machines
Order number: 6SN1197-0AC71-0?P0 Edition: 05/2007

/PKTS/ **SINAMICS Complete Torque Motors 1FW3**
Configuration Manual
Order number: 6SN1197-0AD70-0?P0 Edition: 07/2007

/PMH2/ **SINAMICS Hollow-Shaft Measuring System SIMAG H2**
Configuration Manual
Order number: 6SN1197-0AB31-0?P5 Edition: 04/2007

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PROFIBUS documentation

/P1/ **PROFIBUS-DP/DPV1 IEC 61158**
Basics, tips and tricks for users
Hüthig; Manfred Popp, 2. Auflage

ISBN 3-7785-2781-9

/P2/ **PROFIBUS-DP, Getting Started**
PROFIBUS Nutzerorganisation e.V.; Manfred Popp

Ordner No.: 4.071

/P3/ **Distributed Layouts using PROFIBUS-DP**
Architecture and Fundamentals, Configuration and Use of PROFIBUS-DP with SIMATIC S7
SIEMENS; Publicis MCD Verlag; Josef Weigmann, Gerhard Kilian

Order No.: A19100-L531-B714
ISBN 3-89578-074-X

/P4/ **Manual for PROFIBUS Networks, SIEMENS**

Ordner No.: 6GK1970-5CA20-0BA0

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Documentation for Safety Equipment

Note

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The following list contains some of the safety-related documentation available.

/LV1/ **Low Voltage Switchgear SIRIUS-SENTRON-SIVACON**
Catalog
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/MRL/ **Directive 98/37/EG of the European Parliament and Council**
Machinery directive
Bundesanzeiger-Verlags GmbH Edition: 22.06.1998

/SISH/ **Safety Integrated**
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/SICD/ **Safety Integrated**
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Drive System
0.12 kW to 1200 kW

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G110

– Getting Started
– Operating Instructions
– List Manual

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G120

– Getting Started
– Operating Instructions
– Function Manual
– List Manual

SINAMICS
G130

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– Equipment Manual Chassis Power Units
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– Commissioning Manual
– Commissioning Manual CANopen
– Function Manual Drive Functions
– Function Manual Safety Integrated
– Function Manual DCC Standard Blocks
– Programming and Operating Manual DCC Editor Description
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