

# Rexroth SYNAX200 Version 10

290545  
Edition 01

## Troubleshooting Guide



**Title** SYNAX200  
**Title** Decentralized System for the Synchronization of Machine Axes  
**Type of Documentation** Troubleshooting Guide: Version 10  
**Document Typecode** DOK-SYNAX\*-SY\*-10VRS\*\*-WA01-EN-P  
**Internal File Reference**

- Box 40-10V-EN
- SY110E\_D.doc
- Document number 120-2200-B317-01/EN

**Purpose of Documentation** This documentation supports trained maintenance personnel

- in the rapid identification of faults
- outlining carefully-directed steps for the quick elimination of faults
- to quickly and effectively take up contact with either the manufacturer of the machine or INDRAMAT customer service

**Editing sequence**

| Document designation of previous editions | Status | Comments      |
|---|--------|---------------|
| DOK-SYNAX*-SY*-10VRS**-WA01-EN-P          | 08.02  | Version 10VRS |
|   |        |               |
|   |        |               |

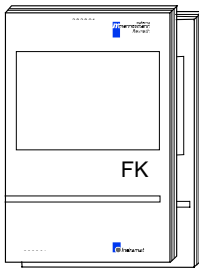
**Copyright** © 2002 Rexroth Indramat GmbH  
 Copying this document, giving it to others and the use or communication of the contents thereof without express authority, are forbidden. Offenders are liable for the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design (DIN 34-1).

**Validity** The specified data is for product description purposes only and may not be deemed to be guaranteed unless expressly confirmed in the contract. All rights are reserved with respect to the content of this documentation and the availability of the product.

**Published by** Rexroth Indramat GmbH  
 Bgm.-Dr.-Nebel-Str. 2 • D-97816 Lohr a. Main  
 Telephone 09352/40-0 • Tx 689421 • Fax 09352/40-4885  
<http://www.rexroth.com/indramat>  
 Dept. BRC/ESP (TI)

**Note** This document has been printed on chlorine-free bleached paper.

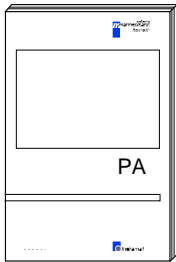
## Summary of Documentation - Overview



**Functional Description: Interfaces:**

Help familiarize the user with SYNAX200 and the functions of SYNAX200

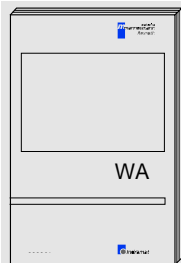
Order designation:  
 DOK-SYNAX\*-SY\*-10V\*1/2-FK01-EN-P  
 DOK-SYNAX\*-SY\*-10V\*2/2-FK01-EN-P



**Parameter Description:**

Description of the SYNAX200 system parameters

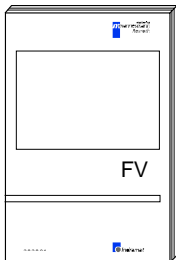
Order designation:  
 DOK-SYNAX\*-SY\*-10VRS\*\*-PA01-EN-P



**Trouble Shooting Guide:**

Explanation of the diagnostics states  
 How to proceed when eliminating faults

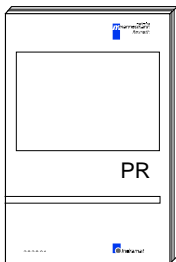
Order designation:  
 DOK-SYNAX\*-SY\*-10VRS\*\*-WA01-EN-P



**Firmware Version Notes:**

Overview of the highlights of SYNAX200 version 10VRS and the most important differences compared with the incompatible previous SYNAX200 version 08VRS

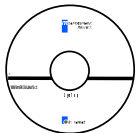
Order designation:  
 DOK-SYNAX\*-SY\*-10VRS\*\*-FV01-EN-P



**Project Planning:**

Selection of units and hardware components  
 Basic control in cabinet construction

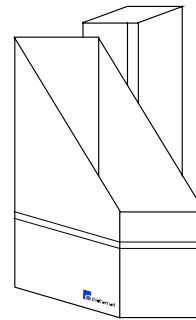
Order designation:  
 DOK-SYNAX\*-SY\*-10VRS\*\*-PR01-EN-P



**CD: SynTop**

Collection of Windows help systems  
 SynTop, user interface for SYNAX200

Order designation:  
 SWD-SYNTOP-INB-10VRS-MS-CD600



Order designation:  
 DOK-SYNAX\*-SY\*-10VRS\*\*-4001-EN-P



# Contents

|          |  |            |
|----------|--|------------|
| <b>1</b> | <b>SYNTAX200 diagnosis</b>   | <b>1-1</b> |
| 1.1      | Summary of SYNTAX200 diagnosis .....   | 1-1        |
| 1.2      | Global SYNTAX200 diagnosis .....   | 1-2        |
|          | SynTop: Connection .....   | 1-2        |
|          | SynTop: Fault finding .....  | 1-2        |
|          | Diagnostic system .....  | 1-4        |
|          | Overview of the diagnostic displays .....  | 1-9        |
|          | Interpreting the PPC diagnostic parameters .....                                     | 1-10       |
|          | Clearing an error .....  | 1-11       |
|          | PPC ready to operate .....   | 1-12       |
|          | Emergency reaction .....   | 1-13       |
|          | Watchdog .....   | 1-13       |
| 1.3      | Error storage .....  | 1-14       |
|          | How error storage works .....  | 1-14       |
|          | Reading the memory contents .....  | 1-14       |
|          | System time .....  | 1-15       |
| 1.4      | Diagnostic display on the PPC or PPC-P .....   | 1-16       |
|          | Display .....  | 1-16       |
| 1.5      | Diagnosis on the serial interface .....  | 1-18       |
|          | Diagnosis on 3964R .....   | 1-18       |
|          | Diagnosis on ARCNET .....  | 1-19       |
|          | Diagnosis on the fieldbus .....  | 1-21       |
| 1.6      | Diagnostic parameters .....  | 1-23       |
| <b>2</b> | <b>Diagnoses and fault numbers arranged as per the display on the PPC</b>            | <b>2-1</b> |
| 2.1      | Overview .....   | 2-1        |
| <b>3</b> | <b>Diagnoses and fault numbers arranged as per fault number (parameter Y-0-0048)</b> | <b>3-1</b> |
| 3.1      | Overview .....   | 3-1        |
| <b>4</b> | <b>Definition of the error messages</b>  | <b>4-1</b> |
|          | -01 to -2x Initialization messages .....   | 4-1        |
|          | ¥01¥ to ¥14¥ Hardware error .....  | 4-1        |
|          | F HW (18) "PPC/DAQ Hardware defective: CON_CYC-Signal faulty" .....                  | 4-1        |
|          | F HW (19) "PPC hardware defective" .....   | 4-1        |
|          | F TN (25) "PPC in test mode zero bit stream" .....                                   | 4-1        |
|          | F ON (26) "PPC in test mode continuous light" .....                                  | 4-2        |

|  |      |
|--|------|
| F01 (01) "SERCOS interface - ring break" .....                                       | 4-2  |
| F02 (02) "SERCOS interface - no drives connected" .....                              | 4-2  |
| F03 (03) "Error on switching to phase 3" .....                                       | 4-2  |
| F04 (04) "Error on switching into operating mode" .....                              | 4-3  |
| F05 (05) "SERCOS interface - double drive telegram failure" .....                    | 4-3  |
| F06 (06) "Fiber optic ring not closed" .....   | 4-3  |
| F07 (07) "Drive addresses not correct (see Y-0-0002, Y-0-0086)" .....                | 4-4  |
| F08 (08) "Max. number of drives exceeded" .....                                      | 4-4  |
| F09 (09) "Fatal error occurred - PPC reset necessary" .....                          | 4-4  |
| F10 (10) "PPC-internal memory error" .....   | 4-5  |
| F12 (12) "PPC parameter exceeds min./max. value (see Y-0-0068)" .....                | 4-5  |
| F14 (14) "PPC checksum error (see Y-0-0068)" .....                                   | 4-5  |
| F15 General procedure with this PPC display .....                                    | 4-5  |
| F15 (15) "PPC parameter not correct (see Y-0-0068)" .....                            | 4-6  |
| F15 (22) "Parameter value limits: min-limit > max-limit (see Y-0-0068)" .....        | 4-6  |
| F15 (34) "Y-0-0013: Local bus input module missing. Slot-nr: xx" .....               | 4-6  |
| F15 (35) "Y-0-0013: Local bus output module missing. Slot-nr: xx" .....              | 4-6  |
| F15 (144) "Y-0-0157/Y-0-0158: Number of entries not equal" .....                     | 4-6  |
| F15 (145) "Y-0-0157: Ident-number exists twice" .....                                | 4-7  |
| F15 (148) "List of UDP ports in Y-0-0194 is too short (see Y-0-0129)" .....          | 4-7  |
| F15 (149) "Y-0-0194: UDP port number exists twice" .....                             | 4-7  |
| F15 (152) "Interbus: Process data length is not supported (Y-127/128)" .....         | 4-8  |
| F15 (153) "Parameter channel: Is supported by Profibus only (Y-33/129)" .....        | 4-8  |
| F15 (154) "PCP channel: Is supported by Interbus only (Y-33/129)" .....              | 4-8  |
| F15 (155) "Register controller, master axis - no master address (A-169)" .....       | 4-8  |
| F15 (156) "Register controller, master axis - no drive addresses (A-87)" .....       | 4-9  |
| F15 (157) "Register controller, drive axis - no master addresses (A-169)" .....      | 4-9  |
| F15 (158) "Register controller, drive axis - no drive addresses (A-87)" .....        | 4-9  |
| F15 (159) "More than 1 register controller per master axis not possible" .....       | 4-9  |
| F15 (160) "More than one register controller per axis not possible" .....            | 4-9  |
| F15 (161) "Winding axis must be in speed synchronization (A-0-0003, A-0-0146)" ..... | 4-10 |
| F15 (165) "Y-0-0039/Y-0-0040: Number of entries not equal" .....                     | 4-10 |
| F15 (166) "A-0-0008/Y-0-0039: Activated analogue channel not linked" .....           | 4-10 |
| F15 (167) "More than one process controller per axis not possible" .....             | 4-10 |
| F15 (168) "Y-0-0040: Multiple entries of target parameter in list" .....             | 4-11 |
| F15 (171) "Tension controller target address and -value wrong (A-146)" .....         | 4-11 |
| F15 (172) "Dancer controlled axis must be speed synchron" .....                      | 4-11 |
| F15 (173) "More than one tension controller per master not possible" .....           | 4-11 |
| F15 (175) "A-0-0030: Process control P-gain too high" .....                          | 4-12 |
| F15 (176) "A-0-0146: Analogue channel for process control not defined" .....         | 4-12 |
| F15 (177) "A-0-0146: Analogue channel for the process control not activated" .....   | 4-12 |
| F15 (178) "Tension controlled axis must be speed or phase synchron" .....            | 4-13 |
| F15 (179) "More than one tension controller per axis not possible" .....             | 4-13 |
| F15 (180) "Parameter A-0-0038 not correct" .....                                     | 4-13 |
| F15 (181) "Y-0-0013: Non-permissible DEA address (see Y-0-0002)" .....               | 4-13 |
| F15 (182) "Y-0-0013: Synchronization mode not permissible (A-0-0003)" .....          | 4-14 |

|           |  |      |
|-----------|--|------|
| F15 (183) | "Y-0-0013: Addressed X-I/O not permissible (see Y-0-0024/Y-0-0033)"            | 4-14 |
| F15 (184) | "Y-0-0013: Idle mode not permissible (see A-0-0009)"                           | 4-14 |
| F15 (185) | "Y-0-0013: Positioning mode not permissible (see A-0-0009)"                    | 4-14 |
| F15 (186) | "Y-0-0013: Special mode not permissible (see A-0-0070)"                        | 4-15 |
| F15 (187) | "Y-0-0013: Non-permissible version of PARA.EXE"                                | 4-15 |
| F15 (188) | "Y-0-0013: Data integrity violated"  | 4-15 |
| F15 (189) | "Y-0-0013: Non-permissible DEA address (e.g., ECODRIVE)"                       | 4-15 |
| F15 (190) | "PPC-link - other link master already active"                                  | 4-16 |
| F15 (192) | "Y-0-0013: PLC-Interface not allowed on PPC-R without ISP"                     | 4-16 |
| F15 (193) | "No different feedbacks selectable (A-0-0003/A-0-0009/A-0-0070)"               | 4-16 |
| F15 (194) | "Phase synchronization & absolute format not possible (see A-0-0001/A-0-0003)" | 4-16 |
| F15 (195) | "A-0-0003: Drive does not support selected sync. mode"                         | 4-17 |
| F15 (196) | "A-0-0070: Drive does not support selected special mode"                       | 4-17 |
| F15 (198) | "Special mode only with PPC-P possible (A-0-0070/A-0-0071/A-0-0072/A-0-0073)"  | 4-17 |
| F15 (217) | "Too many parameters in MDT configured"  | 4-17 |
| F15 (218) | "Too many parameters in AT configured"   | 4-18 |
| F15 (220) | "A-0-0025: Too many register controllers activated"                            | 4-18 |
| F15 (221) | "Serial port A (X10) multiple assigned (Y-0-0005/Y-0-0033)"                    | 4-18 |
| F15 (222) | "Serial port B (X16) multiple assigned (Y-0-0010/Y-0-0033)"                    | 4-19 |
| F15 (223) | "Cam and register control not possible (see A-0-0003/A-0-0025)"                | 4-19 |
| F15 (224) | "Register cont. and oscilloscope not possible (see A-0-0025/Y-0-0107)"         | 4-19 |
| F15 (225) | "Cam/register/osci. not possible (see A-0-0003/A-0-0025/Y-0-0107)"             | 4-19 |
| F15 (226) | "Drive does not support oscilloscope function"                                 | 4-20 |
| F15 (232) | "A-0-0009: Drive does not support selected positioning mode"                   | 4-20 |
| F15 (233) | "Drive locked with password (S-0-0267)"  | 4-20 |
| F15 (236) | "Register control only possible with modulo axis (see A-0-0001, A-0-0025)"     | 4-20 |
| F15 (237) | "Register controlled axis without synchronization (see A-0-0003)"              | 4-20 |
| F15 (240) | "Cam switches and I/O to DEA4.1 not possible (Y-0-0013, C-0-0049, A-0-0036)"   | 4-21 |
| F15 (241) | "Cam switches and I/O not possible. (Y-0-0013, C-0-0049) slot-nr: xx"          | 4-21 |
| F15 (243) | "Drive does not support DEA8.1 card"   | 4-21 |
| F15 (244) | "Combination of used functions not possible (real time bits)"                  | 4-22 |
| F15 (245) | "Y-0-0013: Drive waypoints not possible (e. g. ECODRIVE)"                      | 4-22 |
| F15 (250) | "Target axis must be synchronous axis (A-0-0133, A-0-0156)"                    | 4-22 |
| F15 (251) | "Too many group parameters of one group per axis"                              | 4-22 |
| F15 (263) | "Parameter Y-0-0131 not correct. Line nbr.: xxx"                               | 4-23 |
| F15 (264) | "Parameter Y-0-0132 not correct. Line nbr.: xxx"                               | 4-23 |
| F15 (280) | "Parameter Y-0-0127 not correct. Line nbr.: xxx"                               | 4-24 |
| F15 (281) | "Parameter Y-0-0188 not correct. Line nbr.: xxx"                               | 4-24 |
| F15 (282) | "Parameter Y-0-0189 not correct. Line nbr.: xxx"                               | 4-25 |
| F15 (283) | "Parameter Y-0-0190 not correct. Line nbr.: xxx"                               | 4-25 |
| F15 (284) | "Parameter Y-0-0128 not correct. Line nbr.: xxx"                               | 4-26 |
| F15 (285) | "Parameter Y-0-0185 not correct. Line nbr.: xxx"                               | 4-26 |
| F15 (286) | "Parameter Y-0-0186 not correct. Line nbr.: xxx"                               | 4-27 |
| F15 (287) | "Parameter Y-0-0187 not correct. Line nbr.: xxx"                               | 4-27 |

|  |      |
|--|------|
| F16 (20) "Non-supported drive type" .....                                      | 4-28 |
| F16 (21) "Non-supported drive firmware" .....                                  | 4-28 |
| F17 (105) "Master position value corrupted. Master axis: xx" .....             | 4-28 |
| F17 (106) "Master speed limit to high (C-30, C-31). Master axis: xx" .....     | 4-28 |
| F17 (107) "Master speed limit to high (C-55, C-56). Master axis: xx" .....     | 4-29 |
| F17 (109) "C-76, C-2, C-5: Different cycles of master axes" .....              | 4-29 |
| F17 (110) "Too many local IO's for cam switches 2 activated (C-0-0049)" .....  | 4-29 |
| F17 (111) "Too many DEA cards for cam switches 2 activated (C-49, A-36)" ..... | 4-29 |
| F17 (112) Cam switch 2 - parameters C-49 and A-36 not ok.....                  | 4-30 |
| F18 (100) "Real master axis - master encoder error" .....                      | 4-30 |
| F18 (101) "Real master axis - redundant encoder error" .....                   | 4-31 |
| F18 (102) "RM - Drive with master axis encoder is missing" .....               | 4-31 |
| F18 (103) "RM - External encoder feedback need to configure" .....             | 4-31 |
| F18 (104) "RM - Redundant ext. encoder feedback need to configure" .....       | 4-31 |
| F21 (230) "SERCOS transmission error (no drive responds)" .....                | 4-32 |
| F21 (231) "SERCOS interface - transmission error during initialization" .....  | 4-32 |
| F22 (199) "Switching to uninitialized operation mode" .....                    | 4-32 |
| F23 (23) "PPC-parameter inconsistent. Command 'Restore' (Y-0-0014)?" .....     | 4-33 |
| F24 (24) "Reinitialization necessary - Reset when changing the phase!" .....   | 4-33 |
| F32 (140) "3964R Serial interface overrun" .....                               | 4-33 |
| F32 (141) "3964R Serial interface parity error" .....                          | 4-34 |
| F32 (142) "3964R Serial interface transmission error (Frame)" .....            | 4-34 |
| F32 (143) "ARCNET - excessive bus reconfiguration" .....                       | 4-34 |
| F32 (146) "ARCNET telegram buffer: overrun error" .....                        | 4-34 |
| F32 (147) "Buffer overrun: parameter are changed too fast in sequence!" .....  | 4-35 |
| F33 (150) "Communication via the fieldbus is impossible" .....                 | 4-35 |
| F33 (151) "Fieldbus: Incorrect jumper setting on fieldbus board" .....         | 4-35 |
| F36 (36) "Local bus module - External power supply error. Slot-Nr: xx" .....   | 4-36 |
| F40 (40) "PPC-link - link defective" .....                                     | 4-36 |
| F42 (42) "PPC-link - master position fault (MDT)" .....                        | 4-36 |
| F43 (43) "PPC-link - master position fault (AT)" .....                         | 4-37 |
| F44 (44) "PPC-link - selected link address not permitted" .....                | 4-37 |
| F81 (81) "DAQ-board not correct (address-mapping)" .....                       | 4-37 |
| F91 (91) "SERCOS interface - ASIC: initialization error" .....                 | 4-37 |
| F92 (92) "PPC DUAL PORT RAM error" .....                                       | 4-38 |
| F93 (93) "DAQ: SERCOS interface - ASIC: initialization error" .....            | 4-38 |
| F94 (94) "PPC hardware version incorrect" .....                                | 4-38 |
| F95 (4000+x) "Operating system error" .....                                    | 4-38 |
| F97 (260) "PLC - firmware-version incompatible" .....                          | 4-39 |
| F97 (261) "PLC - cycle-counter is dead" .....                                  | 4-39 |
| F97 (262) "PLC reports an error" .....   | 4-39 |
| F97 (2000+z) "PLC error" .....   | 4-39 |
| F98 (3000+y) "Drive error" .....   | 4-39 |

## 5 Index

5-1



|          |  |            |
|----------|--|------------|
| <b>6</b> | <b>Service &amp; Support</b>                               | <b>6-1</b> |
| 6.1      | Helpdesk .....   | 6-1        |
| 6.2      | Service-Hotline .....                                      | 6-1        |
| 6.3      | Internet .....   | 6-1        |
| 6.4      | Vor der Kontaktaufnahme... - Before contacting us.....     | 6-1        |
| 6.5      | Kundenbetreuungsstellen - Sales & Service Facilities ..... | 6-2        |



# 1 SYNTAX200 diagnosis

## 1.1 Summary of SYNTAX200 diagnosis

The diagnostic system of the PPC breaks down as follows:

- There are entities (master axes, system management, etc.) that can, independent of each other, identify errors.
- These entities can directly overwrite binary inputs which are **exclusively** allocated to them.
- They can simultaneously send diagnoses to the diagnostic system.

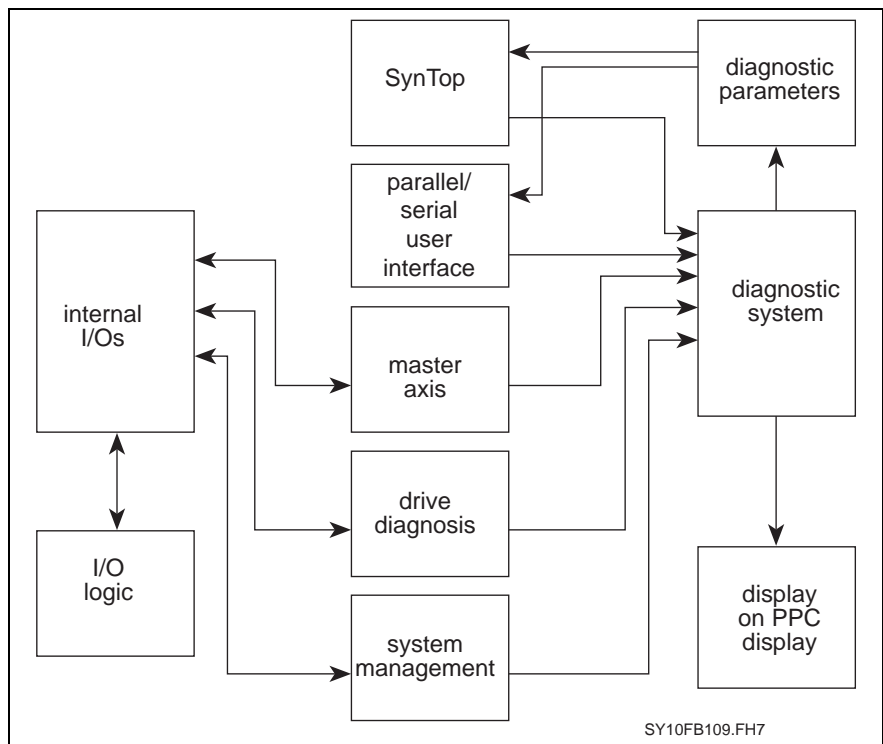


Fig. 1-1: Diagnosis overview on the PPC

## 1.2 Global SYNAX200 diagnosis

### SynTop: Connection

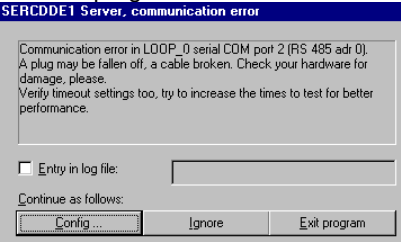

The standard display in the SYNAX200 system is the 4 place display. SynTop may have to be connected in order to be able to read diagnostic parameters. This requires a serial cable and a PC (e.g., Notebook).

### SynTop: Fault finding

The following is the procedure for finding faults:

1. read display H1 on the PPC
2. read display H1 on the DIAX03/DIAX04/ECODRIVE03 drive controller
3. locate the relevant entry in diagnosis in section 4.

If the error has not been cleared with steps 1 to 3, then it is necessary to read the diagnostic parameters (see page 1-14) .

| Fault  | Cause  | Remedy   |
|--|--|--|
| <p>SynTop signals the message "SERCDDE1 Server, communication error" at program start</p>  | <p>Service cable not correctly plugged or disconnected.</p>                            | <p>Check whether the connector of the service cable has been plugged to the correct interface or the cable is disconnected.</p>  |
|  | <p>Incorrect COM port selected in dialog SynTop communication interface selection.</p> | <p>Select the correct COM port in dialog communication interface selection.</p>    |
|  | <p>Incorrect PPC interface (X10/X16) parameterized.</p>                                | <p>Check on the PPC with the S1 button, if the interface X10 or X16 is parameterized correctly.</p> <p>For X10/X16:<br/>M03: Device address (Y-0-0142)</p> <p>For X10:<br/>M04: X10 mode=RS232/RS485 (Y-0-0004)<br/>M05: X10 baud=19200 (Y-0-0003)<br/>M06: X10 type=SYTP (Y-0-0005=1)</p> <p>For X16:<br/>M07: X16 mode=RS232/RS485 (Y-0-0004)<br/>M08: X16 baud=19200 (Y-0-0003)<br/>M09: X16 type=SYTP (Y-0-0005=1)</p> |

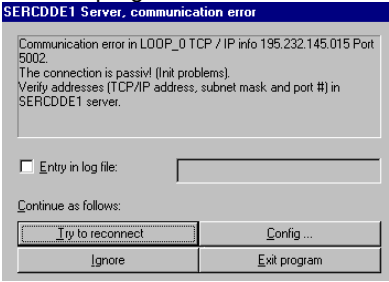
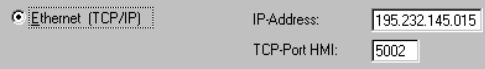
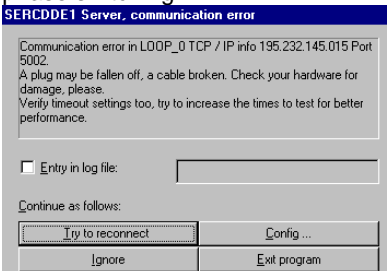
|  |  |  |
|--|--|--|
|  |  | <p>The interface X16 is parameterized in delivery status so that a terminal (e.g., hyper terminal) can be used, that means Y-0-0003=9600, Y-0-0004=232, Y-0-0005=0. The interface X16 can also be parameterized for SynTop as described above.</p> <p>Also a communication with Ethernet can be established and the parameters Y-0-0003, Y-0-0004, Y-0-0005, for X10, or Y-0-0008, Y-0-0009, Y-0-0010, for X16 can be changed.</p> |
| <p>SynTop signals the message "SERCDDE1 Server, communication error" at program start</p>   | <p>Ethernet cable not correctly plugged or disconnected.</p>   | <p>Check whether the connector of the Ethernet cable has been plugged to the correct interface or the cable is disconnected.</p>   |
|  | <p>Incorrect IP address or TCP port selected in dialog SynTop communication interface selection.</p> | <p>Select correct IP address or TCP port in dialog SynTop communication interface selection.</p>    |
|  | <p>Incorrect Ethernet communication parameterized</p>  | <p>Check on the PPC with the S1 button, if the communication is parameterized correctly.<br/> M10: IP address (Y-0-0191)<br/> M15: Subnet mask (Y-0-0192)<br/> M20: Gateway (Y-0-0193)<br/> M25: PPC TCP port=5002 (Y-0-0196)<br/> Set ping on IP address.<br/> Check if all HMI ports are busy.<br/> Also serial communication can be established and the parameters Y-0-0191, Y-0-0192, Y-0-0193, Y-0-0196 can be changed.</p>   |
| <p>SynTop signals the message "SECDDE1 Server, communication error" at the communication with Ethernet, after setting an Ethernet fieldbus transmission protocol, at phase switching</p>  | <p>Ethernet card (ETH) was reinitialized.</p>  | <p>Press button "Try to reconnect" in the dialog box.</p>  |

Fig. 1-2: Fault clearance

## Diagnostic system

The diagnostic system is active in every mode of the PPC.

### Error messages to the diagnostic system

Every entity that detects an error, signals this to the diagnostic system. An error is a **negative diagnosis**.

A message contains

- an internal diagnostic number
- the drive number (0 = PPC-System, 1..n = drive)
- a diagnostic text

The diagnostic system describes the diagnostic parameters Y-0-0046, Y-0-0047, Y-0-0048 and Y-0-0163 with the relevant entries of the **first error to be generated**. This first error is then also entered into the error storage.

If this error is allocated to a drive, then the address of the drive is entered in parameter "SYNAX - error source" (Y-0-0046).

If this error must be allocated to the PPC system, the diagnostic information always contains the value 10000h.

Further incoming errors do not overwrite the above referenced parameters, but are rather immediately written into the error storage.

Overwriting, i.e., deleting, an entry of the diagnostic parameters is only possible with a positive diagnosis.

### Positive diagnosis signaled to the diagnostic system

A positive diagnosis overwrites an existing error message, i.e., the error message is cleared. Various entities produce positive diagnoses, e.g.:

- system management (e.g., "PPC parameterization mode")
- ...

A positive diagnosis is identified in terms of error number 0. A message containing error number 0 means

- a positive operating mode has been achieved
- an error message has been cleared
- a cleared error message

for either an axis or the PPC system.

The diagnostic system then corrects the diagnostic parameters.

## Overview of the diagnostic system

The following depicts the logical sequence of the diagnostic system:

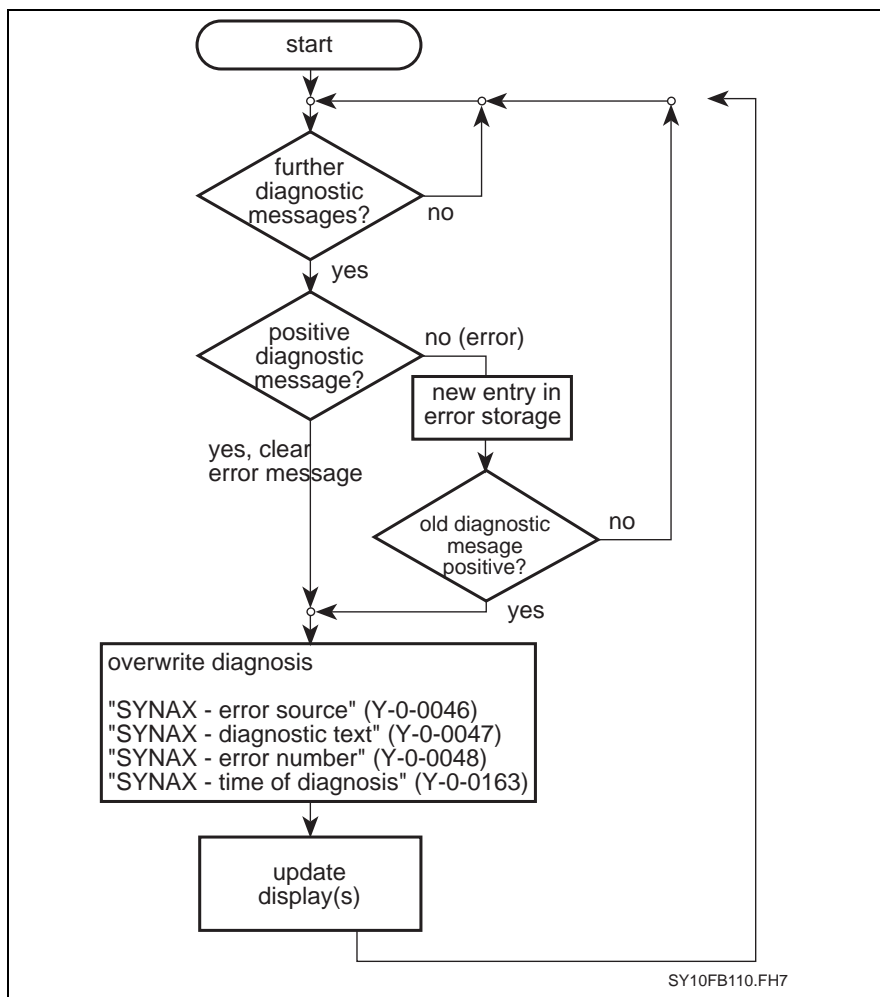


Fig. 1-3: Messages to the diagnostic system

## Errors occurring before reaching operating mode

Errors that occur prior to reaching operating mode and can cause the system to fail are primarily configuration errors, for example:

- hardware (connector not attached, no external voltage, etc.)
- parameter (incorrect number of drives or addresses, unacceptable mode, etc.)

This type of error message means that the PPC cannot switch into an operating mode.

The entity which detects the error also signals it to the diagnostic system.

The diagnostic system

- issues an error message using the available display media of the PPC
- describes the diagnostic parameter giving detailed information.

A re-start is necessary once the error is cleared.

Re-start can be initiated by:

- switching supply voltage on and off
- switching into parameter mode and then back into operating mode

If additional configuration errors are still present after the re-start, then these are signaled. Otherwise, the PPC will now assume operating mode.

### Error in operating mode

Once in operating mode, the occurrence of an error also means

- a binary output will be set,

in addition to the behavior just described. This can lead to a quick reaction on the part of the entire system.

These outputs are set directly by the relevant entity. Every entity has I/Os on which **exclusively** it may write.

### Drive error

If the drive signals an error, of the SERCOS status class 1, then the following ensues:

- the diagnostic system is activated
- the number of the drive issuing the first error is written into parameter Y-0-0046
- parameter "Diagnostic message" (S-0-0095) of the relevant drive is copied into parameter Y-0-0047
- parameter "Error message number" (P-0-0009) is copied, after receiving an offset of 3000, into parameter Y-0-0048
- system time (Y-0-0159) is written into parameter Y-0-0163
- output drive error is set

---

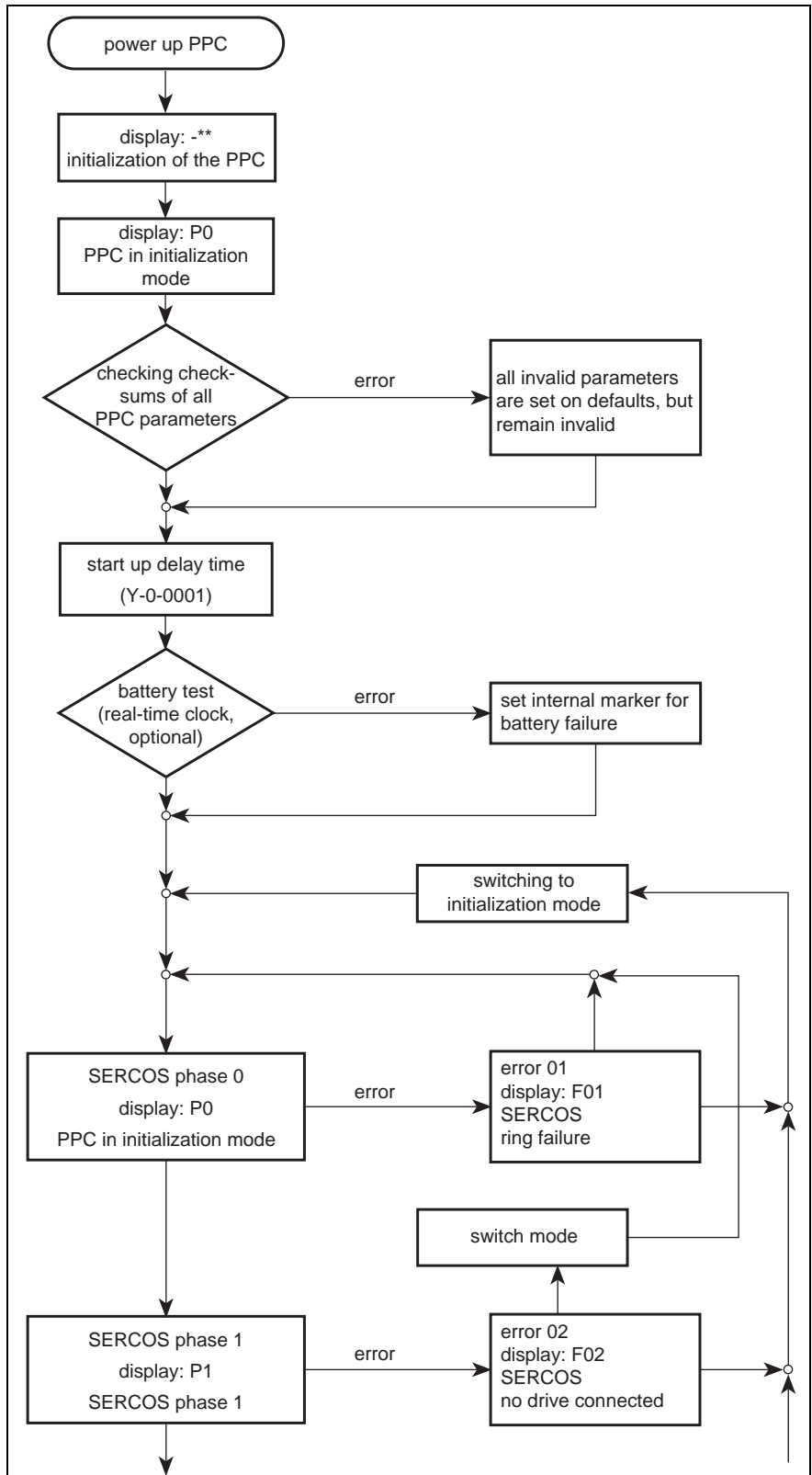
**Note:** Only the error to occur first during fault-free operations is entered into the diagnostic parameter. Only after this error has been cleared a new entry in the diagnostic parameters is possible.

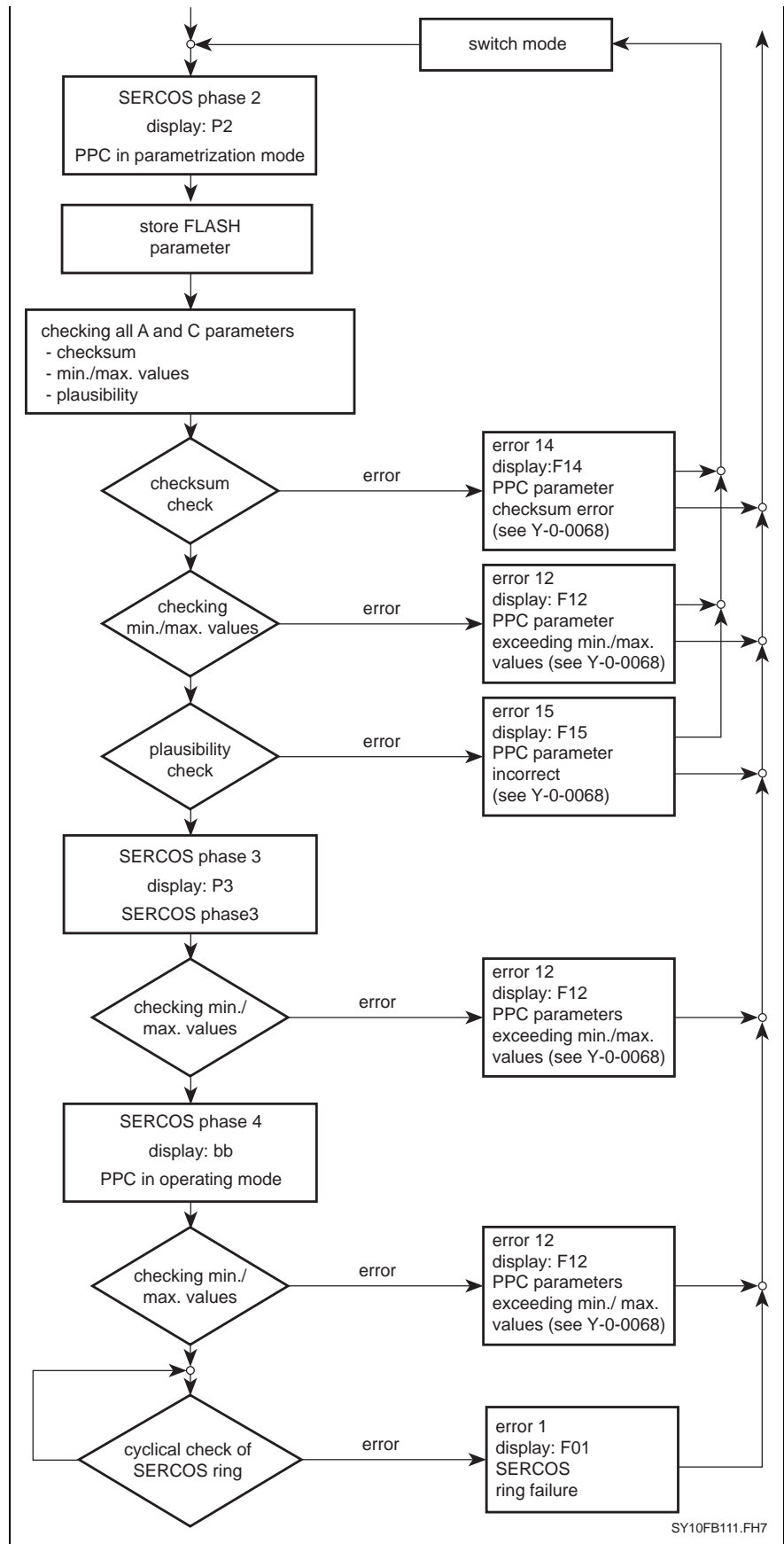
---



### Initialization sequence of the PPC system

The following figure depicts the initialization sequence of the PPC system. The corresponding diagnosis which appear on the display are also shown:





SY10FB111.FH7

Fig. 1-4: Initialization of a PPC

## Overview of the diagnostic displays

The system displays diagnoses at the following positions:

- display H1 on the PPC (four-digit)
- 7-segment display H1 on the DIAX03/DIAX04/ECODRIVE03 drive controller (two-digit)
- SYNTAX200 system parameter (visible via various bus systems or auxiliary commissioning aids)

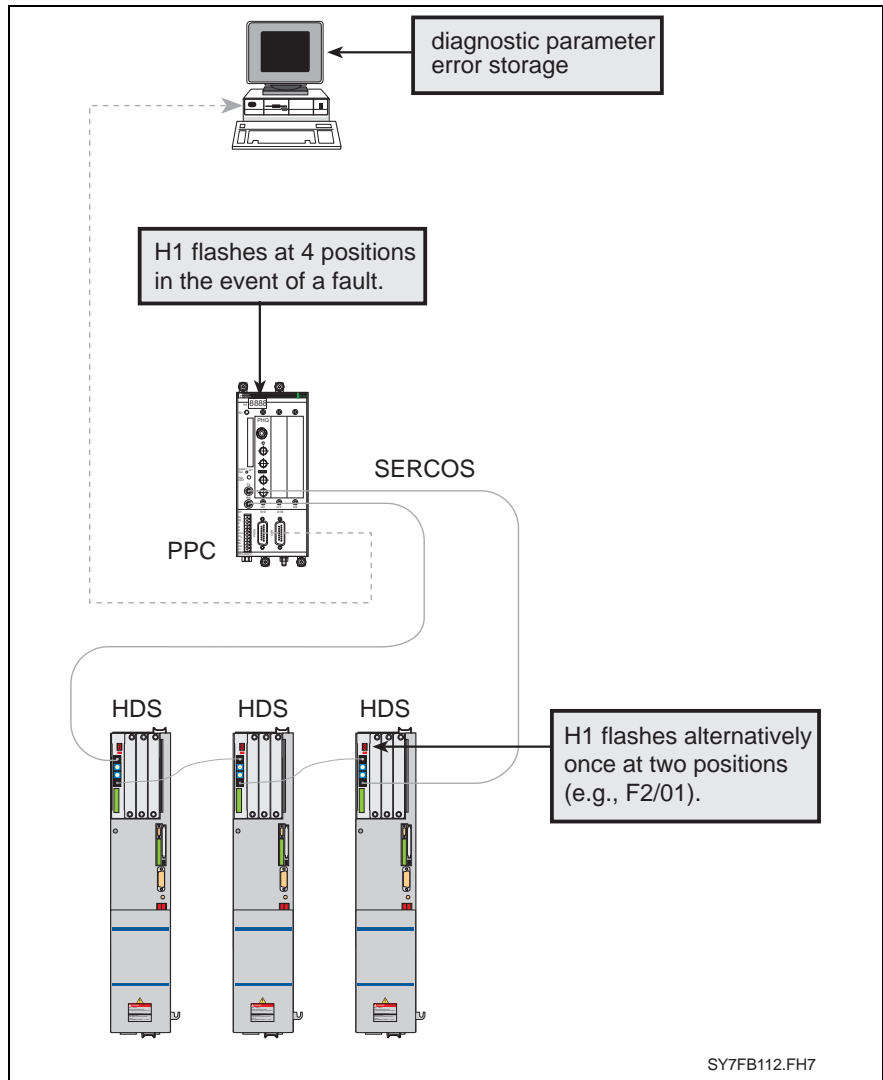


Fig. 1-5: Diagnostic displays

## Interpreting the PPC diagnostic parameters

See following figure.

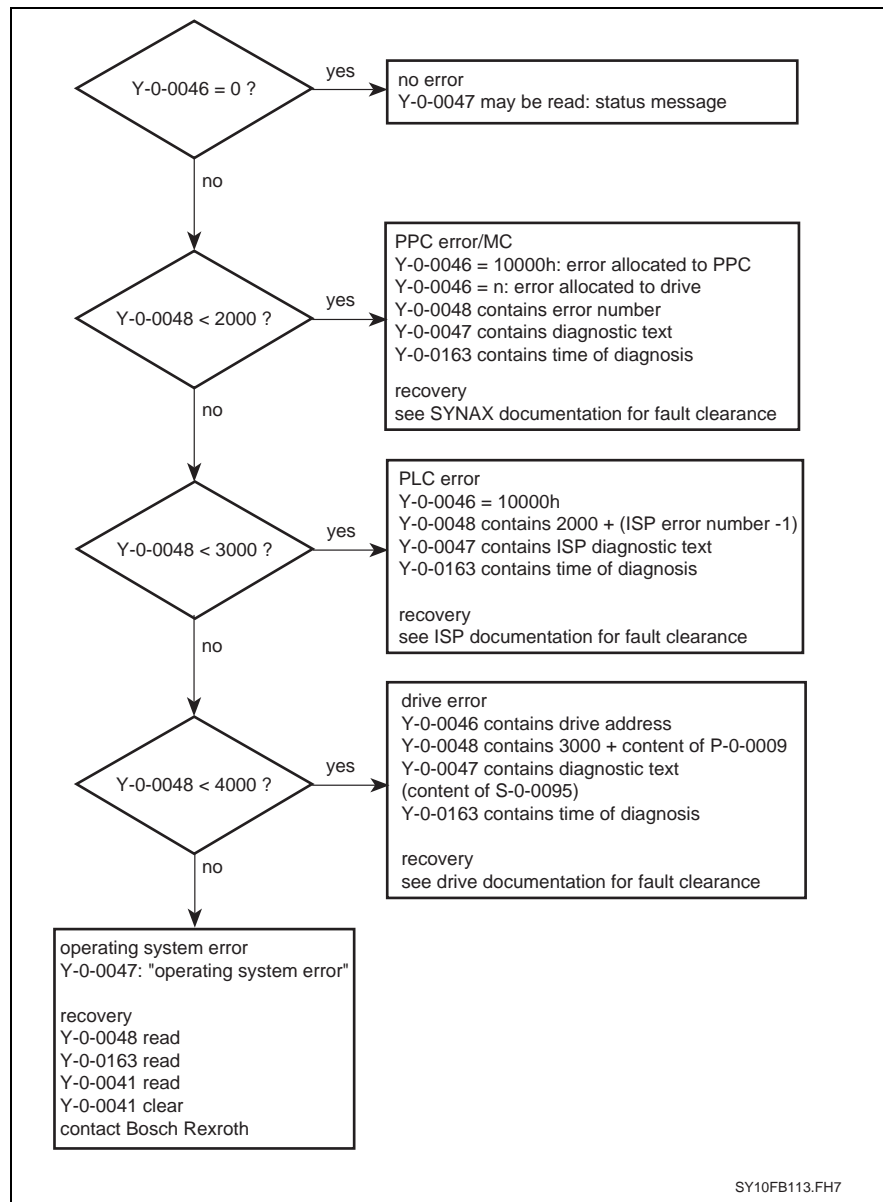


Fig. 1-6: Sequence diagram for PPC diagnosis

## Clearing an error

### Clearing a configuration error

If a configuration error occurs, then the PPC will not assume operating mode (ready for operation, PPC display "bb").

Depending on the error, the PPC remains

- in initialization,
- in parameterization mode or
- in operating mode, but before the state of ready in operation.

The user must go through the following steps:

- the cause(s) of the configuration error must be eliminated
- with a hardware error, the machine must be turned on and off once
- if a parameter was corrected, then it is necessary to switch into operating mode

Overview:

| Causes  | Action to be taken                                  |
|---|---|
| Parameter faulty  | - correct parameter<br>- switch into operating mode |
| Hardware configuration error<br>(cable not connected, etc.) | - eliminate error<br>- switch power on and off      |

Fig. 1-7: Table overview

### Clearing errors with an error in operating mode

If the PPC is in operating mode, then it is certain that a configuration error did not cause the error message.

In operating mode, errors are exclusively cancelled via the relevant clear error inputs which are ready by that entity that signaled the error.

| Cause                            | Clear error input | Procedure   |
|----------------------------------|-------------------|---|
| Master axis error                | _E:L#.16          | Input clears master axis error. If a master axis error was active in the diagnosis, then it is cleared as well.                       |
| Drive error                      | _E:F#.14          | Input clears the drive error with address #. If a drive error with address ' was active in the diagnosis, then it is cleared as well. |
| System error                     | _E:C01.01         | system error see table in section 2   |
| Communication error (interfaces) | _E:C01.03         | Errors associated with external communications (e.g., 3964R, fieldbusses) can be cleared via this input.                              |
| PPC link                         | _E:C01.04         | This error serves to clear or acknowledge a PPC link error on the PPC.  |

Fig. 1-8: Table: clearing errors

## PPC ready to operate

The system output "**PPC ready timing signal**" ( $\_A:C01.01$ ) is on the PPC. It signals when the PPC is ready to operate. This signal is cyclically toggled by the PPC once the PPC is ready to operate.

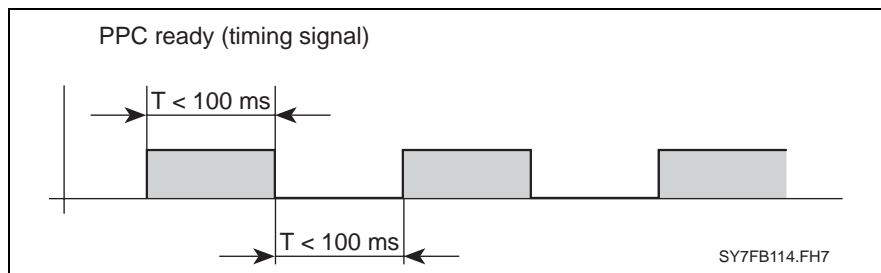


Fig. 1-9: PPC ready to operate (timing signal)

In addition, the potential-free contact of a relay is coming out at X1, pins 8 and 9. As soon as the PPC is ready for operation, the contact is closed.

The toggling of the signal or the contact assembly is interrupted, for example, if:

- the PPC is not in operating mode (PPC display "bb")
- there is a break in the Sercos ring (PPC error reaction F01)
- there is a double drive telegram failure (PPC error reaction F05)
- there is an operating system error (PPC error reaction F95)

A detailed description about when this clocking signal or the contact assembly is deactivated (or not even activated) is outlined in the tables in section 2.

There is a circuit on the DEA04 (starting with circuit board 06) and on the DEA08 which monitors this toggling on the hardware. The output of this circuit is designated **PPC ready to operate**.

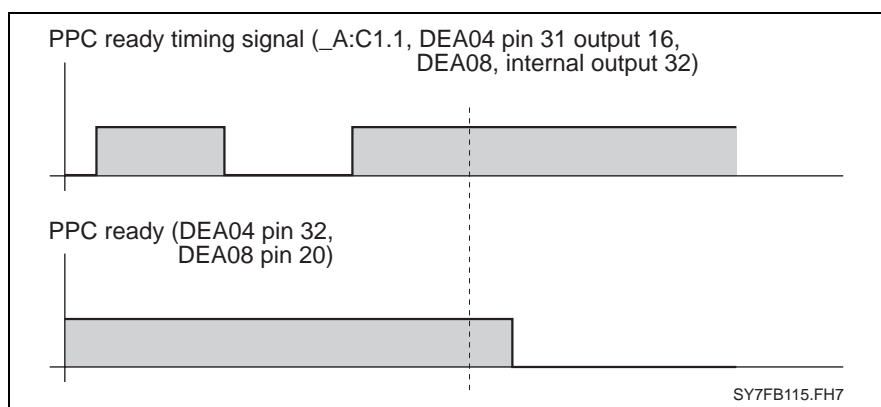


Fig. 1-10: PPC ready to operate (functional principle)

## Emergency reaction

Some occurring errors force a SERCOS emergency reaction. It contains:

- Switching SERCOS phase to phase 0
- Opening the ready to operate relay (only if closed before)

Examples for causing the emergency reaction are double AT failure, fibre optic ring break.

---

**Note:** After the emergency reaction (without MTS-R) a warm re-start is executed when switching again, that means after leaving phase 0. The system is completely initialized. This causes a re-initialization of all communication interfaces, that means, it can cause a break down of the communication via fieldbus.

---

## Watchdog

There is a watchdog on the PPC or PPC-P. It monitors microprocessor functions.

**PPC** If a processor error is signaled from the PPC, then two dots - as seen below - appear on the display:

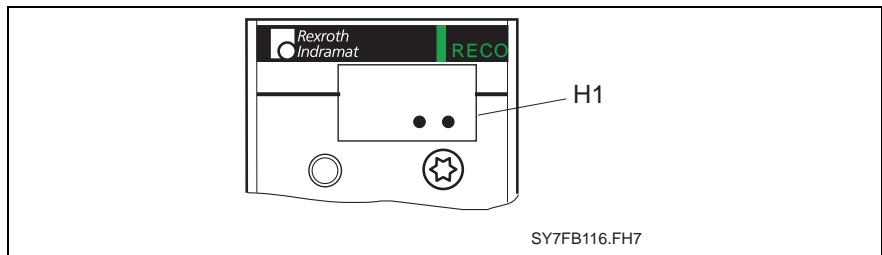


Fig. 1-11: Watchdog message on the PPC

**PPC-P** If a processor error is signaled on the PPC-P, then a dot - as seen below - appears on the display and the 7-segment display gets dark:

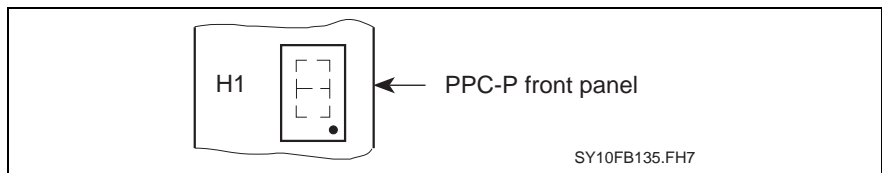


Fig. 1-12: Watchdog message on the PPC-P

## 1.3 Error storage

### How error storage works

All generated error messages are stored on the PPC in a ring-shaped error memory. The maximum number of entries equals 63, this means that the "oldest" error message is always overwritten.

The error storage entries are cleared by loading the base parameters of the PPC or with the help of parameter "Command clear error recorder" (Y-0-0051).

The following describes the structure of the error memory:

| No. | Date / time<br>4 bytes | msec<br>4 bytes | Error number<br>4 bytes | Error source<br>4 bytes | Diagnostic text<br>variable length |
|-----|------------------------|-----------------|-------------------------|-------------------------|------------------------------------|
| 63  |                        |                 |                         |                         |                                    |
| 62  |                        |                 |                         |                         |                                    |
| ... |                        |                 |                         |                         |                                    |
| 2   |                        |                 |                         |                         |                                    |
| 1   |                        |                 |                         |                         |                                    |

The errors are stored chronologically in the ring memory whereby the last signaled error is always in the last line (index no. 1).

### Reading the memory contents

Using the commissioning software "SynTop" (from version 04V03) the entire contents of the error storage can be displayed via parameter Y-0-0156.

The contents of the memory can be read out a line at a time via the PLC as well. The following parameters can be used for this purpose:

- "Error recorder - index" (Y-0-0153)
- "Error recorder - diagnostic message" (Y-0-0154)
- "Error recorder - diagnostic text" (Y-0-0155)

The data in parameter Y-0-0153 determines the line to be read. Index "1" always is the most recent entry, index "63" the oldest. The structure of a line looks like this:

| Y-0-0153  | Y-0-0154    |      |              |              | Y-0-0155        |
|-----------|-------------|------|--------------|--------------|-----------------|
| Index-no. | Date / time | msec | Error number | Error source | Diagnostic text |
|           |             |      |              |              |                 |

For detailed information on the format of stored data, see document "SYNAX200 Parameter Description", DOK-SYNAX\*-SY\*-10VRS\*\*-PA01-EN-P.



## System time

In diagnostic parameter Y-0-0163 and in error storage, the system time of the PPC is supplied in addition to the error message.

This system time can be read or set via parameter Y-0-0159 by the higher-ranking PLC or via SynTop. The date and time formats correspond to the time format of MS-Windows:

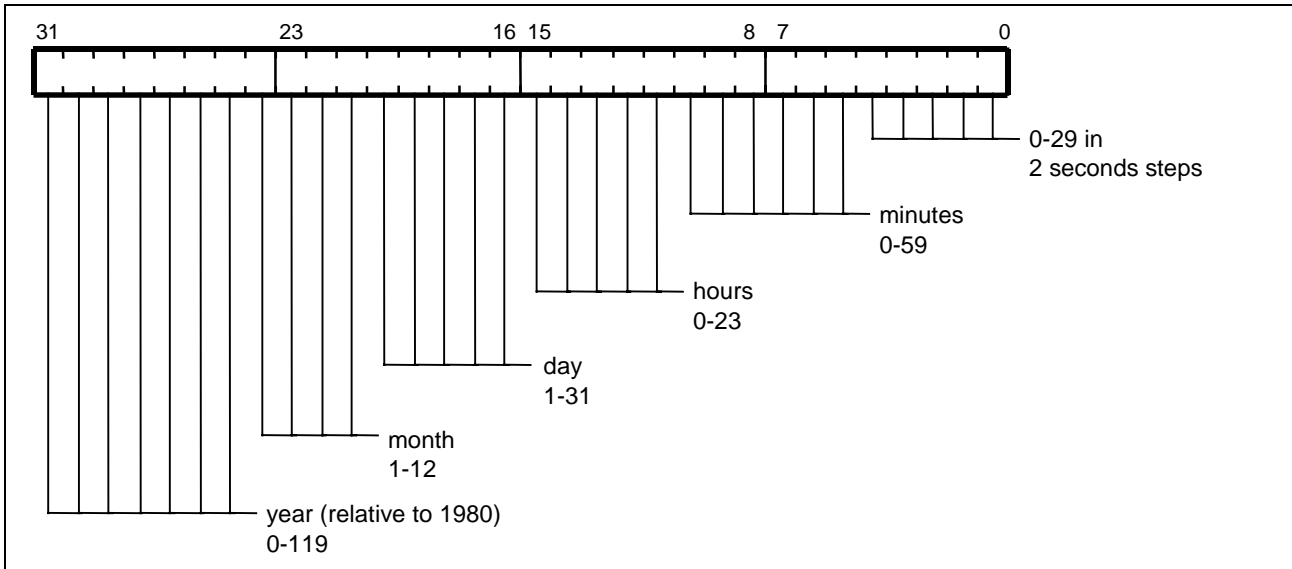


Fig. 1-13: Structure Y-0-0159

As a result of this format, the resolution of the inputs and outputs is limited to 2 seconds.

The PPC internal resolution equals:

|                 |      |
|-----------------|------|
| Standalone PPC: | 2 ms |
| PPC link:       | 8 ms |

Given a PPC link, the "SYNTAX - system time" (Y-0-0159) can only be changed or set in the link master. All link slaves then automatically synchronize to this time.

### Switching the PPC on and off

With a shutdown, the PPC (master and slaves) stores the system time, i.e., there is no real-time clock function with a shutdown.

**PPC link** With the next powering up, all PPCs first generate an internal system time which is asynchronous to the link. With the first valid MDT of the link master, the slave PPCs synchronize to the system time of the link master.

---

**Note:** As soon as the PPC is switched off the system time stands still. The system time can be updated after powering up by a higher-ranking PLC real time clock as needed.

---

### PPC clock pulse in seconds (\_A:C01.09)

SYNAX200 uses an internal clock to record events. It can be read with the help of parameter "SYNAX - system time" (Y-0-0159) in Windows time format.

As the transmission of the time value read by the PPC comes time delayed to a higher ranking control via a fieldbus connection by 2 second steps (Windows time format), this output "PPC clock pulse in seconds" (\_A:C01.09) can be used to follow the actual course of the SYNAX200 system clock. Given an uneven number of seconds, the PPC output is set, in the reverse case it is deleted.

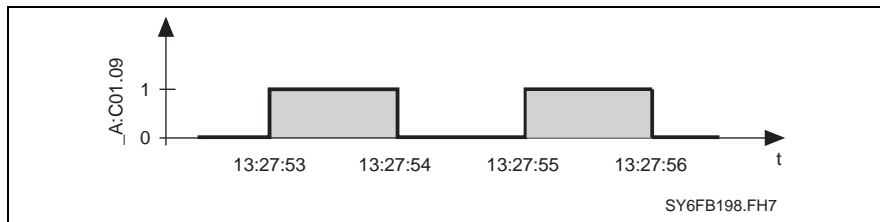


Fig. 1-14: PPC clock in seconds (functional principle)

## 1.4 Diagnostic display on the PPC or PPC-P

### Display

There is a display (H1) on the PPC or PPC-P. It displays the current operating state.

#### Display PPC

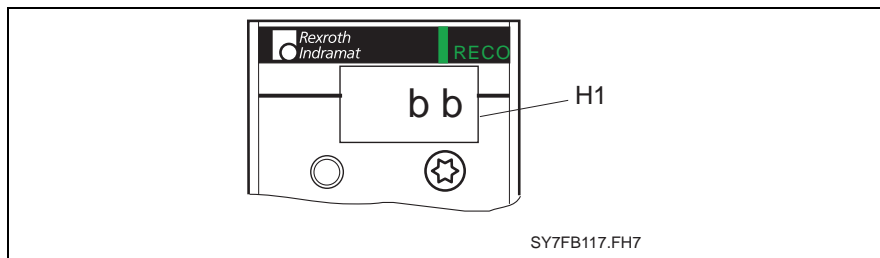


Fig. 1-15: Display on the PPC

#### Operating states PPC

A differentiation is made between two types of displays which depict the current operating state:

- the display of a static, **four**-digit display (normal operating state)
- the display of a flashing, **four**-digit display (error state)

**Display PPC-P**

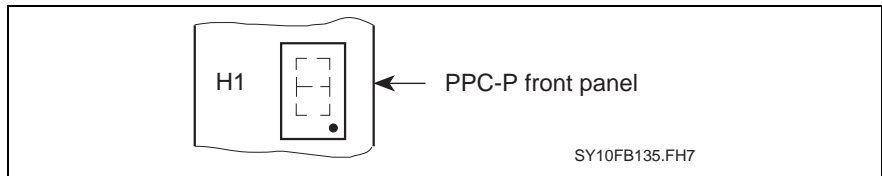


Fig. 1-16: Display on the PPC-P

**Operating states PPC-P**

A differentiation is made between two types of displays which depict the current operating state:

- the display of a static, **one**-digit display (normal operating state)
- the display of a flashing, **two**-digit display (error state)

**Normal operating mode display**

If the PPC is in a normal operating state, then there are four positions in the display which

- does not flash but remains static.

**Example:**

| Display PPC | Display PPC-P | Definition                                  |
|-------------|---------------|---|
| P0          | 0             | PPC in initialization mode                  |
| P1          | 1             | SERCOS interface - phase 1                  |
| P2          | P             | PPC in parameterization mode                |
| P3          | 3             | SERCOS interface - phase 3                  |
| bb          | b             | PPC in operating mode (ready for operation) |

Fig. 1-17: Table of a normal operating state

**Displaying a faulty operating mode**

The PPC indicates an error by issuing a **four**-digit error number on the display.

The displays are listed in the tables in section 2.

## 1.5 Diagnosis on the serial interface

### Diagnosis on 3964R

The interface 3964R represents a point-to-point connection between the PPC and an external NC control unit. A reaction telegram follows every command telegram.

#### Local error message on 3964R

There is no global error message on the PPC in the presence of a communications error at the 3964R interface. There is an error number in each reaction telegram (byte no. 4). The error is signaled to the external NC control.

This error number is stored in parameter Y-0-0057 for diagnostic purposes. This parameter is cleared upon successful completion of transmission

In this case, the display of the PPC does not display an error.

#### Error number 3964R (local error)

| Y-0-0057<br>Error | Cause   |
|-------------------|---|
| 1                 | the telegram head does not agree with the specification   |
| 2                 | a following telegram was received, but not expected or a following telegram was expected but a normal telegram received   |
| 3                 | the number of usable data does not agree with:<br>the anticipated number (as is the case with following telegrams) or<br>the block length signaled (as is the case with normal telegrams) |
| 4                 | the following applies to the demand specified in the usable data head: the demand is unknown or it is not yet supported   |
| 5                 | the demand cannot presently be performed, as the required data queue is occupied  |
| 6                 | error upon accessing A/C parameters   |
| 7                 | error upon accessing S/P parameters   |
| 9                 | the data block indicated is not available   |
| 10                | the length of the data block does not agree with the specification  |
| 14                | error when writing I/O data (too man inputs)  |

Fig. 1-18: Error number 3964R (local error)

## Global error messages on 3964R

If the communication is disturbed on the hardware level, the parameter "Host communication error counter transmission line" (Y-0-0147) is incremented by 1 whenever an error is detected. At the same time, an error message is emitted if the following conditions are fulfilled.

- Overrun error** An overrun of the character buffer of the serial interface immediately causes emission of the error message "3964R Serial interface overrun".
- Parity error, frame error** In case of failures on the serial line, one of the following error messages is displayed if at least two failures have occurred within 200 ms: "3964R Serial interface parity error" or "3964R Serial interface transmission error (frame)".
- No interface error** To be able to recognize a global error via the serial interface, which has not affected serial communications (e.g., a drive error), it is necessary
- to read parameter Y-0-0046 cyclically or after every transmission or
  - to read error outputs via the serial interface.
- If an error has occurred, then further information can be obtained via the diagnostic parameter, after parameter Y-0-0046 has been analyzed.

## Diagnosis on ARCNET

ARCNET interface has a bus structure. In other words, the arrival of received data is immediately either positively or negatively acknowledged by the PPC. This makes the bus immediately available again.

### Local error messages on ARCNET

If errors occur in the sequence, then these are stored in parameter "Serial interface error number" (Y-0-0057). This parameter always contains the status of the most recent transmission. It can also be read by the external NC control unit.

It does not, however, have to be read.

- If the telegram received is correct, then there is a response telegram with positive acknowledgement or, if necessary, with the requested data.  
⇒ Y-0-0057 = 0
- If the telegram received is not correct, then there is no response telegram.  
⇒ Y-0-0057 ≠ 0
- If a following error is discovered after a write command (e.g., S or P parameters write protected), then there is no message.  
⇒ Parameter Y-0-0057 is set to ≠ 0.

## Error number ARCNET (local error)

| Y-0-0057<br>Error | Cause   |
|-------------------|---|
| 4                 | the following applies to the demand specified in the user data head, namely, the demand is unknown or it is not supported   |
| 5                 | the demand cannot presently be executed because the queue is full   |
| 6                 | error upon accessing Y/C/A parameters   |
| 7                 | error upon accessing S/P parameters   |
| 8                 | switch mode not successful  |
| 9                 | the data block given is not available   |
| 10                | data block length does not agree with the specification   |
| 14                | error when writing I/O data (too many inputs)   |
| 21                | the telegram header does not agree with the specification   |
| 22                | a following telegram was received, but not expected or a following telegram was expected but a normal telegram received (Note: support of following telegrams)                        |
| 23                | the number of usable data does not agree with the expected number (as is the case with following telegrams) or the expected block (note: presently no support of following telegrams) |
| 24                | the ARCNET partner is sending excessive NAKs  |
| 25                | the selected partner is not an ARCNET participant   |

Fig. 1-19: ARCNET error number (local error)

## Global error messages on ARCNET

If the ARCNET node of the PPC is an active participant in the bus, the "Fieldbus - real-time channel active" ( $\_A:C01.08$ ) PPC output indicates the state of the ARCNET interface. This output is cleared in case of failures on the transmission line.

This output can be used to selectively switch off the drive enable signal of individual axes in case of fatal failures in the combinational logic system.

### Reconfiguration

If there is a failure in the communication on the hardware level, the ARCNET bus is reconfigured. The degree of the failure can be measured on the basis of the reconfigurations within a defined time interval.

### Measurement method for failure analysis

If there is a permanent failure, such as a cable that has been pulled off, the ARCNET controller runs through a reconfiguration cycle. The controller triggers a reconfiguration every 840  $\mu$ s.

The measurement method for failure analysis takes a fixed time interval of 8 reconfiguration cycles (6720  $\mu$ s) into consideration and counts the number of reconfigurations within this time interval.

The following three failure states are generated:

- uncritical (1-2 reconfigurations)
- critical (3-4 reconfigurations)
- fatal (5-8 reconfigurations)

- Uncritical failure** If no more than 2 reconfigurations are occurring during the measurement, this state is considered to be uncritical. This state neither affects error messages nor error counters.  
This type of failure can be detected only by the toggling PPC output "Fieldbus - real-time channel active" (\_A:C01.08).
- Critical failure** Whenever a critical failure of 3 to 4 reconfigurations per measurement is detected, the error counter "Host communication error counter transmission line" (Y-0-0147) is incremented by 1.
- Fatal failure** If more than 4 reconfigurations are occurring during the measurement, the transmission line is seriously disturbed. In addition to the error counter Y-0-0147 being incremented, SYNTAX200 generates the error message "ARCNET - excessive bus reconfiguration".
- No interface error** To be able to recognize a global error via the serial interface, which has not affected serial communications (e.g., a drive error), it is necessary
- to read parameter Y-0-0046 cyclically or after every transmission or
  - to read error outputs via the serial interface.
- If an error has occurred, then further information can be obtained via the diagnostic parameters, after parameter Y-0-0046 has been analyzed.

## Diagnosis on the fieldbus

The PPC diagnoses the following failures and errors, which may occur in connection with the fieldbus interface, thus permanently preventing the bus communication:

### PPC output "Fieldbus - real-time channel active"

If the PPC is in the operating mode and data is not received via the fieldbus within the fieldbus timeout, the PPC clears the output "Fieldbus - real-time channel active" (\_A:C01.08).

This output can be used to selectively switch off the drive enable signal of individual axes in case of a bus failure in the combinational logic system.

### Initialization error

The PPC monitors the initialization of the fieldbus communication task and the device driver, in order to detect a fatal failure of the fieldbus interface.

If problems arise during the initialization of the fieldbus communication task, which prevent the fieldbus slave connection from functioning properly, the PPC displays the following diagnosis after a waiting time of no more than 12 seconds:

#### **F33 (150) "Communication via the fieldbus is impossible"**

Thereafter, the run-up will be stopped; the PPC remains in the parameterization mode.

After the fieldbus communication task has been started successfully, the PPC continues to run up until it enters the operating mode. Here, it is checked whether the device driver of the slave connection is able to correctly access the hardware. If the address or interrupt setting on the fieldbus board is not correct, the PPC displays the following diagnosis:

**F33 (151) "Fieldbus: incorrect jumper setting on fieldbus board"**

In either case, it is not possible to operate the SYNAX200 application via the fieldbus interface. It is not possible to clear the diagnostic messages. Please contact the Indramat Service to eliminate the failure.

### **Errors in the configuration of the process data**

If the configuration of the process data is impermissible, the PPC displays one of the following diagnoses:

**F15 (148) "List of UDP ports in Y-0-0194 is too short (see Y-0-0129)"**

**F15 (149) "Y-0-0194: UDP port number exists twice"**

**F15 (152) "Interbus: Process data length is not supported (Y-127/128)"**

**F15 (153) "Parameter channel: Is supported by Profibus only (Y-33/129)"**

**F15 (154) "PCP channel: Is supported by Interbus only (Y-33/129)"**

**F15 (280) "Parameter Y-0-0127 not correct. Line nbr.: xxx"**

**F15 (281) "Parameter Y-0-0188 not correct. Line nbr.: xxx"**

**F15 (282) "Parameter Y-0-0189 not correct. Line nbr.: xxx"**

**F15 (283) "Parameter Y-0-0190 not correct. Line nbr.: xxx"**

**F15 (284) "Parameter Y-0-0128 not correct. Line nbr.: xxx"**

**F15 (285) "Parameter Y-0-0185 not correct. Line nbr.: xxx"**

**F15 (286) "Parameter Y-0-0186 not correct. Line nbr.: xxx"**

**F15 (287) "Parameter Y-0-0187 not correct. Line nbr.: xxx"**

The PPC stops running up and remains in the parameterization mode until the configuration is a permissible one.

---

**Note:** This error state can also be detected by the fieldbus master by evaluating the diagnostic objects 5FF5 and 5FF6.

---



## 1.6 Diagnostic parameters
















| Parameter number | Parameter name  |
|------------------|---|
| Y-0-0041         | Indramat service information                          |
| Y-0-0046         | SYNTAX - error source                                 |
| Y-0-0047         | SYNTAX - diagnostic text                              |
| Y-0-0048         | SYNTAX - error number                                 |
| Y-0-0057         | Serial interface error number                         |
| Y-0-0068         | List of invalid A, C and Y parameters                 |
| Y-0-0071         | SYNTAX - current mode                                 |
| Y-0-0105         | PPC link - MDT error counter                          |
| Y-0-0126         | Operation time counter                                |
| Y-0-0147         | Host communication: error counter transmission line   |
| Y-0-0153         | Error recorder - index                                |
| Y-0-0154         | Error recorder - diagnostic message                   |
| Y-0-0155         | Error recorder - diagnostic text                      |
| Y-0-0156         | Error recorder  |
| Y-0-0157         | Data blocks - configurable S-/P-parameters, ID-number |
| Y-0-0159         | SYNTAX - system time                                  |
| Y-0-0160         | Operation time counter                                |
| Y-0-0163         | SYNTAX - time of diagnosis                            |
| Y-0-0175         | PPC - control unit temperature                        |
| Y-0-0176         | PPC - maximum control unit temperature                |
| A-0-0095         | Drive type  |
| A-0-0108         | AT error counter                                      |
| S-0-0021         | IDN-list of invalid op. data for comm. ph. 2          |
| S-0-0022         | IDN-list of invalid op. data for comm. ph. 3          |
| S-0-0095         | Diagnostic message                                    |
| S-0-0390         | Diagnostic message number                             |
| P-0-0009         | Error message number                                  |

Fig. 1-20: Diagnostic parameters



## 2 Diagnoses and fault numbers arranged as per the display on the PPC

### 2.1 Overview

| Display      | Y-0-0048 error number | Y-0-0047 diagnostic text of PPC system                 | Y-0-0046 Diagnostic info | Binary output   | Clear with |
|--------------|-----------------------|--|--------------------------|---|------------|
| -01          | --                    | "FLASH check sum test"                                 | --                       | --  | --         |
| -02          | --                    | "SDRAM test"   | --                       | --  | --         |
| -04          | --                    | "Extended check sum test (CRC32)"                      | --                       | --  | --         |
| -05          | --                    | "Copying the firmware from Flash to SDRAM"             | --                       | --  | --         |
| -06          | --                    | "Initialization of the hardware"                       | --                       | --  | --         |
| -07          | --                    | "Initialization of the operation system"               | --                       | --  | --         |
| -10 to -1x   | --                    | "Initializations of the bootloader"                    | --                       | --  | --         |
| -20 to -2x   | --                    | "Initializations of the SYNAX system"                  | --                       | --  | --         |
| P0           | 0                     | "PPC in initialization mode"                           | 0                        |  A:C01.01<br>_A:C01.02  | --         |
| P1           | 0                     | "SERCOS interface - phase 1"                           | 0                        |  A:C01.01<br>_A:C01.02 | --         |
| P2           | 0                     | "PPC in parameter mode"                                | 0                        |  A:C01.01<br>_A:C01.02 | --         |
| P3           | 0                     | "SERCOS interface - phase 3"                           | 0                        |  A:C01.01<br>_A:C01.02 | --         |
| bb           | 0                     | "PPC in operation mode"                                | 0                        |  A:C01.01              | --         |
| ¥01¥ to ¥14¥ | --                    | "Hardware error"                                       | --                       | --  | --         |
| F HW         | 18                    | "PPC/DAQ Hardware defective: CON_CYC-Signal faulty"    | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| F HW         | 19                    | "PPC hardware defective"                               | 10000h                   | --  | --         |
| F TN         | 25                    | "PPC in test mode zero bit stream"                     | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| F ON         | 26                    | "PPC in test mode continuous light"                    | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| F01          | 01                    | "SERCOS interface - ring break"                        | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| F02          | 02                    | "SERCOS interface - no drive connected"                | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| F03          | 03                    | "Error on switching to phase 3"                        | n = address              |  A:C01.01<br>_A:C01.02 | --         |
| F04          | 04                    | "Error on switching into operating mode"               | n = address              |  A:C01.01<br>_A:C01.02 | --         |
| F05          | 05                    | "SERCOS interface - double drive telegram failure"     | n = address              |  A:C01.01<br>_A:C01.02 | --         |
| F06          | 06                    | "Fiber optic ring not closed"                          | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| F07          | 07                    | "Drive addresses not correct (see Y-0-0002, Y-0-0086)" | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |

|     |     |  |             |                                     |    |
|-----|-----|--|-------------|-------------------------------------|----|
| F08 | 08  | "Max. number of drives exceeded"                                     | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F09 | 09  | "Fatal error occurred - PPC reset necessary"                         | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F10 | 10  | "PPC-internal memory error"  | 10000h      | _A:C01.02                           | -- |
| F12 | 12  | "PPC parameter exceeds min/max value (see Y-0-0068)"                 | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F14 | 14  | "PPC checksum error" (see Y-0-0068)"                                 | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 15  | "PPC parameter not correct (see Y-0-0068)"                           | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 22  | "Parameter value limits: min-limit > max-limit (see Y-0-0068)"       | n = address | --                                  | -- |
| F15 | 34  | "Y-0-0013: Local bus input module missing. Slot-nr: xx"              | 10000h      | --                                  | -- |
| F15 | 35  | "Y-0-0013: Local bus output module missing. Slot-nr: xx"             | 10000h      | --                                  | -- |
| F15 | 144 | "Y-0-0157/Y-0-0158: Number of entries not equal"                     | 10000h      | --                                  | -- |
| F15 | 145 | "Y-0-0157: Ident-number exists twice"                                | 10000h      | --                                  | -- |
| F15 | 148 | "List of UDP ports in Y-0-0194 is too short (see Y-0-0129)"          | 10000h      | --                                  | -- |
| F15 | 149 | "Y-0-0194: UDP port number exists twice"                             | 10000h      | --                                  | -- |
| F15 | 152 | "Interbus: Process data length is not supported (Y-0127/128)"        | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 153 | "Parameter channel: Is supported by Profibus only (Y-33/129)"        | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 154 | "PCP channel: Is supported by Interbus only (Y-33/129)"              | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 155 | "Register controller, master axis - no master address (A-169)"       | n = address | --                                  | -- |
| F15 | 156 | "Register controller, master axis - no drive addresses (A-87)"       | n = address | --                                  | -- |
| F15 | 157 | "Register controller, drive axis - no master addresses (A-169)"      | n = address | --                                  | -- |
| F15 | 158 | "Register controller, drive axis - no drive addresses (A-87)"        | n = address | --                                  | -- |
| F15 | 159 | "More than 1 register controller per master axis not possible"       | n = address | --                                  | -- |
| F15 | 160 | "More than one register controller per axis not possible"            | n = address | --                                  | -- |
| F15 | 161 | "Winding axis must be in speed synchronization (A-0-0003, A-0-0146)" | n = address | --                                  | -- |
| F15 | 165 | "Y-0-0039/Y-0-0040: Number of entries not equal"                     | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 166 | "A-0-0008/Y-0-0039: Activated analogue channel not linked"           | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 167 | "More than one process controller per axis not possible"             | n = address | --                                  | -- |
| F15 | 168 | "Y-0-0040: Multiple entries of target parameter in list"             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |

|     |     |   |             |                                     |    |
|-----|-----|---|-------------|-------------------------------------|----|
| F15 | 171 | "Tension controller target address and -value wrong (A-146)"                  | n = address | --                                  | -- |
| F15 | 172 | "Dancer controlled axis must be speed synchron"                               | n = address | --                                  | -- |
| F15 | 173 | "More than one tension controller per master not possible"                    | n = address | --                                  | -- |
| F15 | 175 | "A-0-0030: Process control P-Gain too high"                                   | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 176 | "A-0-0146: Analogue channel for process control not defined"                  | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 177 | "A-0-0146: Analogue channel for process control not activated"                | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 178 | "Tension controlled axis must be speed or phase synchron"                     | n = address | --                                  | -- |
| F15 | 179 | "More than one tension controller per axis not possible"                      | n = address | --                                  | -- |
| F15 | 180 | "Parameter A-0-0038 not correct"  | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 181 | "Y-0-0013: Non-permissible DEA address (see Y-0-0002)"                        | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 182 | "Y-0-0013: Synchronization mode not permissible (A-0-0003)"                   | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 183 | "Y-0-0013: Addressed X-I/O not permissible (see Y-0-0024/Y-0-0033)"           | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 184 | "Y-0-0013: Idle mode not permissible (see A-0-0009)"                          | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 185 | "Y-0-0013: Positioning mode not permissible (see A-0-0009)"                   | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 186 | "Y-0-0013: Special mode not permissible (see A-0-0070)"                       | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 187 | "Y-0-0013: Non-permissible version of PARA.EXE"                               | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 188 | "Y-0-0013: Data integrity violated"   | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 189 | "Y-0-0013: Non-permissible DEA address (e.g. ECODRIVE)"                       | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 190 | "PPC link - other link master already active"                                 | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 192 | "Y-0-0013: PLC-interface not allowed on PPC-R without ISP"                    | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 193 | "No different feedbacks selectable (A-0-0003/A-0-0009/A-0-0070)"              | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 194 | "Phase synchr. & absolute format not possible (see A-0-0001/A-0-0003)"        | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 195 | "A-0-0003: Drive does not support selected sync. mode"                        | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 196 | "A-0-0070: Drive does not support selected special mode"                      | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 198 | "Special mode only with PPC-P possible (A-0-0070/A-0-0071/A-0-0072/A-0-0073)" | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 217 | "Too many parameters in MDT configured"                                       | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 218 | "Too many parameters in AT configured"  | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |

|     |     |  |             |                                     |    |
|-----|-----|--|-------------|-------------------------------------|----|
| F15 | 220 | "A-0-0025: Too many register controllers activated"                          | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 221 | "Serial port A (X10) multiple assigned (Y-0-0005/Y-0-0033)"                  | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 222 | "Serial port B (X16) multiple assigned (Y-0-0010/Y-0-0033)"                  | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 223 | "Cam and register control not possible (see A-0-0003/A-0-0025)"              | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 224 | "Register cont. and oscilloscope not possible (see A-0-0025/Y-0-0107)"       | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 225 | "Cam/register/osci. not possible (see A-0-0003/A-0-0025/Y-0-0107)"           | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 226 | "Drive does not support oscilloscope-function"                               | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 232 | "A-0-0009: Drive does not support selected positioning mode"                 | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 233 | "Drive locked with password (S-0-0267)"                                      | n = address | --                                  | -- |
| F15 | 236 | "Register control only possible with modulo axis (A-0-0001, A-0-0025)"       | n = address | --                                  | -- |
| F15 | 237 | "Register controlled axis without synchronization (see A-0-0003)"            | n = address | --                                  | -- |
| F15 | 240 | "Cam switches and I/O to DEA4.1 not possible (Y-0-0013, C-0-0049, A-0-0036)" | n = address | --                                  | -- |
| F15 | 241 | "Cam switches and I/O not possible (Y-0-0013, C-0-0049) slot-nr: xx"         | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 243 | "Drive does not support DEA8.1 card"   | n = address | --                                  | -- |
| F15 | 244 | "Combination of used functions not possible (relative bits)"                 | n = address | --                                  | -- |
| F15 | 245 | "Y-0-0013: Drive waypoints not possible (e. g. ECODRIVE)"                    | n = address | --                                  | -- |
| F15 | 250 | "Target axis must be synchronous axis (A-0-0133, A-0-0156)"                  | n = address | --                                  | -- |
| F15 | 251 | "Too many group parameters of one group per axis"                            | n = address | --                                  | -- |
| F15 | 263 | "Parameter Y-0-0131 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 264 | "Parameter Y-0-0132 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 280 | "Parameter Y-0-0127 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 281 | "Parameter Y-0-0188 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 282 | "Parameter Y-0-0189 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 283 | "Parameter Y-0-0190 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 284 | "Parameter Y-0-0128 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 285 | "Parameter Y-0-0185 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 286 | "Parameter Y-0-0186 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| F15 | 287 | "Parameter Y-0-0187 not correct. Line nbr.: xxx"                             | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |

|     |     |  |             |                                     |           |
|-----|-----|--|-------------|-------------------------------------|-----------|
| F16 | 20  | "Non-supported drive type "                                    | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F16 | 21  | "Non-supported drive firmware"                                 | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F17 | 105 | "Master position value corrupted. Master axis: xx"             | 10000h      | _A:L#.03<br>_A:L#.01                | _E:L#.16  |
| F17 | 106 | "Master speed limit to high (C-30, C-31). Master axis: xx"     | 10000h      | --                                  | --        |
| F17 | 107 | "Master speed limit to high (C-55, C-56). Master axis: xx"     | 10000h      | --                                  | --        |
| F17 | 109 | "C-76, C-2, C-5: Different cycles of master axes"              | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F17 | 110 | "Too many local IO's for cam switches 2 activated (C-0-0049)"  | n = address | --                                  | --        |
| F17 | 111 | "Too many DEA cards for cam switches 2 activated (C-49, A-36)" | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F17 | 112 | "Cam switch 2 - parameters C-49 and A-36 not ok"               | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F18 | 100 | "Real master axis - master encoder error"                      | n = address | _A:C01.02                           | _E:L#.16  |
| F18 | 101 | "Real master axis - redundant encoder error"                   | n = address | _A:C01.02                           | _E:L#.16  |
| F18 | 102 | "RM - Drive with master axis encoder is missing"               | n = address | --                                  | --        |
| F18 | 103 | "RM - External encoder feedback need to configure"             | n = address | --                                  | --        |
| F18 | 104 | "RM - Redundant ext. encoder feedback need to configure"       | n = address | --                                  | --        |
| F21 | 230 | "SERCOS transmission error (no drive responds)"                | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F21 | 231 | "SERCOS interface - transmission error during initialization"  | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | --        |
| F22 | 199 | "Switching to uninitialized operation mode"                    | n = address | --                                  | _E:F#.14  |
| F23 | 23  | "PPC-parameter inconsistent. Command 'Restore' (Y-0-0014)?"    | 10000h      | --                                  | --        |
| F24 | 24  | "Reinitialization necessary - Reset when changing the phase!"  | 10000h      | --                                  | --        |
| F32 | 140 | "3964R serial interface overrun"                               | 10000h      | _A:C01.03                           | _E:C01.03 |
| F32 | 141 | "3964R serial interface parity error"                          | 10000h      | _A:C01.03                           | _E:C01.03 |
| F32 | 142 | "3964R serial interface transmission error (frame)"            | 10000h      | _A:C01.03                           | _E:C01.03 |
| F32 | 143 | "ARCNET - excessive bus reconfiguration"                       | 10000h      | _A:C01.03                           | _E:C01.03 |
| F32 | 146 | "ARCNET telegram buffer: overrun error"                        | 10000h      | _A:C01.03                           | _E:C01.03 |
| F32 | 147 | "Buffer overrun: parameter are changed too fast in sequence!"  | 10000h      | _A:C01.03                           | _E:C01.03 |
| F33 | 150 | "Communication via the fieldbus is impossible"                 | 10000h      | _A:C01.03                           | --        |
| F33 | 151 | "Fieldbus: Incorrect jumper setting on fieldbus board"         | 10000h      | _A:C01.03                           | --        |
| F36 | 36  | "Local bus module - External power supply error. Slot-nr: xx"  | 10000h      | --                                  | --        |
| F40 | 40  | "PPC link - link defective"                                    | 10000h      | _A:C01.04<br>_A:C01.05              | _E:C01.04 |
| F42 | 42  | "PPC link - master position fault (MDT)"                       | 10000h      | _A:C01.04                           | _E:C01.04 |
| F43 | 43  | "PPC link - master position fault (AT)"                        | n = address | _A:C01.04                           | _E:C01.04 |

|     |          |  |             |                                     |           |
|-----|----------|--|-------------|-------------------------------------|-----------|
| F44 | 44       | "PPC link - selected link address not permitted"     | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F81 | 81       | "DAQ-board not correct (address-mapping)"            | 10000h      | --                                  | --        |
| F91 | 91       | "SERCOS interface - ASIC: Initialization error"      | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F92 | 92       | "PPC DUAL PORT RAM error"                            | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F93 | 93       | "DAQ: SERCOS interface - ASIC: initialization error" | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F94 | 94       | "PPC hardware version incorrect"                     | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | _E:C01.01 |
| F95 | 4000 + x | "Operating system error" (x = error number)          | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F97 | 260      | "PLC - Firmware version incompatible"                | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F97 | 261      | "PLC - Cycle-counter is dead"                        | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F97 | 262      | "PLC reports an error"                               | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F97 | 2000 + z | "PLC error"  | 10000h      | <del>OK</del> A:C01.01<br>_A:C01.02 | --        |
| F98 | 3000 + y | "Drive error"  | n = address | _A:F#.10                            | _E:F#.14  |

## Comments:

~~OK~~A:C01.01: PPC operating ready timing signal does not toggle (= 0 or = 1 static)















~~OK~~A:C01.01: PPC operating ready timing signal toggles

(PPC ready on DEA responds, if \_A:C01.01 is on the DEA output \_A:D#.16)










## 3 Diagnoses and fault numbers arranged as per fault number (parameter Y-0-0048)

### 3.1 Overview

| Y-0-0048 error number | Display      | Y-0-0047 diagnostic text of PPC system                 | Y-0-0046 diagnostic info | Binary output   | Clear with |
|-----------------------|--------------|--|--------------------------|---|------------|
| --                    | -01          | "FLASH check sum test"                                 | --                       | --  | --         |
| --                    | -02          | "SDRAM test"   | --                       | --  | --         |
| --                    | -04          | "Extended check sum test (CRC32)"                      | --                       | --  | --         |
| --                    | -05          | "Copying the firmware from Flash to SDRAM"             | --                       | --  | --         |
| --                    | -06          | "Initialization of the hardware"                       | --                       | --  | --         |
| --                    | -07          | "Initialization of the operation system"               | --                       | --  | --         |
| --                    | -10 to -1x   | "Initializations of the bootloader"                    | --                       | --  | --         |
| --                    | -20 to -2x   | "Initializations of the SYNAX system"                  | --                       | --  | --         |
| 0                     | P0           | "PPC in initialization mode"                           | 0                        |  A:C01.01<br>_A:C01.02  | --         |
| 0                     | P1           | "SERCOS interface - phase 1"                           | 0                        |  A:C01.01<br>_A:C01.02 | --         |
| 0                     | P2           | "PPC in parameter mode"                                | 0                        |  A:C01.01<br>_A:C01.02 | --         |
| 0                     | P3           | "SERCOS interface - phase 3"                           | 0                        |  A:C01.01<br>_A:C01.02 | --         |
| 0                     | bb           | "PPC in operation mode"                                | 0                        |  A:C01.01              | --         |
| --                    | ¥01¥ to ¥14¥ | "Hardware error"                                       | --                       | --  | --         |
| 01                    | F01          | "SERCOS interface - ring break"                        | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| 02                    | F02          | "SERCOS interface - no drive connected"                | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| 03                    | F03          | "Error on switching to phase 3"                        | n = address              |  A:C01.01<br>_A:C01.02 | --         |
| 04                    | F04          | "Error on switching into operating mode"               | n = address              |  A:C01.01<br>_A:C01.02 | --         |
| 05                    | F05          | "SERCOS interface - double drive telegram failure"     | n = address              |  A:C01.01<br>_A:C01.02 | --         |
| 06                    | F06          | "Fiber optic ring not closed"                          | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| 07                    | F07          | "Drive addresses not correct (see Y-0-0002, Y-0-0086)" | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| 08                    | F08          | "Max. number of drives exceeded"                       | 10000h                   |  A:C01.01<br>_A:C01.02 | --         |
| 09                    | F09          | "Fatal error occurred - PPC reset necessary"           | 10000h                   |  A:C01.01              | --         |
| 10                    | F10          | "PPC-internal memory error"                            | 10000h                   | _A:C01.02   | --         |

|     |      |  |             |                                      |           |
|-----|------|--|-------------|--------------------------------------|-----------|
| 12  | F12  | "PPC parameter exceeds min/max value (see Y-0-0068)"           | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 14  | F14  | "PPC checksum error (see Y-0-0068)"                            | 10000h      | <del>DRK</del> A:C01.01              | --        |
| 15  | F15  | "PPC Parameter not correct (see Y-0-0068)"                     | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 18  | F HW | "PPC/DAQ Hardware defective: CON_CYC-Signal faulty"            | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 19  | F HW | "PPC hardware defective"                                       | 10000h      | --                                   | --        |
| 20  | F16  | "Non-supported drive type "                                    | n = address | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 21  | F16  | "Non-supported drive firmware"                                 | n = address | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 22  | F15  | "Parameter value limits: min-limit > max-limit (see Y-0-0068)" | n = address | --                                   | --        |
| 23  | F23  | "PPC-parameter inconsistent. Command 'Restore' (Y-0-0014)?"    | 10000h      | --                                   | --        |
| 24  | F24  | "Reinitialization necessary - Reset when changing the phase!"  | 10000h      | --                                   | --        |
| 25  | F TN | "PPC in test mode zero bit stream"                             | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 26  | F ON | "PPC in test mode continuous light"                            | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 34  | F15  | "Y-0-0013: Local bus input module missing. Slot-nr: xx"        | 10000h      | --                                   | --        |
| 35  | F15  | "Y-0-0013: Local bus output module missing. Slot-nr: xx"       | 10000h      | --                                   | --        |
| 36  | F36  | "Local bus module - External power supply error. Slot-nr: xx"  | 10000h      | --                                   | --        |
| 40  | F40  | "PPC link - link defective"                                    | 10000h      | _A:C01.04<br>_A:C01.05               | _E:C01.04 |
| 42  | F42  | "PPC link - master position fault (MDT)"                       | 10000h      | _A:C01.04                            | _E:C01.04 |
| 43  | F43  | "PPC link - master position fault (AT)"                        | n = address | _A:C01.04                            | _E:C01.04 |
| 44  | F44  | "PPC link - selected link address not permitted"               | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 81  | F81  | "DAQ-board not correct (address-mapping)"                      | 10000h      | --                                   | --        |
| 91  | F91  | "SERCOS interface - ASIC: Initialization error"                | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 92  | F92  | "PPC DUAL PORT RAM error"                                      | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 93  | F93  | "DAQ: SERCOS interface - ASIC: initialization error"           | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | --        |
| 94  | F94  | "PPC hardware version incorrect"                               | 10000h      | <del>DRK</del> A:C01.01<br>_A:C01.02 | _E:C01.01 |
| 100 | F18  | "Real master axis - master encoder error"                      | n = address | _A:C01.02                            | _E:L#.16  |
| 101 | F18  | "Real master axis - redundant encoder error"                   | n = address | _A:C01.02                            | _E:L#.16  |
| 102 | F18  | "RM - Drive with master axis encoder is missing"               | n = address | --                                   | --        |
| 103 | F18  | "RM - External encoder feedback need to configure"             | n = address | --                                   | --        |
| 104 | F18  | "RM - Redundant ext. encoder feedback need to configure"       | n = address | --                                   | --        |
| 105 | F17  | "Master position value corrupted. Master axis: xx"             | 10000h      | _A:L#.03<br>_A:L#.01                 | _E:L#.16  |

|     |     |  |             |   |           |
|-----|-----|--|-------------|---|-----------|
| 106 | F17 | "Master speed limit to high (C-30, C-31). Master axis: xx"           | 10000h      | --  | --        |
| 107 | F17 | "Master speed limit to high (C-55, C-56). Master axis: xx"           | 10000h      | --  | --        |
| 109 | F17 | "C-76, C-2, C-5: Different cycles of master axes"                    | 10000h      |  A:C01.01<br>_A:C01.02   | --        |
| 110 | F17 | "Too many local IO's for cam switches 2 activated (C-0-0049)"        | n = address | --  | --        |
| 111 | F17 | "Too many DEA cards for cam switches 2 activated (C-49, A-36)"       | n = address |  A:C01.01<br>_A:C01.02   | --        |
| 112 | F17 | "Cam switch 2 - parameters C-49 and A-36 not ok"                     | n = address |  A:C01.01<br>_A:C01.02   | --        |
| 140 | F32 | "3964R serial interface overrun"                                     | 10000h      | _A:C01.03   | _E:C01.03 |
| 141 | F32 | "3964R serial interface parity error"                                | 10000h      | _A:C01.03   | _E:C01.03 |
| 142 | F32 | "3964R serial interface transmission error (frame)"                  | 10000h      | _A:C01.03   | _E:C01.03 |
| 143 | F32 | "ARCNET - excessive bus reconfiguration"                             | 10000h      | _A:C01.03   | _E:C01.03 |
| 144 | F15 | "Y-0-0157/Y-0-0158: Number of entries not equal"                     | 10000h      | --  | --        |
| 145 | F15 | "Y-0-0157: Ident-number exists twice"                                | 10000h      | --  | --        |
| 146 | F15 | "ARCNET telegram buffer: overrun error"                              | 10000h      | _A:C01.03   | _E:C01.03 |
| 147 | F32 | "Buffer overrun: parameter are changed too fast in sequence!"        | 10000h      | _A:C01.03   | _E:C01.03 |
| 148 | F15 | "List of UDP ports in Y-0-0194 is too short (see Y-0-0129)"          | 10000h      | --  | --        |
| 149 | F15 | "Y-0-0194: UDP port number exists twice"                             | 10000h      | --  | --        |
| 150 | F33 | "Communication via the fieldbus is impossible"                       | 10000h      | _A:C01.03   | --        |
| 151 | F33 | "Fieldbus: Incorrect jumper setting on fieldbus board"               | 10000h      | _A:C01.03   | --        |
| 152 | F15 | "Interbus: Process data length is not supported (Y-0127/128)"        | 10000h      |  A:C01.01<br>_A:C01.02 | --        |
| 153 | F15 | "Parameter channel: Is supported by Profibus only (Y-33/129)"        | 10000h      |  A:C01.01<br>_A:C01.02 | --        |
| 154 | F15 | "PCP channel: Is supported by Interbus only (Y-33/129)"              | 10000h      |  A:C01.01<br>_A:C01.02 | --        |
| 155 | F15 | "Register controller, master axis - no master address (A-169)"       | n = address | --  | --        |
| 156 | F15 | "Register controller, master axis - no drive addresses (A-87)"       | n = address | --  | --        |
| 157 | F15 | "Register controller, drive axis - no master addresses (A-169)"      | n = address | --  | --        |
| 158 | F15 | "Register controller, drive axis - no drive addresses (A-87)"        | n = address | --  | --        |
| 159 | F15 | "More than 1 register controller per master axis not possible"       | n = address | --  | --        |
| 160 | F15 | "More than one register controller per axis not possible"            | n = address | --  | --        |
| 161 | F15 | "Winding axis must be in speed synchronization (A-0-0003, A-0-0146)" | n = address | --  | --        |
| 165 | F15 | "Y-0-0039/Y-0-0040: Number of entries not equal"                     | 10000h      |  A:C01.01<br>_A:C01.02 | --        |

|     |     |  |             |                                     |    |
|-----|-----|--|-------------|-------------------------------------|----|
| 166 | F15 | "A-0-0008/Y-0-0039: Activated analogue channel not linked"             | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 167 | F15 | "More than one process controller per axis not possible"               | n = address | --                                  | -- |
| 168 | F15 | "Y-0-0040: Multiple entries of target parameter in list"               | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 171 | F15 | "Tension controller target address and -value wrong (A-146)"           | n = address | --                                  | -- |
| 172 | F15 | "Dancer controlled axis must be speed synchron"                        | n = address | --                                  | -- |
| 173 | F15 | "More than one tension controller per master not possible"             | n = address | --                                  | -- |
| 175 | F15 | "A-0-0030: Process control P-Gain too high"                            | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 176 | F15 | "A-0-0146: Analogue channel for process control not defined"           | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 177 | F15 | "A-0-0146: Analogue channel for process control not activated"         | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 178 | F15 | "Tension controlled axis must be speed or phase synchron"              | n = address | --                                  | -- |
| 179 | F15 | "More than one tension controller per axis not possible"               | n = address | --                                  | -- |
| 180 | F15 | "Parameter A-0-0038 not correct"                                       | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 181 | F15 | "Y-0-0013: Non-permissible DEA address (see Y-0-0002)"                 | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 182 | F15 | "Y-0-0013: Synchronization mode not permissible (A-0-0003)"            | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 183 | F15 | "Y-0-0013: Addressed X-I/O not permissible (see Y-0-0024/Y-0-0033)"    | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 184 | F15 | "Y-0-0013: Idle mode not permissible (see A-0-0009)"                   | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 185 | F15 | "Y-0-0013: Positioning mode not permissible (see A-0-0009)"            | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 186 | F15 | "Y-0-0013: Special mode not permissible (see A-0-0070)"                | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 187 | F15 | "Y-0-0013: Non-permissible version of PARA.EXE"                        | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 188 | F15 | "Y-0-0013: Data integrity violated"                                    | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 189 | F15 | "Y-0-0013: Non-permissible DEA address (e.g. ECODRIVE)"                | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 190 | F15 | "PPC link - other link master already active"                          | 10000 h     | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 192 | F15 | "Y-0-0013: PLC-interface not allowed on PPC-R without ISP"             | 10000h      | <del>DK</del> A:C01.01              | -- |
| 193 | F15 | "No different feedbacks selectable (A-0-0003/A-0-0009/A-0-0070)"       | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 194 | F15 | "Phase synchr. & absolute format not possible (see A-0-0001/A-0-0003)" | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 195 | F15 | "A-0-0003: Drive does not support selected sync. Mode"                 | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |
| 196 | F15 | "A-0-0070: Drive does not support selected special mode"               | n = address | <del>DK</del> A:C01.01<br>_A:C01.02 | -- |

|     |     |   |             |  |          |
|-----|-----|---|-------------|--|----------|
| 198 | F15 | "Special mode only with PPC-P possible (A-0-0070/A-0-0071/A-0-0072/A-0-0073)" | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 199 | F22 | "Switching to uninitialized operation mode"                                   | n = address | --   | _E:F#.14 |
| 217 | F15 | "Too many parameters in MDT configured"                                       | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 218 | F15 | "Too many parameters in AT configured"  | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 220 | F15 | "A-0-0025: Too many register controllers activated"                           | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 221 | F15 | "Serial port A (X10) multiple assigned (Y-0-0005/Y-0-0033)"                   | 10000 h     | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 222 | F15 | "Serial port B (X16) multiple assigned (Y-0-0010/Y-0-0033)"                   | 10000 h     | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 223 | F15 | "Cam and register control not possible (see A-0-0003/A-0-0025)"               | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 224 | F15 | "Register cont. And oscilloscope not possible (see A-0-0025/Y-0-0107)"        | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 225 | F15 | "Cam/register/osci. Not possible (see A-0-0003/A-0-0025/Y-0-0107)"            | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 226 | F15 | "Drive does not support oscilloscope-function"                                | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 230 | F21 | "SERCOS transmission error (no drive responds)"                               | 10000h      | _A:C01.02<br><del>DR</del> A:C01.01<br>_A:C01.02 | --       |
| 231 | F21 | "SERCOS interface - transmission error during initialization"                 | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 232 | F15 | "A-0-0009: Drive does not support selected positioning mode"                  | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 233 | F15 | "Drive locked with password (S-0-0267)"                                       | n = address | --   | --       |
| 236 | F15 | "Register control only possible with modulo axis (A-0-0001, A-0-0025)"        | n = address | --   | --       |
| 237 | F15 | "Register controlled axis without synchronization (see A-0-0003)"             | n = address | --   | --       |
| 240 | F15 | "Cam switches and I/O to DEA4.1 not possible (Y-0-0013, C-0-0049, A-0-0036)"  | n = address | --   | --       |
| 241 | F15 | "Cam switches and I/O not possible (Y-0-0013, C-0-0049) slot-nr: xx"          | n = address | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 243 | F15 | "Drive does not support DEA8.1 card"  | n = address | --   | --       |
| 244 | F15 | "Combination of used functions not possible (relative bits)"                  | n = address | --   | --       |
| 245 | F15 | "Y-0-0013: Drive waypoints not possible (e. g. ECODRIVE)"                     | n = address | --   | --       |
| 250 | F15 | "Target axis must be synchronous axis (A-0-0133, A-0-0156)"                   | n = address | --   | --       |
| 251 | F15 | "Too many group parameters of one group per axis"                             | n = address | --   | --       |
| 260 | F97 | "PLC - Firmware-version incompatible"   | 10000h      | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 261 | F97 | "PLC - Cycle-counter is dead"   | 10000h      | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |
| 262 | F97 | "PLC reports an error"  | 10000h      | <del>DR</del> A:C01.01<br>_A:C01.02              | --       |

|          |     |  |             |                                     |          |
|----------|-----|--|-------------|-------------------------------------|----------|
| 263      | F15 | "Parameter Y-0-0131 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 264      | F15 | "Parameter Y-0-0132 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 280      | F15 | "Parameter Y-0-0127 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 281      | F15 | "Parameter Y-0-0188 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 282      | F15 | "Parameter Y-0-0189 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 283      | F15 | "Parameter Y-0-0190 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 284      | F15 | "Parameter Y-0-0128 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 285      | F15 | "Parameter Y-0-0185 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 286      | F15 | "Parameter Y-0-0186 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 287      | F15 | "Parameter Y-0-0187 not correct. Line nbr.: xxx" | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 2000 + z | F97 | "PLC error"                                      | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |
| 3000 + y | F98 | "Drive error"                                    | n = address | _A:F#.10                            | _E:F#.14 |
| 4000 + x | F95 | "Operating system error" (x = error number)      | 10000h      | <del>DK</del> A:C01.01<br>_A:C01.02 | --       |

## Comments:

~~DK~~ A:C01.01: PPC operating ready timing signal does not toggle (= 0 or = 1 static)

~~DK~~ A:C01.01: PPC operating ready timing signal toggles

(PPC ready on DEA responds, if \_A:C01.01 is on the DEA output \_A:D#.16)

## 4 Definition of the error messages

### -01 to -2x Initialization messages

During initialization of the PPC, the numbers -01 to -2x are run through. If an error occurs during the initialization, the initialization message remains on the display.

**Remedy:**

- Contact Indramat customer service.

### ¥01¥ to ¥14¥ Hardware error

**Remedy:**

- Replace PPC or PSM and send it to Indramat customer service.

### F HW (18) "PPC/DAQ Hardware defective: CON\_CYC-Signal faulty"

**Y-0-0048: 18** During the internal hardware check, the PPC detected that the CON\_CYC signal was incorrect.

**Cause:**

- Hardware defective.

**Remedy:**

- Replace PPC and DAQ and send it to Indramat customer service.

### F HW (19) "PPC hardware defective"

**Y-0-0048: 19** The hardware test of the PPC resulted in an error.

**Remedy:**

- Replace PPC and send it to Indramat customer service.

### F TN (25) "PPC in test mode zero bit stream"

**Y-0-0048: 25** The test mode "zero bit stream" was selected in parameter "SERCOS interface - configuration" (Y-0-0038). The PPC then sends zero bit current and prevents progression.

**Remedy:**

- Correct Y-0-0038 and enter initialization mode.

## F ON (26) "PPC in test mode continuous light"

**Y-0-0048: 26** The test mode "continuous light" was selected in parameter "SERCOS interface - configuration" (Y-0-0038). The PPC then generates a steady light and thus prevents progression.

**Remedy:**

- Correct Y-0-0038 and enter initialization mode.

## F01 (01) "SERCOS interface - ring break"

**Y-0-0048: 01** There is a break in the SERCOS interface fiber optic cable ring.

**Remedy:**

- Switch machine off
- Repair SERCOS interface ring
- Switch machine on

## F02 (02) "SERCOS interface - no drives connected"

**Y-0-0048: 02** After powering up or progression into operating mode, the PPC attempts to contact the drives via the SERCOS interface (LWL) ring. In this case, the attempt was not successful. The LWL ring is, however, closed.

**Cause:**

- there is no drive in the LWL ring
- drive address(es) is (are) set to "0"

## F03 (03) "Error on switching to phase 3"

**Y-0-0048: 03** *Example:* "Parameter incomplete (-> S-0-0021)":

An error occurred when running up the LWL (fiber optic cable) ring prior to reaching an intermediate stage of communications phase 3. The drive diagnoses the error and signals this diagnosis to its parameter "Diagnostic message" (S-0-0095). The PPC then reads this parameter and copies it into parameter "SYNTAX - diagnostic text" (Y-0-0047).

---

**Note:** "Error on switching to phase 3" is then in parameter "SYNTAX - diagnostic text" (Y-0-0047) instead of, e.g., "parameter incomplete" (-> S-0-0021)".

---

**Remedy:**

- See drive command error C1/xx



## F04 (04) "Error on switching into operating mode"

**Y-0-0048: 04** *Example:* "Error master encoder":

An error occurred when running up the LWL ring prior to reaching operating mode. The drive affected diagnosis of the error and signals it to its parameter "Diagnostic message" (S-0-0095). The PPC reads this parameter and copies it into parameter "SYNTAX - diagnostic text" (Y-0-0047).

**Remedy:**

- See drive command error C2/xx.

---

**Note:** "Error when switching into operating mode" will be in parameter "SYNTAX - diagnostic text" (Y-0-0047) instead of, e.g., "error master encoder".

---

## F05 (05) "SERCOS interface - double drive telegram failure"

**Y-0-0048: 05** The telegram of a drive has failed at least twice.

**Cause:**

- LWL ring is defective
- drive is defective

**Remedy:**

- repair SERCOS interface ring or
- replace the respective drive

## F06 (06) "Fiber optic ring not closed"

**Y-0-0048: 06** SYNTAX200 checks, prior to phase progression, whether the LWL (fiber optic cable) ring is closed or not. This diagnosis can only take place during phase progression. SYNTAX200 waits until (without timeout) the LWL ring is closed.

If the LWL ring has closed once, then a break is evaluated as a failure. In this case, the error message "SERCOS interface - ring break" (01) is generated.

**Cause:**

- The LWL ring is not closed.

**Remedy:**

- Drive controller not on, check power supply unit.
- Check fiber optic cable ring, make necessary adjustments.

## F07 (07) "Drive addresses not correct (see Y-0-0002, Y-0-0086)"

**Y-0-0048: 07** The list of drive addresses in Y-0-0002 does not agree with the addresses of the drive that are in the ring.

### Cause:

- The connected drive addresses do not correspond to the projected drive addresses (Y-0-0002).
- All projected drive addresses (Y-0-0002) were deactivated (Y-0-0086).

### Remedy:

- Correct the number of drives of the drive addresses set.
- Correct the drive addresses set in Y-0-0002.
- Check the addresses set in Y-0-0086 (generally an empty list!)
- Switch into initialization mode.
- Switch into operating mode.

## F08 (08) "Max. number of drives exceeded"

**Y-0-0048: 08** The parameterization has brought about a state where even an increase in the SERCOS interface cycle time does not suffice to operate the number of drives with the functions which have been set.

### Remedy:

- Reduce the number of drives or
- reduce the functions of the drive, i.e., no positioning mode, no tension controller, no idle, fewer analogue channels, fewer process controllers, etc.).

## F09 (09) "Fatal error occurred - PPC reset necessary"

**Y-0-0048: 09** A serious SERCOS interface error or an operating system error has previously occurred. Any further SYNTAX200 mode progressions are not possible.

A progression is now only possible by switching the PPC off and on or reset the PPC.

### Cause:

- SERCOS interface - ring interrupt
- SERCOS interface - double drive telegram failure (e.g., due to loose fiber optic cable connection, a too tight bend radius or a fiber optic cable that is too long and so on.)
- operating system error

### Remedy:

- See error 01, error 05 or error 95
- PPC must be turned off and on or reset!

## F10 (10) "PPC-internal memory error"

**Y-0-0048: 10** The PPC monitors the areas of the RAM on a cyclical basis when in operation mode. This error message is set when an invalid storage entry is detected.

**Cause:**

- The PPC internal storage monitor detects an invalid entry in the RAM.

**Remedy:**

- Replace PPC and send it to Indramat customer service.

## F12 (12) "PPC parameter exceeds min./max. value (see Y-0-0068)"

**Y-0-0048: 12** The value of a parameter exceeds its defined min./max. input value. The affected parameters will be entered into the "List of invalid A, C and Y parameters" (Y-0-0068).

**Remedy:**

- Read out parameter Y-0-0068
- Correct the input value of the respective parameter.

## F14 (14) "PPC checksum error (see Y-0-0068)"

**Y-0-0048: 14** The PPC checks the validity of all A/C parameters by means of a checksum. Every parameter that is challenged during this sum is entered in the "List of invalid A, C and Y parameters" (Y-0-0068).

**Cause:**

- New programming module PSM, parameter was not yet inscribed.
- Parameter loss.

**Remedy:**

- Load the parameter.
- Write into the challenged parameter, e.g., via SynTop.

## F15 General procedure with this PPC display

A list of errors indicating faulty parameterization is a series of subdisplays to this display.

In this case, it is necessary to alter one or more parameters. To do so requires connecting a user interface, e.g., SynTop.

The diagnostic parameters Y-0-0046 through Y-0-0048 specify those parameters which must be changed.

**F15 (15) "PPC parameter not correct (see Y-0-0068)"**

**Y-0-0048: 15** A number of parameters are acknowledged as invalid during the plausibility check. The relevant parameters are entered into the "List of invalid A, C and Y parameters" (Y-0-0068).

**Remedy:**

- Read out parameter Y-0-0068.
- Correct the input value of the relevant parameter.

**F15 (22) "Parameter value limits: min-limit > max-limit (see Y-0-0068)"**

**Y-0-0048: 22** The parameter value for the minimum limit value exceeds the value for the maximum limit value.

**Remedy:**

- Minimum and maximum limit values must be changed.

**F15 (34) "Y-0-0013: Local bus input module missing. Slot-nr: xx"**

**Y-0-0048: 34** In the I/O logic, the inputs (e.g., \_E:Zxx.01) of a non-existent local input modules are used. "xx" are the slot numbers 1 through 15.

**Remedy:**

- Insert the local bus input module or
- remove the relevant instruction out of the I/O logic.

**F15 (35) "Y-0-0013: Local bus output module missing. Slot-nr: xx"**

**Y-0-0048: 35** In the I/O logic, outputs (e.g., \_A:Zxx.01) of a non-existent local bus output module are used. "xx" are the slot numbers 1 through 15.

**Remedy:**

- Insert the local bus output module or
- remove the relevant instructions out of the I/O logic

**F15 (144) "Y-0-0157/Y-0-0158: Number of entries not equal"**

**Y-0-0048: 144** For the transmission of data blocks accessing drive parameters of deactivated drives, the user can extend the PPC-internal S/P priority list using the parameters Y-0-0157 and Y-0-0158.

While switching from phase 2 to 3, the PPC checks the number of entries in Y-0-0157 and Y-0-0158. Given an unequal number of entries, this error message is generated.

**Cause:**

- Number of entries in Y-0-0157 and Y-0-0158 not equal.

**Remedy:**

- To each in Y-0-0157 entered ID number, the corresponding data length must be entered in Y-0-0158 and converted.

## F15 (145) "Y-0-0157: Ident-number exists twice"

**Y-0-0048: 145** For the transmission of data blocks accessing drive parameters of deactivated drives, the user can extend the PPC-internal S/P priority list using the parameters Y-0-0157 and Y-0-0158.

While switching from phase to 3 the PPC internally sorts the number of entries in "Data blocks - configurable S-/P-parameters, ID-number" (Y-0-0157). If the PPC discovers a double number of ID numbers, then this error message is generated.

### Cause:

- ID number double in Y-0-0157.

### Remedy:

- Clear the double ID numbers in Y-0-0157.
- If needed, match number and allocation of entries in "Data blocks - configurable S-/P-parameters, ID-number" (Y-0-0157).

## F15 (148) "List of UDP ports in Y-0-0194 is too short (see Y-0-0129)"

**Y-0-0048: 148** The Ethernet interface supports up to four master. These masters can communicate cyclically with SYNAX as a slave via separate UDP ports as well as acyclically via a shared TCP port.

SYNTAX checks during switching from parameterization to operating mode before powering up, if the number of supported Ethernet masters (see "Fieldbus - control bits", Y-0-0129) is not greater than the number of the configured UDP port numbers in the list of the UDP ports (see "PPC - UDP ports", Y-0-0194). Otherwise diagnosis 148 is signaled.

### Remedy:

- The number of the configured UDP port numbers (see Y-0-0194) must be increased and the number of the supported Ethernet masters (see Y-0-0129) must be adjusted.

## F15 (149) "Y-0-0194: UDP port number exists twice"

**Y-0-0048: 149** The Ethernet interface supports up to four master. These masters can communicate cyclically with SYNAX as a slave via separate UDP ports as well as acyclically via a shared TCP port.

SYNTAX checks during switching from parameterization to operating mode before powering up, if none of the configured UDP port numbers in the list of the UDP ports (see "PPC - UDP ports", Y-0-0194) exist several times. Otherwise diagnosis 149 is signaled.

### Remedy:

- The configured UDP port numbers (see Y-0-0194) must all be different.

**F15 (152) "Interbus: Process data length is not supported (Y-127/128)"**

**Y-0-0048: 152** The established lengths for the process input (Y-0-0127) and output data (Y-0-0128) are not permissible for the Interbus interface.

According to the Interbus standard, the following is not permissible:

- Unequal lengths of process input and output data
- Process data lengths of:
  - 0 words
  - 11 words
  - 13 words
  - 15 words
- more than 16 words (not possible because of the IBS hardware)

**Remedy:**

- The process data lengths in Y-0-0127 and Y-0-0128 must be configured under observation of the permissible values.

**F15 (153) "Parameter channel: Is supported by Profibus only (Y-33/129)"**

**Y-0-0048: 153** In the "Fieldbus - control bits" (Y-0-0129), the parameter channel is configured though no Profibus interface has been parameterized in the "Host communication - control word" (Y-0-0033).

**Remedy:**

- The parameters Y-0-0033 and Y-0-0129 must be tuned to each other.

**F15 (154) "PCP channel: Is supported by Interbus only (Y-33/129)"**

**Y-0-0048: 154** In the "Fieldbus - control bits" (Y-0-0129), the PCP channel is configured though no Interbus interface has been parameterized in the "Host communication - control word" (Y-0-0033).

**Remedy:**

- The parameters Y-0-0033 and Y-0-0129 must be adjusted to each other

**F15 (155) "Register controller, master axis - no master address (A-169)"**

**Y-0-0048: 155** Register controller affects master axis is set in parameter A-0-0107. But there are no master addresses entered in parameter "Process control - master axis addresses" (A-0-0169).

**Remedy:**

- Enter the address of the master axis to control in parameter "Process control - master axis addresses" (A-0-0169).

**F15 (156) "Register controller, master axis - no drive addresses (A-87)"**

**Y-0-0048: 156** Register controller affects master axis is set in parameter A-0-0107. But there are addresses entered for the control affects following axis in parameter "Process control - drive addresses" (A-0-0087).

**Remedy:**

- Clear drive addresses in parameter "Process control - drive addresses" (A-0-0087).

**F15 (157) "Register controller, drive axis - no master addresses (A-169)"**

**Y-0-0048: 157** Register controller affects following axis is set in parameter A-0-0107. But there are addresses entered for the control affects master axis in parameter "Process control - master axis addresses" (A-0-0169).

**Remedy:**

- Clear master axis addresses in parameter "Process control - master axis addresses" (A-0-0169).

**F15 (158) "Register controller, drive axis - no drive addresses (A-87)"**

**Y-0-0048: 158** Register controller affects following axis is set in parameter A-0-0107. But there are no drive addresses entered for the controller affects following axis in parameter "Process control - drive addresses" (A-0-0087).

**Remedy:**

- Enter drive addresses of the axis to control in parameter "Process control - drive addresses" (A-0-0087).

**F15 (159) "More than 1 register controller per master axis not possible"**

**Y-0-0048: 159** More than one register controller is working the specified master axis or one master axis is entered several times in parameter A-0-0169.

**Remedy:**

- Deactivate register controller (A-0-0025)
- Correct register controlled axes (A-0-0169)

**F15 (160) "More than one register controller per axis not possible"**

**Y-0-0048: 160** More than one register controller is working the specified axis.

**Remedy:**

- Deactivate register controller (A-0-0025)
- Correct register controlled axes (A-0-0087)

**F15 (161) "Winding axis must be in speed synchronization (A-0-0003, A-0-0146)"**

**C-0-0048: 161** The winding function (see "Process control - control word 2", A-0-0146) for the specified axis (see Y-0-0046) is activated.

This winding axis must be speed synchronous.

**Remedy:**

- Deactivate the winding ("Process control - control word 2", A-0-0146) or
- parameterize the winding axis as a speed synchronous axis ("Synchronization mode", A-0-0003).

**F15 (165) "Y-0-0039/Y-0-0040: Number of entries not equal"**

**Y-0-0048: 165** The parameters "Analogue channels - select source parameters" (Y-0-0039) and "Analogue channels - select target parameters" (Y-0-0040) are of unequal length.

**Remedy:**

- Correct the input value of the parameter.

**F15 (166) "A-0-0008/Y-0-0039: Activated analogue channel not linked"**

**Y-0-0048: 166** An analogue input activated in parameter "Analogue channels - analogue input control word" (A-0-0008) is not linked to parameter "Analogue channels - select source parameters" (Y-0-0039).

**Remedy:**

- Deactivate the channel in "Analogue channels - analogue input control word" (A-0-0008) or
- Change "Analogue channels - select source parameters" (Y-0-0039).

**F15 (167) "More than one process controller per axis not possible"**

**Y-0-0048: 167** More than one process controller has been activated, see "Process control - control word 1" (A-0-0025) or "Process control - control word 2" (A-0-0146).

Each slave axis may only activate one process controller.

**Remedy:**

- Deactivate process controller ("Process control - control word 1" (A-0-0025) or "Process control - control word 2" (A-0-0146)).



**F15 (168) "Y-0-0040: Multiple entries of target parameter in list"**

**Y-0-0048: 168** When checking the list "Analogue channels - select target parameters" (Y-0-0040) at least one double available target parameter was found.

**Remedy:**

- Remove double available target parameters from the list.

**F15 (171) "Tension controller target address and -value wrong (A-146)"**

**Y-0-0048: 171** A tension controller with load cell is parameterized, but the parameterization in parameter "Process control - control word 2" (A-0-0146) for the selection of the target address (bit 6,7) and for the selection of the target value (bit 8) does not match.

**Cause:**

- Parameter "Process control - control word 2" (A-0-0146) is parameterized wrong.

**Remedy:**

- Reparameterize bits 6, 7 and 8 in parameter A-0-0146.

**F15 (172) "Dancer controlled axis must be speed synchron"**

**Y-0-0048: 172** The specified axis (see A-0-0146) is parameterized as a dancer controlled axis (see "Process control - control word 2", A-0-0146). This dancer controlled axis must be speed synchronous.

**Remedy:**

- Deactivate tension controller with dancer ("Process control - control word 2", A-0-0146)
- Parameterize the tension controller with dancer as a speed synchronous axis.

**F15 (173) "More than one tension controller per master not possible"**

**Y-0-0048: 173** More than one tension controller is working the specified master axis, or one master axis address is entered several time in parameter A-0-0169.

**Remedy:**

- Deactivate tension controller (A-0-0146).
- Correct tension controlled axis (A-0-0169).

**F15 (175) "A-0-0030: Process control P-gain too high"**

**Y-0-0048: 175** An error in calculation would result from the value set in "Process controller - proportional gain 1" (A-0-0030) (value too big).

**Remedy:**

- Reduce parameter "Process controller - proportional gain 1" (A-0-0030).

**F15 (176) "A-0-0146: Analogue channel for process control not defined"**

**Y-0-0048: 176** A process controller has been set in the relevant axis (for address see "SYNTAX - error source" (Y-0-0046)).

Via parameter "Analogue channels - select target parameters" (Y-0-0040) the actual value for the process controller "Process actual value" (A-0-0027) must be allocated to an analogue input.

**Remedy:**

- Define an analogue input for the parameter "Process actual value" (A-0-0027) or
- Deactivate the process controller in "Process control - control word 2" (A-0-0146).

**F15 (177) "A-0-0146: Analogue channel for the process control not activated"**

**Y-0-0048: 177** A process controller has been set in the relevant axis (for address see "SYNTAX - error source" (Y-0-0046)).

An analogue channel must be activated via parameter

- "Analogue channels - analogue input control word" (A-0-0008),
- "Analogue channels - select source parameters" (Y-0-0039) or
- "Analogue channels - select target parameters" (Y-0-0040).

**Remedy:**

- Activate an analogue input for parameter "Process actual value" (A-0-0027) or
- Deactivate process controller in "Process control - control word 2" (A-0-0146).

## F15 (178) "Tension controlled axis must be speed or phase synchron"

**Y-0-0048: 178** A tension controller (see "Process control - control word 2", A-0-0146) is activated for the specified address (see Y-0-0046). The axes controlled by this tension controller must be speed or phase synchronous.

### Remedy:

- Deactivate tension controller ("Process control - control word 2", A-0-0146)
- Parameterize the tension-controlled axes as speed or phase synchronous axes ("Synchronization mode", A-0-0003)

## F15 (179) "More than one tension controller per axis not possible"

**Y-0-0048: 179** More than one tension controller is working the specified axis.

### Remedy:

- Deactivate tension controller ("Process control - control word 2", A-0-0146)
- Correct tension controlled axes ("Process control - drive addresses", A-0-0087)

## F15 (180) "Parameter A-0-0038 not correct"

**Y-0-0048: 180** When switching from parameterization into operating mode, the PPC transmits the parameter "Bipolar torque limit" (A-0-0038) into the drive parameter "Bipolar torque/force limit value" (S-0-0092). If this should fail, then the above error message is generated.

### Remedy:

- Read out parameter "Bipolar torque/force limit value" (S-0-0092) from drive.
- If parameter S-0-0092 is in the drive, then note the min./max. of this value. Correct operating data of A-0-0038 and "Bipolar torque limit - reduced" (A-0-0037).
- If parameter S-0-0092 is not in drive, then contact Indramat customer service.

## F15 (181) "Y-0-0013: Non-permissible DEA address (see Y-0-0002)"

**Y-0-0048: 181** There are inputs and outputs of the DEA in the I/O logic, e.g., \_E:D03.01) which point to addresses of drives not accommodated for in the ring, see "Addresses projected drives" (Y-0-0002).

### Remedy:

- Remove the respective inputs in the I/O logic.
- Generate a configuration which contains the required addresses.

**F15 (182) "Y-0-0013: Synchronization mode not permissible (A-0-0003)"**

Y-0-0048: 182 Input "Synchronization mode" (\_E:F#.05) is not in the I/O logic, but the synchronization mode of the relevant drive is deactivated (A-0-0003).

**Remedy:**

- Remove the respective inputs from the I/O logic.
- Activate synchronization mode.

**F15 (183) "Y-0-0013: Addressed X-I/O not permissible (see Y-0-0024/Y-0-0033)"**

Y-0-0048: 183 X I/Os have been used in the I/O logic, but none of the following conditions have been met:

- The PPC is a PC plug-in card (PPC-P). The X I/Os, in this case, are on the dual port RAM.
- Transmission via a serial interface (legal only with PPC-R) has been set in "Host communication - control word" (Y-0-0033). The X I/Os, in this case, are on the serial interface.

Parameter "PPC - hardware version" (Y-0-0024) will tell whether this is a PPC-P or PPC-R.

**Remedy:**

- Remove the relevant inputs from the I/O logic.
- If necessary, correct parameter "Host communication - control word" (Y-0-0033).
- Contact Indramat customer service.

**F15 (184) "Y-0-0013: Idle mode not permissible (see A-0-0009)"**

Y-0-0048: 184 The input "Idle mode" (\_E:F#.06) is in the I/O logic, but the idle mode of the relevant drive has been deactivated (A-0-0009).

**Remedy:**

- Remove the relevant input in the I/O logic.
- Activate idle mode.

**F15 (185) "Y-0-0013: Positioning mode not permissible (see A-0-0009)"**

Y-0-0048: 185 Input "Positioning mode" (\_E:F#.04) is in the I/O logic, but the positioning mode of the relevant drive has been deactivated (A-0-0009).

**Remedy:**

- Remove the respective input in the I/O logic.
- Activate positioning mode.

**F15 (186) "Y-0-0013: Special mode not permissible (see A-0-0070)"**

**Y-0-0048: 186** Input "Special operation mode" (\_E:F#.23) is in the I/O logic, but no special mode has been set for the relevant drive (A-0-0070 = 0).

**Remedy:**

- Remove the relevant input in the I/O logic.
- Activate special mode.

**F15 (187) "Y-0-0013: Non-permissible version of PARA.EXE"**

**Y-0-0048: 187** The source file of the I/O logic (\*.TXT) was translated with the wrong program (PARA.EXE). The file thus translated (\*.ASC) will not run.

**Remedy:**

- Use the correct PARA.EXE version.

**F15 (188) "Y-0-0013: Data integrity violated"**

**Y-0-0048: 188** The I/O logic contains false data and cannot run.

**Cause:**

- The I/O logic was not successfully loaded.
- Parameter "I/O assignment of internal/external I/Os" (Y-0-0013) was manually altered.

**Remedy:**

- Retranslate the I/O logic (\*.TXT) with PARA.EXE.
- Load the translated I/O logic (\*.ASC).

**F15 (189) "Y-0-0013: Non-permissible DEA address (e.g., ECODRIVE)"**

**Y-0-0048: 189** Inputs and outputs are in the I/O logic, e.g., \_E:D03.01 which point to addresses of drives which do not contain a DEA.

**Remedy:**

- Remove the relevant inputs in the I/O logic or
- generate a configuration with a drive with DEA at the respective address.

## F15 (190) "PPC-link - other link master already active"

Y-0-0048: 190 There are several link masters in the master axis link.

### Cause:

- Each link participant parameterized as a link master checks whether another link master is already present or not. If there is, then this error message is generated and the PPC remains passive within the PPC link.

### Remedy:

- Check parameter Y-0-0102 of all the PPCs. The LED H11 and H12 displays whether a DAQ has been configured as a link master or slave.

## F15 (192) "Y-0-0013: PLC-Interface not allowed on PPC-R without ISP"

Y-0-0048: 192 Cause:

The functions are only available if the PPC-R is linked to an PLC (MTS-R).

### Remedy:

- Change the I/O logic: Y-0-0013 renew load.

## F15 (193) "No different feedbacks selectable (A-0-0003/A-0-0009/A-0-0070)"

Y-0-0048: 193 It is not permitted to use different encoders to position control the drive.

Example: phase synchronization on the external encoder (A-0-0003 = 0x900B) and positioning on the motor controller (A-0-0009 = 0x13)

### Remedy:

- Correct A-0-0003, A-0-0009 and A-0-0070.

## F15 (194) "Phase synchronization & absolute format not possible (see A-0-0001/A-0-0003)"

Y-0-0048: 194 Combining phase synchronization and absolute format is illegal.

### Remedy:

- Change parameter "Axis type" (A-0-0001) or "Synchronization mode" (A-0-0003).

## F15 (195) "A-0-0003: Drive does not support selected sync. mode"

**Y-0-0048: 195** The relevant drive will not support the synchronization mode specified in A-0-0003 although the value parameterized in A-0-0003 was acknowledged as correct by the PPC.

Example: An application of the external encoder was parameterized although there is no external encoder.

### Remedy:

- Check and change parameter "Synchronization mode" (A-0-0003).

## F15 (196) "A-0-0070: Drive does not support selected special mode"

**Y-0-0048: 196** The relevant drive does not support the special mode entered in A-0-0070 although the parameterized value in A-0-0070 was acknowledged as correct by the PPC.

Example: An application of the external encoder was parameterized although there is no external encoder.

### Remedy:

- Check and change parameter "Special operation mode" (A-0-0070).

## F15 (198) "Special mode only with PPC-P possible (A-0-0070/A-0-0071/A-0-0072/A-0-0073)"

**Y-0-0048: 198** A PPC-P is needed for the selected configuration of the special operating modes.

### Cause:

- If special operating modes with real-time data exchange are parameterized via the DUAL port RAM, then a PPC-P is needed.

### Remedy:

- Correct parameters A-0-0070, A-0-0071, A-0-0072 and A-0-0073.
- Use a PPC-P.

## F15 (217) "Too many parameters in MDT configured"

**Y-0-0048: 217** The number of the parameters configured in the MDT (S-0-0024) is too big.

### Cause:

- Too many functions have been activated for this axis.

### Remedy:

Minimize configuration of this axis with the following functions:

- register control
- winding control
- operating mode selection
- DEA04/DEA08

## F15 (218) "Too many parameters in AT configured"

Y-0-0048: 218 The number of the parameters configured in the AT (S-0-0016) is too big.

### Cause:

- Too many functions have been activated for this axis.

### Remedy:

Minimize configuration of this axis with the following functions:

- register control
- winding control
- analog channels
- drive cams
- DEA04/DEA08

## F15 (220) "A-0-0025: Too many register controllers activated"

Y-0-0048: 220 Too many register controllers have been activated.

### Remedy:

- Deactivate register controller (see A-0-0025).
- Runup into operating mode again.

## F15 (221) "Serial port A (X10) multiple assigned (Y-0-0005/Y-0-0033)"

Y-0-0048: 221 There is a multiple allocation of serial port A (X10) due to incorrect parameterization.

---

**Note:** Settings of the serial port can also be made via jumper S1 and display H1 of the PPC.

---

---

**Note:** Pressing and holding the S1 button after the PPC (after -10) has been switched on will cause a default setting of the communication parameters Y-0-0005 and Y-0-0033. As a result, SynTop communicates at X10 with RS232 and at 19200 baud. The parameters Y-0-0005 and Y-0-0033 must then be reparameterized using SynTop.

---

### Remedy:

Change the parameters:

- "Serial Port A device type" (Y-0-0005) or
- "Host communication - control word" (Y-0-0033).



**F15 (222) "Serial port B (X16) multiple assigned (Y-0-0010/Y-0-0033)"**

**Y-0-0048: 222** There is multiple allocation of serial interface B (X16) due to faulty parameterization.

---

**Note:** Settings of the serial port can also be made via jumper S1 and display H1 of the PPC.

---

**Remedy:**

Change parameters:

- "Serial Port B device type" (Y-0-0010) or
- "Host communication - control word" (Y-0-0033).

**F15 (223) "Cam and register control not possible (see A-0-0003/A-0-0025)"**

**Y-0-0048: 223** The functions cam and register controller with time measurement cannot be conducted simultaneously.

**Remedy:**

Change parameter:

- "Operating mode" (A-0-0003) and
- "Process control - control word 1" (A-0-0025).

**F15 (224) "Register cont. and oscilloscope not possible (see A-0-0025/Y-0-0107)"**

**Y-0-0048: 224** The functions register controller with time measurement and oscilloscope function cannot be conducted simultaneously.

**Remedy:**

Change parameters:

- "Process control - control word 1" (A-0-0025) and
- "Oscilloscope function - control word" (Y-0-0107)

**F15 (225) "Cam/register/osci. not possible (see A-0-0003/A-0-0025/Y-0-0107)"**

**Y-0-0048: 225** The functions cam, register controller and oscilloscope cannot be conducted simultaneously.

**Remedy:**

Change parameters:

- "Synchronization mode" (A-0-0003)
- "Process control - control word 1" (A-0-0025)
- "Oscilloscope function - control word" (Y-0-0107)
- "Oscilloscope function - drive addresses" (Y-0-0108)

## F15 (226) "Drive does not support oscilloscope function"

**Y-0-0048: 226** A drive was configured in parameter "Oscilloscope function - drive addresses" (Y-0-0108) which does not support the oscilloscope function.

### Remedy:

- Remove the address entered in "SYNTAX - error source" (Y-0-0046) from the parameter "Oscilloscope function - drive addresses" (Y-0-0108).

## F15 (232) "A-0-0009: Drive does not support selected positioning mode"

**Y-0-0048: 232** The relevant drive does not support the positioning parameterized in A-0-0009.

### Remedy:

- Check and change parameter "Configuration idle mode / positioning mode" (A-0-0009).

## F15 (233) "Drive locked with password (S-0-0267)"

**Y-0-0048: 233** Using parameter "Password" (S-0-0267) the drive can be locked against parameter changes.  
SYNTAX200 needs drives that are not locked.

### Remedy:

- Unlock password, see "Password" (S-0-0267).
- Call Indramat.

## F15 (236) "Register control only possible with modulo axis (see A-0-0001, A-0-0025)"

**Y-0-0048: 236** A register controller axis (see A-0-0025) must be a modulo axis (see A-0-0001).

### Remedy:

- A-0-0001 or A-0-0025 must be re-parameterized

## F15 (237) "Register controlled axis without synchronization (see A-0-0003)"

**Y-0-0048: 237** The specified axis is controlled by the register controller. This necessitates the parameterization of a synchronization operating mode.

### Remedy:

- Change the "Process control - drive addresses" (A-0-0087) of the register controller axis.
- Change the "Synchronization mode" (A-0-0003) of the specified axis.

## F15 (240) "Cam switches and I/O to DEA4.1 not possible (Y-0-0013, C-0-0049, A-0-0036)"

Y-0-0048: 240 Cams and I/O logic outputs were used on the same DEA04 drive.

### Remedy:

- Deactivate cam switch 2 (parameter "Cam switch group 2 - control word", C-0-0049).
- Output cam switch 2 at different DEA04, DEA08 or local RECO I/Os (parameter "DEA - Configuration as cam switches for master axis", A-0-0036; parameter "Cam switch group 2 - control word", C-0-0049).
- Output I/O logic outputs to different DEA04, DEA08 or local RECO I/Os (parameter "I/O - assignment of internal/external I/Os", Y-0-0013).

## F15 (241) "Cam switches and I/O not possible. (Y-0-0013, C-0-0049) slot-nr: xx"

Y-0-0048: 241 Cams and I/O logic outputs were used on the local bus output module. "xx" are the slot numbers 1 through 15.

### Remedy:

- Deactivate cam switch 2 (parameter "Cam switch group 2 - control word", C-0-0049).
- Output the outputs of the cam switch 2 on a different local bus output module (parameter "Cam switch group 2 - control word", C-0-0049).
- Output the outputs of the cam switch 2 on drive DEA (parameter "DEA - Configuration as cam switches for master axis", A-0-0036; parameter "Cam switch group 2 - control word", C-0-0049).
- Output the outputs of the I/O logic on other DEA04, DEA08 or a different local output module (parameter "I/O - assignment of internal/external I/Os", Y-0-0013).

## F15 (243) "Drive does not support DEA8.1 card"

Y-0-0048: 243 A DEA08 card was used for the specified drive in the I/O logic or in the cam switch 2.

The drive does not support this DEA08 however.

### Remedy:

- Change I/O logic (e.g., DEA04) or
- do not parameterize the cam switch 2 to the DEA08.

**F15 (244) "Combination of used functions not possible (real time bits)"**

**Y-0-0048: 244** So called real-time bits are needed via functions

- cam axis (A-0-0003)
- oscilloscope functions (Y-0-0108)
- register controller (A-0-0025)
- relative positioning (A-0-0070)

Of these, only two are present.

Too many of the listed functions were activated for the specified drive address.

Only a maximum of two functions may be activated.

**Remedy:**

- Deactivate functions not required.

**F15 (245) "Y-0-0013: Drive waypoints not possible (e. g. ECODRIVE)"**

**Y-0-0048: 245** The I/O logic (VKL) is trying to actuate drive cams (A:Wxx.yy). They are not available in the drive (P-0-0135).

**Remedy:**

- Change VKL.

**F15 (250) "Target axis must be synchronous axis (A-0-0133, A-0-0156)"**

**Y-0-0048: 250** The group command value additive 1 (A-0-0132) or the group command value additive 2 (A-0-0155) can only affect synchronous (speed synchronous, phase-synchronous and cam) axes.

Axes have, however, been entered in parameter "Group command value 1 - drive addresses" (A-0-0133) or "Group command value 2 - drive addresses" (A-0-0156) that do not meet this condition.

**Remedy:**

- Correct the addresses in A-0-0133 or A-0-0156 or
- change synchronization mode in A-0-0003.

**F15 (251) "Too many group parameters of one group per axis"**

**Y-0-0048: 251** Only one group parameter per group can effect an axis.

More than one group parameter link per group (one or two) is, however, present for the specified drive address.

**Remedy:**

- Check parameter "Group command value 1 - drive addresses" (A-0-0133) and "Group command value 2 - drive addresses" (A-0-0156) of all axes and ensure that no drive address has been entered or is listed twice.

There are group parameters of group 1 and group 2 at one axis possible.

**F15 (263) "Parameter Y-0-0131 not correct. Line nbr.: xxx"**

**Y-0-0048: 263** There's a parameter entered in Y-0-0131 that is not permissible for the following reasons:

1. list parameter ,
2. using S or P parameters the data length must be known by the PPC internal preferred list or by parameters Y-0-0157/Y-0-0158,
3. the configuration of the parameters Y-0-0200 to Y-0-0463 is not useful and therefore not permitted.

"xxx" in the error number stands for the line number in parameter Y-0-0131

**Remedy:**

- Parameterize Y-0-0131 correctly or make the data length known with Y-0-0157/Y-0-0158 when using S and P parameters.

**F15 (264) "Parameter Y-0-0132 not correct. Line nbr.: xxx"**

**Y-0-0048: 264** There's a parameter entered in Y-0-0132 that is not permissible for the following reasons:

1. list parameters,
2. parameter write protected in operating mode,
3. using S or P parameters the data length must be known by the PPC internal preferred list or by parameters Y-0-0157/Y-0-0158.
4. the configuration of the parameters Y-0-0200 to Y-0-0463 is not useful and therefore not permitted.

"xxx" in the error number stands for the line number in parameter Y-0-0132.

**Remedy:**

- Parameterize Y-0-0132 correctly or make the data length known with Y-0-0157/Y-0-0158 when using S and P parameters.

## F15 (280) "Parameter Y-0-0127 not correct. Line nbr.: xxx"

**Y-0-0048: 280** The content of the configuration list Y-0-0127 for the process input data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0127 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F15 (281) "Parameter Y-0-0188 not correct. Line nbr.: xxx"

**Y-0-0048: 281** The content of the configuration list Y-0-0188 for the process input data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0188 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F15 (282) "Parameter Y-0-0189 not correct. Line nbr.: xxx"

**Y-0-0048: 282** The content of the configuration list Y-0-0189 for the process input data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0189 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F15 (283) "Parameter Y-0-0190 not correct. Line nbr: xxx"

**Y-0-0048: 283** The content of the configuration list Y-0-0190 for the process input data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0190 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F15 (284) "Parameter Y-0-0128 not correct. Line nbr.: xxx"

**Y-0-0048: 284** The content of the configuration list Y-0-0128 for the process output data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0128 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F15 (285) "Parameter Y-0-0185 not correct. Line nbr.: xxx"

**Y-0-0048: 285** The content of the configuration list Y-0-0185 for the process output data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0185 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.



## F15 (286) "Parameter Y-0-0186 not correct. Line nbr.: xxx"

**Y-0-0048: 286** The content of the configuration list Y-0-0186 for the process output data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0186 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F15 (287) "Parameter Y-0-0187 not correct. Line nbr.: xxx"

**Y-0-0048: 287** The content of the configuration list Y-0-0187 for the process output data is not correct. The fault identified first appears in line xxx. The following faults can occur:

- **No line number xxx is shown:**  
The process data length is greater than the permissible 32 words.
- **Line number xxx points out the element behind the last list entry:**  
The configuration element for the end of the static part (Y-0-0197) or the end of a multiplex level (Y-0-0198) as termination of the configuration list is missing.
- **Configuration element Y-0-0197 is shown in line xxx:**  
In the parameter list for the static part of the process data channel, there is already a configuration element for the end of a multiplex level (Y-0-0198).
- **Configuration element Y-0-0198 is shown in line xxx :**  
Too many multiplex levels have been configured.
- **In line xxx, a parameter (and no configuration element) is shown**  
The parameter configured in line xxx does not exist or is not permissible (e.g. list parameter). With S and P parameters, the data length must be known via the PPC-internal preferred list, or by means of Y-0-0157/Y-0-0158.

### Remedy:

- Parameterize Y-0-0187 correctly, respectively with S or P parameters, make known the data lengths by the user-defined lists Y-0-0157 and Y-0-0158.

## F16 (20) "Non-supported drive type"

**Y-0-0048: 20** A connected drive could not be identified.  
The address of the relevant drive is specified in parameter "SYNTAX - error source" (Y-0-0046).

### Remedy:

- **IMPORTANT:** Read out the text of parameter "Manufacturer version" (S-0-0030) and make a note of it, e.g., "DSM2.3-ELS-02V03".
- Contact Indramat customer service.

## F16 (21) "Non-supported drive firmware"

**Y-0-0048: 21** The SYNTAX200 firmware used is not compatible with the firmware in the drive.  
The address of the relevant drive is in parameter "SYNTAX - error source" (Y-0-0046).

### Remedy:

- **IMPORTANT:** Read out the text of parameter "Manufacturer version" (S-0-0030) and make a note of it, e.g., "DSM2.3-ELS-02V03".
- Contact Indramat customer service.

## F17 (105) "Master position value corrupted. Master axis: xx"

**Y-0-0048: 105** The master axis position of the virtual master axis is checked but once for validity upon reaching master axis mode (checksum).  
"xx" is the master axis address.

### Cause:

- A new PPC was used with a non-initialized programming module.
- Data integrity was lost, e.g., as a result of a faulty programming module.

### Remedy:

- "Clear master axis error" (\_E:L#.16).
- If necessary, set position of the virtual master axis with "Enable virtual master axis" (\_E:L#.06) or "Preset position" (\_E:L#.20).

## F17 (106) "Master speed limit too high (C-30, C-31). Master axis: xx"

**Y-0-0048: 106** The maximum allowable velocity command value of the master axis is fixed with

$$\text{MAX} = \frac{1000 \times 0,45 \times 60}{\text{SERCOS cycle time}}$$

The SERCOS cycle time is displayed in parameter S-0-0002.

At least one limit value of the velocity command value (C-0-0030 or C-0-0031) is greater than the maximum allowable velocity command value as per the above formula.

"xx" is the master axis address.

### Remedy:

- C-0-0030 or C-0-0031 must be decreased as per formula above.

## F17 (107) "Master speed limit to high (C-55, C-56). Master axis: xx"

**Y-0-0048: 107** The maximum allowable velocity command value of the master axis is fixed with

$$\text{MAX} = \frac{1000 \times 0,45 \times 60}{\text{SERCOS cycle time}}$$

The SERCOS cycle time is displayed in parameter S-0-0002.

At least one limit value of the velocity command value (C-0-0055 or C-0-0056) is greater than the maximum allowable velocity command value as per the above formula.

"xx" is the master axis address.

### Remedy:

- C-0-0055 or C-0-0056 must be decreased as per formula above.

## F17 (109) "C-76, C-2, C-5: Different cycles of master axes"

**Y-0-0048: 109** Both master axis have a real master axis. The master encoder address for the real master axis is pretend in parameter "RM - master encoder, drive address" (C-0-0005). If a redundant master encoder is available then its drive address is parameterized in parameter "RM - redundant master encoder, drive address" (C-0-0072).

In both master axis the drive address is parameterized equal (see parameter C-0-0005 or C-0-0072). Both master axis refer to the same master encoder. The product cycle (C-0-0076) and thus the master encoder range (P-0-0765) of the master encoder should be equal.

### Remedy:

- The product cycles (C-0-0075) of both master axes must be equal at equal master encoder.

## F17 (110) "Too many local IO's for cam switches 2 activated (C-0-0049)"

**Y-0-0048: 110** With the help of parameter "Cam switch group 2 - control word" (C-0-0049) the cam switch group 2 in the SERCOS cycle can be output to a local I/O module (RECO).

The output in the SERCOS cycle is only possible for a local I/O module. The output to a local I/O module may only be entered in C-0-0049.

### Remedy:

- Deactivate the output in C-0-0049.
- Output of the cams to drive I/O cards (DEA).

## F17 (111) "Too many DEA cards for cam switches 2 activated (C-49, A-36)"

**Y-0-0048: 111** The cam function is activated in parameter "Cam switch group 2 - control word" (C-0-0049). DEA cards are allocated to these cams in parameter "DEA - Configuration as cam switches for master axis" (A-0-0036).

Too many DEA cards have been allocated to the number of cams selected.

### Remedy:

- Change C-0-0049.
- Change A-0-0036.

## F17 (112) Cam switch 2 - parameters C-49 and A-36 not ok

**Y-0-0048: 112** In parameter "Cam switch group 2 - control word" (C-0-0049) the cam function is activated. In the parameter "DEA - Configuration as cam switches for master axis" (A-0-0036), the DEA cards are assigned to this cam.

The combination of those two parameters is not permissible.

### Cause:

- With an activated cam switch 2 (C-0-0049, bit 0,1) no DEA card has been activated in parameter A-0-0036.
- With an activated cam switch 2 (C-0-0049, bit 0,1) too many DEA cards have been activated in parameter A-0-0036 on different axes.
- Drive with DEA card (bit 1 set in A-0-0036) has been deactivated.

### Remedy:

- Check the parameterization of C-0-0049 and A-0-0036 (potentially of all axes).

## F18 (100) "Real master axis - master encoder error"

**Y-0-0048: 100** The encoder monitoring device was actuated with the use of a redundant encoder for the real master axis. The master encoder is hunting.

### Cause:

- The coupling unit is defective.
- The encoder is defective.
- The encoder cable is defective.
- Monitoring window "Real master - redundant encoder monitoring window" (C-0-0073) too small.

### Remedy:

- Check both encoders.
- Correct the parameter by using the parameter "Real master - redundant encoder max. position difference" (C-0-0074), if necessary.
- The error can only be reset with input "Clear master axis error" (\_E:L#.16).

## F18 (101) "Real master axis - redundant encoder error"

**Y-0-0048: 101** The encoder monitoring device was actuated with the use of a redundant encoder for the real master axis. The master encoder is hunting.

### Cause:

- The coupling unit is defective.
- The encoder is defective.
- The encoder cable is defective.
- Monitoring window "Real master - redundant encoder monitoring window" (C-0-0073) too small.

### Remedy:

- Check both encoders.
- Correct the parameter by using the parameter "Real master - redundant encoder max. position difference" (C-0-0074), if necessary.
- The error can only be reset with input "Clear master axis error" (\_E:L#.16).

## F18 (102) "RM - Drive with master axis encoder is missing"

**Y-0-0048: 102** The drive to which the master axis encoder for the real master axis is connected was not detected during transition from initialization into parameter mode in the SERCOS ring.

The drive is either not projected or deactivated.

### Remedy:

- Drive in SERCOS ring projected (change parameter Y-0-0002)
- Activate drive (change parameter A-0-0006).

## F18 (103) "RM - External encoder feedback need to configure"

**Y-0-0048: 103** There was no external encoder feedback parameterized for the drive to which the master axis encoder for the real master axis is connected.

### Remedy:

- An external encoder feedback must be specified with a value unequal to zero with parameter "Feedback 2 type" (P-0-0075).

## F18 (104) "RM - Redundant ext. encoder feedback need to configure"

**Y-0-0048: 104** There was no external encoder feedback parameterized for the drive to which the redundant master axis encoder for the real master axis is connected.

### Remedy:

- An external encoder feedback must be specified with a value unequal to zero with parameter "Feedback 2 type" (P-0-0075).

## F21 (230) "SERCOS transmission error (no drive responds)"

**Y-0-0048: 230** A SERCOS interface transmission could not be successfully concluded (time out monitoring).

At the time of this transmission, one or several axes would not respond.

The SYNTAX200 ring remains in initialization mode. A progression is now only possible by switching the PPC off and on or reset the PPC.

### Cause:

- Fiber optic cable ring defective -or-
- Drive was switched off.

### Remedy:

- Switch drive and PPC off.
- Check fiber optic cable ring.
- Contact Indramat customer service.

## F21 (231) "SERCOS interface - transmission error during initialization"

**Y-0-0048: 231-299** An error occurred during the transmission of a parameter to the drive while initializing the SERCOS interface ring and drives.

This error may not occur with a system that is already successfully operating. There is a problem in the transmission path, i.e., LWL ring, if it does.

This error can occur during startup if, for example, a drive used

- does not support a specific parameter or
- it does not permit the value of a parameter that is to be transmitted.

In this case, it is possible to start up the system by changing parameterization.

### Remedy:

- IMPORTANT: Read out the number from parameter "SYNTAX - error number" (Y-0-0048) and make a note of it (e.g., 231).
- Contact Indramat customer service.

## F22 (199) "Switching to uninitialized operation mode"

**Y-0-0048: 199** With the binary inputs of the following axis an operating mode was activated that was not parameterized.

### Remedy:

- Parameterize the corresponding operating mode in parameter A-0-0003, A-0-0009 or A-0-0070, ... or
- do not set the binary input.

## F23 (23) "PPC-parameter inconsistent. Command 'Restore' (Y-0-0014)?"

**Y-0-0048: 23** When running up the system an inconsistency was recognized between backup copy of the nvRAM data on the CompactFlash and the nvRAM data on the PPC.

### Cause:

A change of the hardware is normally the cause. The content of the CompactFlash does not fit to the data on the PPC.

### Remedy:

Running up the system and assume the stored configuration from the CompactFlash card:

- Assume the stored data from the CompactFlash card with Y-0-0014.

Running up the system without assuming the stored configuration from the CompactFlash card:

- clear error
- load base parameters

## F24 (24) "Reinitialization necessary - Reset when changing the phase!"

**Y-0-0048: 24** System data is loaded from the CompactFlash card (with Y-0-0014). To assume the new configuration the system must be restarted (e.g., with phase switching initiated by the user).

### Cause:

System data is loaded from the CompactFlash card (with Y-0-0014). Further operation of the system with the changed but not assumed configuration data is not possible.

### Remedy:

- Initialize a restart of the system with phase switching or a reset.

## F32 (140) "3964R Serial interface overrun"

**Y-0-0048: 140** An overrun error has occurred at the interface.

### Remedy:

- Clear error, restart transmission.
- If the error occurs again, contact Indramat customer service.

### F32 (141) "3964R Serial interface parity error"

Y-0-0048: 141 A parity error occurred at the serial interface.

**Cause:**

- First failure (e.g., due to EMC)
- Repetitive failure, e.g., due to faulty transmission path (e.g., defective line).

**Remedy:**

- Check transmission path.
- Clear error.
- Restart transmission.

### F32 (142) "3964R Serial interface transmission error (Frame)"

Y-0-0048: 142 A frame error has occurred at the serial interface.

**Cause:**

- Incorrectly set data rate, parity and so on.

**Remedy:**

- Set data transmission correct, also see "Host communication - control word" (Y-0-0033).

### F32 (143) "ARCNET - excessive bus reconfiguration"

Y-0-0048: 143 The ARCNET bus connection has completely broken down.

**Cause:**

- The ARCNET bus connection has been interrupted.
- Strong EMC interference.

**Remedy:**

- - Check plug-in contacts for seating.  
- Ensure that the end resistors (93  $\Omega$ ) are in at both bus ends.
- In a highly polluted EMC environment, use cable RG 71 (in lieu of RG 62).

### F32 (146) "ARCNET telegram buffer: overrun error"

Y-0-0048: 146 SYNAX accumulates the arriving ARCNET telegrams in an internal buffer for 32 telegrams and processes them if the execution of the current telegram is terminated.

If the 33rd telegram occurs during execution of the current telegram, it can't be stored any more, because the telegram buffer is full. The diagnostic message 146 shows that ARCNET telegrams get lost.

**Remedy:**

- The message interchange via ARCNET must be reduced or must be synchronized between the different ARCNET masters, so that the telegrams arrive on the PPC not faster than they can be processed internal.



## F32 (147) "Buffer overrun: parameter are changed too fast in sequence!"

**Y-0-0048: 147** SYNAX provides several A parameters whose operating data are automatically transmitted in the background from the PPC to the respective drive parameters.

The changed operating data of these parameters are buffered internally and are written sequentially to the drive via service data channel.

If these operating data are changed at the same time in too many parameters or for several parameters too fast in serial, the internal buffer with 50 memory locations can overrun. The diagnostic message 147 shows that changes get lost.

In SYNAX version 10 this applies for the parameters

- A-0-0124 (--> P-0-0093)
- A-0-0126 (--> P-0-0157)
- A-0-0170 (--> P-0-0156)

### Remedy:

- At the configuration of these A parameters in the real time channel of a fieldbus interface or in data blocks for the acyclic data transmission not more than 50 values may be changed at the same time. The next changes can be made earliest after the expiration of the internal transmission time  
 $T = 10 \cdot \text{number of changed A parameters} \cdot \text{SERCOS cycle time [in ms]}$ .

## F33 (150) "Communication via the fieldbus is impossible"

**Y-0-0048: 150** The fieldbus communication task on the PPC could not be started successfully.

### Cause:

- PPC internal error.

### Remedy:

- Contact Indramat customer service.

## F33 (151) "Fieldbus: Incorrect jumper setting on fieldbus board"

**Y-0-0048: 151** The jumper setting for the interrupt number and/or the address offset is not correct.

### Remedy:

- Contact Indramat customer service.

## F36 (36) "Local bus module - External power supply error. Slot-Nr: xx"

**Y-0-0048: 36** The local bus output module has galvanically separated outputs. For a proper operation of these outputs, an external voltage source must be applied. "xx" are the slot numbers 1 through 15.

### Cause:

- The external voltage source is outside of the limits of  $+19,5V < U_i < +31V$ .

### Remedy:

- Check external voltage source.

## F40 (40) "PPC-link - link defective"

**Y-0-0048: 40** The link participant has detected an LWL break in the link ring.

### Cause:

- Each DAQ monitors its optical inputs. With missing signals, an LWL break is detected.

### Remedy:

- Check LED H17 and H18 on the DAQ (warped display, LWL break display).
- The LWL break is physically "before" that subscriber that signals this error.

## F42 (42) "PPC-link - master position fault (MDT)"

**Y-0-0048: 42** The transmission of the master axis position by the link master to the link subscriber is experiencing problems.

### Cause:

- Data transmission interference (bit error) link MDT of two sequential cycles is faulty.

### Remedy:

- Check LED H17 (DAQ) and LWL, if necessary.

### F43 (43) "PPC-link - master position fault (AT)"

- Y-0-0048: 43** The transmission of the master axis position by the link slave to the link master is experiencing interference.  
The parameter "SYNAX - error source" (Y-0-0046) contains the affected link address.  
Only those master axis positions are monitored that are used in the own SYNAX200 ring.

**Cause:**

- Data transmission interference (bit error), link AT of a link slave of two sequential cycles is faulty.

**Remedy:**

- Check LED H17 (DAQ) and LWL, if necessary.

### F44 (44) "PPC-link - selected link address not permitted"

- Y-0-0048: 44** In the case of the PPC link, the link address set on the DAQ may only range between 1 and 32.

**Cause:**

- In parameter Y-0-0179 the default value is still 0.

**Remedy:**

- Change DAQ address.

### F81 (81) "DAQ-board not correct (address-mapping)"

- Y-0-0048: 81** The "address-mapping" of the DAQ has been changed. The available DAQ is not supported by the firmware any more.

**Cause:**

- DAQ with an old address-mapping is used.

**Remedy:**

- Replace DAQ-board. DAQ-board with a new address-mapping is required.

### F91 (91) "SERCOS interface - ASIC: initialization error"

- Y-0-0048: 91** The check of the SERCOS interface - ASIC produced an error.

**Cause:**

- The dual port RAM of the SERCOS interface - ASIC is defective.
- A time out error with a reset of the SERCOS interface - ASIC.

**Remedy:**

- Replace the PPC.

## F92 (92) "PPC DUAL PORT RAM error"

Y-0-0048: 92 The check of the dual port RAM of the PPC generated an error.

### Cause:

- The dual port RAM is defective.
- The PC wrote into the dual port RAM during the check.

### Remedy:

- Replace the PPC.
- Change the PC program so that the PC cannot write during the dual port RAM test.

## F93 (93) "DAQ: SERCOS interface - ASIC: initialization error"

Y-0-0048: 93 Once the PPC/DAQ is switched on

- a software reset and
- a dual port ram test

are executed.

If one of these operations should fail, then this error is generated.

### Cause:

- A hardware error occurred during the initialization of the DAQ.

### Remedy:

- Replace DAQ.

## F94 (94) "PPC hardware version incorrect"

Y-0-0048: 94 The hardware identification on the PPC is wrong.

### Cause:

- PPC hardware defective.

### Remedy:

- Replace PPC card (hardware version higher or equal to 2.2).
- Contact Indramat customer service.
- PPC-card may have to be sent back to Indramat.

## F95 (4000+x) "Operating system error"

Y-0-0048: 4000+x An operating systems error has occurred in the PPC system.

### Remedy:

- IMPORTANT: Note number (e.g., 4001).
- Contact Indramat customer service.

## F97 (260) "PLC - firmware-version incompatible"

Y-0-0048: 260 SYNAX200 is trying to detect an PLC during runup.

**Cause:**

- Firmware version of the PPC and that of the PLC are not compatible.

**Remedy:**

- Replace PPC and PLC firmware.

## F97 (261) "PLC - cycle-counter is dead"

Y-0-0048: 261 SYNAX200 is monitoring the cycle counter of a closed PLC.

**Cause:**

- The PLC is not running.

## F97 (262) "PLC reports an error"

Y-0-0048: 262 **Cause:**

- The closed PLC is signaling an error.

## F97 (2000+z) "PLC error"

Y-0-0048: 2000+z The PLC signals an error. The diagnostic text of the PLC is copied to "SYNTAX - diagnostic text" (Y-0-0047). The error number of the PLC = z plus 2000 is copied into parameter "SYNTAX - error number" (Y-0-0048).

---

**Note:** In parameter "SYNTAX - diagnostic text" (Y-0-0047) "PLC error" will not be listed but rather, e.g., "PLC: program invalid".

---

## F98 (3000+y) "Drive error"

Y-0-0048: 3000+y **Example:** "Motor overtemperature":

An error has occurred in the drive. The diagnostic parameter (S-0-0095) of the relevant drive is copied into "SYNTAX - diagnostic text" (Y-0-0047). The "Error message number" (P-0-0009) = y plus 3000 is copied into parameter "SYNTAX - error number" (Y-0-0048). The address of the drive is listed in parameter "SYNTAX - error source" (Y-0-0046).

---

**Note:** In parameter "SYNTAX - diagnostic text" (Y-0-0047) "drive error" will not be listed but rather, e.g., "motor overtemperature".

---



## 5 Index

### 3

3964R Serial interface overrun 4-33  
3964R Serial interface parity error 4-34  
3964R Serial interface transmission error (Frame) 4-34

### A

A-0-0003 Drive does not support selected sync. mode 4-17  
A-0-0008/Y-0-0039 Activated analogue channel not linked 4-10  
A-0-0009 Drive does not support selected positioning mode 4-20  
A-0-0025 Too many register controllers activated 4-18  
A-0-0030 Process control P-gain too high 4-12  
A-0-0070 Drive does not support selected special mode 4-17  
A-0-0146 Analogue channel for process control not defined 4-12  
A-0-0146 Analogue channel for the process control not activated 4-12  
ARCNET - excessive bus reconfiguration 4-34  
ARCNET telegram buffer  
    overrun error 4-34

### B

Buffer overrun  
    parameter are changed too fast in sequence! 4-35

### C

C-76, C-2, C-5 Different cycles of master axes 4-29  
Cam and register control not possible (see A-0-0003/A-0-0025) 4-19  
Cam switch 2 - parameters C-49 and A-36 not ok 4-30  
Cam switches and I/O not possible. (Y-0-0013, C-0-0049) slot-nr xx 4-21  
Cam switches and I/O to DEA4.1 not possible (Y-0-0013, C-0-0049, A-0-0036)  
4-21  
Cam/register/osci. not possible (see A-0-0003/A-0-0025/Y-0-0107) 4-19  
Combination of used functions not possible (real time bits) 4-22  
Communication via the fieldbus is impossible 4-35

### D

Dancer controlled axis must be speed synchron 4-11  
DAQ SERCOS interface - ASIC initialization error 4-38  
DAQ-board not correct (address-mapping) 4-37  
Drive addresses not correct (see Y-0-0002, Y-0-0086) 4-4  
Drive does not support DEA8.1 card 4-21  
Drive does not support oscilloscope function 4-20  
Drive error 4-39  
Drive locked with password (S-0-0267) 4-20

### E

Error on switching into operating mode 4-3  
Error on switching to phase 3 4-2

### F

Fatal error occurred - PPC reset necessary 4-4  
Fiber optic ring not closed 4-3  
Fieldbus Incorrect jumper setting on fieldbus board 4-35

### G

General procedure with this PPC display 4-5

**H**

Hardware error 4-1

**I**

Initialization messages 4-1

Interbus Process data length is not supported (Y-127/128) 4-8

**L**

List of UDP ports in Y-0-0194 is too short (see Y-0-0129) 4-7

Local bus module - External power supply error. Slot-Nr xx 4-36

**M**

Master position value corrupted. Master axis xx 4-28

Master speed limit to high (C-30, C-31). Master axis xx 4-28

Master speed limit to high (C-55, C-56). Master axis xx 4-29

Max. number of drives exceeded 4-4

More than 1 register controller per master axis not possible 4-9

More than one process controller per axis not possible 4-10

More than one register controller per axis not possible 4-9

More than one tension controller per axis not possible 4-13

More than one tension controller per master not possible 4-11

**N**

No different feedbacks selectable (A-0-0003/A-0-0009/A-0-0070) 4-16

Non-supported drive firmware 4-28

Non-supported drive type 4-28

**O**

Operating system error 4-38

**P**

Parameter A-0-0038 not correct 4-13

Parameter channel Is supported by Profibus only (Y-33/129) 4-8

Parameter value limits min-limit > max-limit (see Y-0-0068) 4-6

Parameter Y-0-0127 not correct. Line nbr. xxx 4-24

Parameter Y-0-0128 not correct. Line nbr. xxx 4-26

Parameter Y-0-0131 not correct. Line nbr. xxx 4-23

Parameter Y-0-0132 not correct. Line nbr. xxx 4-23

Parameter Y-0-0185 not correct. Line nbr. xxx 4-26

Parameter Y-0-0186 not correct. Line nbr. xxx 4-27

Parameter Y-0-0187 not correct. Line nbr. xxx 4-27

Parameter Y-0-0188 not correct. Line nbr. xxx 4-24

Parameter Y-0-0189 not correct. Line nbr. xxx 4-25

Parameter Y-0-0190 not correct. Line nbr. xxx 4-25

PCP channel Is supported by Interbus only (Y-33/129) 4-8

Phase synchronization & absolute format not possible (see A-0-0001/A-0-0003) 4-16

PLC - cycle-counter is dead 4-39

PLC - firmware-version incompatible 4-39

PLC error 4-39

PLC reports an error 4-39

PPC checksum error (see Y-0-0068) 4-5

PPC DUAL PORT RAM error 4-38

PPC hardware defective 4-1

PPC hardware version incorrect 4-38

PPC in test mode continuous light 4-2

PPC in test mode zero bit stream 4-1

PPC parameter exceeds min./max. value (see Y-0-0068) 4-5

PPC parameter not correct (see Y-0-0068) 4-6

PPC/DAQ Hardware defective CON\_CYC-Signal faulty 4-1

PPC-internal memory error 4-5

PPC-link - link defective 4-36



PPC-link - master position fault (AT) 4-37  
 PPC-link - master position fault (MDT) 4-36  
 PPC-link - other link master already active 4-16  
 PPC-link - selected link address not permitted 4-37  
 PPC-parameter inconsistent. Command 'Restore' (Y-0-0014)? 4-33

## R

Real master axis - master encoder error 4-30  
 Real master axis - redundant encoder error 4-31  
 Register cont. and oscilloscope not possible (see A-0-0025/Y-0-0107) 4-19  
 Register control only possible with modulo axis (see A-0-0001, A-0-0025) 4-20  
 Register controlled axis without synchronization (see A-0-0003) 4-20  
 Register controller, drive axis - no drive addresses (A-87) 4-9  
 Register controller, drive axis - no master addresses (A-169) 4-9  
 Register controller, master axis - no drive addresses (A-87) 4-9  
 Register controller, master axis - no master address (A-169) 4-8  
 Reinitialization necessary - Reset when changing the phase! 4-33  
 RM - Drive with master axis encoder is missing 4-31  
 RM - External encoder feedback need to configure 4-31  
 RM - Redundant ext. encoder feedback need to configure 4-31

## S

SERCOS interface - ASIC initialization error 4-37  
 SERCOS interface - double drive telegram failure 4-3  
 SERCOS interface - no drives connected 4-2  
 SERCOS interface - ring break 4-2  
 SERCOS interface - transmission error during initialization 4-32  
 SERCOS transmission error (no drive responds) 4-32  
 Serial port A (X10) multiple assigned (Y-0-0005/Y-0-0033) 4-18  
 Serial port B (X16) multiple assigned (Y-0-0010/Y-0-0033) 4-19  
 Special mode only with PPC-P possible (A-0-0070/A-0-0071/A-0-0072/A-0-0073) 4-17  
 Switching to uninitialized operation mode 4-32

## T

Target axis must be synchronous axis (A-0-0133, A-0-0156) 4-22  
 Tension controlled axis must be speed or phase synchron 4-13  
 Tension controller target address and -value wrong (A-146) 4-11  
 Too many DEA cards for cam switches 2 activated (C-49, A-36) 4-29  
 Too many group parameters of one group per axis 4-22  
 Too many local IO's for cam switches 2 activated (C-0-0049) 4-29  
 Too many parameters in AT configured 4-18  
 Too many parameters in MDT configured 4-17

## W

Winding axis must be in speed synchronization (A-0-0003, A-0-0146) 4-10

## Y

Y-0-0013 Addressed X-I/O not permissible (see Y-0-0024/Y-0-0033) 4-14  
 Y-0-0013 Data integrity violated 4-15  
 Y-0-0013 Drive waypoints not possible (e. g. ECODRIVE) 4-22  
 Y-0-0013 Idle mode not permissible (see A-0-0009) 4-14  
 Y-0-0013 Local bus input module missing. Slot-nr xx 4-6  
 Y-0-0013 Local bus output module missing. Slot-nr xx 4-6  
 Y-0-0013 Non-permissible DEA address (e.g., ECODRIVE) 4-15  
 Y-0-0013 Non-permissible DEA address (see Y-0-0002) 4-13  
 Y-0-0013 Non-permissible version of PARA.EXE 4-15  
 Y-0-0013 PLC-Interface not allowed on PPC-R without ISP 4-16  
 Y-0-0013 Positioning mode not permissible (see A-0-0009) 4-14  
 Y-0-0013 Special mode not permissible (see A-0-0070) 4-15  
 Y-0-0013 Synchronization mode not permissible (A-0-0003) 4-14  
 Y-0-0039/Y-0-0040 Number of entries not equal 4-10  
 Y-0-0040  
     Multiple entries of target parameter in list 4-11

Y-0-0157 Ident-number exists twice 4-7  
Y-0-0157/Y-0-0158 Number of entries not equal 4-6  
Y-0-0194  
    UDP port number exists twice 4-7

## 6 Service & Support

### 6.1 Helpdesk

Unser Kundendienst-Helpdesk im Hauptwerk Lohr am Main steht Ihnen mit Rat und Tat zur Seite. Sie erreichen uns

- telefonisch: **+49 (0) 9352 40 50 60**  
über Service Call Entry Center Mo-Fr 07:00-18:00
- per Fax: **+49 (0) 9352 40 49 41**
- per e-Mail: **service@indramat.de**

Our service helpdesk at our headquarters in Lohr am Main, Germany can assist you in all kinds of inquiries. Contact us

- by phone: **+49 (0) 9352 40 50 60**  
via Service Call Entry Center Mo-Fr 7:00 am - 6:00 pm
- by fax: **+49 (0) 9352 40 49 41**
- by e-mail: **service@indramat.de**

### 6.2 Service-Hotline

Außerhalb der Helpdesk-Zeiten ist der Service direkt ansprechbar unter

oder **+49 (0) 171 333 88 26**  
**+49 (0) 172 660 04 06**

After helpdesk hours, contact our service department directly at

or **+49 (0) 171 333 88 26**  
**+49 (0) 172 660 04 06**

### 6.3 Internet

Weitere Hinweise zu Service, Reparatur und Training finden Sie im Internet unter

**[www.indramat.de](http://www.indramat.de)**

Außerhalb Deutschlands nehmen Sie bitte zuerst Kontakt mit Ihrem lokalen Ansprechpartner auf. Die Adressen sind im Anhang aufgeführt.

- Verkaufsniederlassungen
- Niederlassungen mit Kundendienst

Additional notes about service, repairs and training are available on the Internet at

**[www.indramat.de](http://www.indramat.de)**

Please contact the sales & service offices in your area first. Refer to the addresses on the following pages.

- sales agencies
- offices providing service

### 6.4 Vor der Kontaktaufnahme... - Before contacting us...

Wir können Ihnen schnell und effizient helfen wenn Sie folgende Informationen bereithalten:

1. detaillierte Beschreibung der Störung und der Umstände.
2. Angaben auf dem Typenschild der betreffenden Produkte, insbesondere Typenschlüssel und Seriennummern.
3. Tel./Faxnummern und e-Mail-Adresse, unter denen Sie für Rückfragen zu erreichen sind.

For quick and efficient help, please have the following information ready:

1. Detailed description of the failure and circumstances.
2. Information on the type plate of the affected products, especially type codes and serial numbers.
3. Your phone/fax numbers and e-mail address, so we can contact you in case of questions.

## 6.5 Kundenbetreuungsstellen - Sales & Service Facilities

### Deutschland – Germany

**vom Ausland:** (0) nach Landeskennziffer weglassen!  
**from abroad:** don't dial (0) after country code!

|  |  |  |   |
|--|--|--|---|
| Vertriebsgebiet Mitte<br>Germany Centre<br><br>Rexroth Indramat GmbH<br>Bgm.-Dr.-Nebel-Str. 2 / Postf. 1357<br>97816 Lohr am Main / 97803 Lohr<br><br><b>Kompetenz-Zentrum Europa</b><br><br>Tel.: +49 (0)9352 40-0<br>Fax: +49 (0)9352 40-4885      | <b>SERVICE</b><br><br><b>CALL ENTRY CENTER</b><br><b>MO – FR</b><br><b>von 07:00 - 18:00 Uhr</b><br><br><b>from 7 am – 6 pm</b><br><br><b>Tel. +49 (0) 9352 40 50 60</b><br><a href="mailto:service@indramat.de">service@indramat.de</a> | <b>SERVICE</b><br><br><b>HOTLINE</b><br><b>MO – FR</b><br><b>von 17:00 - 07:00 Uhr</b><br><b>from 5 pm - 7 am</b><br>+ SA / SO<br><br><b>Tel.: +49 (0)172 660 04 06</b><br><b>oder / or</b><br><b>Tel.: +49 (0)171 333 88 26</b> | <b>SERVICE</b><br><br><b>ERSATZTEILE / SPARES</b><br>verlängerte Ansprechzeit<br>- extended office time -<br>♦ nur an Werktagen<br>- only on working days -<br>♦ von 07:00 - 18:00 Uhr<br>- from 7 am - 6 pm -<br><br><b>Tel. +49 (0) 9352 40 42 22</b> |
| Vertriebsgebiet Süd<br>Germany South<br><br>Rexroth Indramat GmbH<br>Landshuter Allee 8-10<br>80637 München<br><br>Tel.: +49 (0)89 127 14-0<br>Fax: +49 (0)89 127 14-490   | Vertriebsgebiet West<br>Germany West<br><br>Bosch Rexroth AG<br>Regionalzentrum West<br>Borsigstrasse 15<br>40880 Ratingen<br><br>Tel.: +49 (0)2102 409-0<br>Fax: +49 (0)2102 409-406  | Gebiet Südwest<br>Germany South-West<br><br>Bosch Rexroth AG<br>Service-Regionalzentrum Süd-West<br>Fellbacherstr.115<br>70736 Fellbach<br><br>Tel.: +49 (0)711 54041-0<br>Fax: +49 (0)711 54041-147                             | Gebiet Südwest<br>Germany South-West<br><br>Bosch Rexroth AG<br>Regionalzentrum Südwest<br>Ringstrasse 70 / Postfach 1144<br>70736 Fellbach / 70701 Fellbach<br><br>Tel.: +49 (0)711 57 61-100<br>Fax: +49 (0)711 57 61-125                             |
| Vertriebsgebiet Nord<br>Germany North<br><br>Bosch Rexroth AG<br>Walsroder Str. 93<br>30853 Langenhagen<br><br>Tel.: +49 (0) 511 72 66 57-0<br>Service: +49 (0) 511 72 66 57-256<br>Fax: +49 (0) 511 72 66 57-93<br>Service: +49 (0) 511 72 66 57-95 | Vertriebsgebiet Mitte<br>Germany Centre<br><br>Bosch Rexroth AG<br>Regionalzentrum Mitte<br>Waldecker Straße 13<br>64546 Mörfelden-Walldorf<br><br>Tel.: +49 (0) 61 05 702-3<br>Fax: +49 (0) 61 05 702-444                               | Vertriebsgebiet Ost<br>Germany East<br><br>Bosch Rexroth AG<br>Beckerstraße 31<br>09120 Chemnitz<br><br>Tel.: +49 (0)371 35 55-0<br>Fax: +49 (0)371 35 55-333  | Vertriebsgebiet Ost<br>Germany East<br><br>Bosch Rexroth AG<br>Regionalzentrum Ost<br>Walter-Köhn-Str. 4d<br>04356 Leipzig<br><br>Tel.: +49 (0)341 25 61-0<br>Fax: +49 (0)341 25 61-111   |

## Europa (West) - Europe (West)

**vom Ausland:** (0) nach Landeskennziffer weglassen, **Italien:** 0 nach Landeskennziffer mitwählen  
**from abroad:** don't dial (0) after country code, **Italy:** dial 0 after country code

|   |  |  |  |
|---|--|--|--|
| <p>Austria - Österreich</p> <p>Bosch Rexroth GmbH<br/>Bereich Indramat<br/>Stachegasse 13<br/>1120 Wien</p> <p>Tel.: +43 (0)1 985 25 40<br/>Fax: +43 (0)1 985 25 40-93</p>  | <p>Austria – Österreich</p> <p>Bosch Rexroth G.m.b.H.<br/>Gesch.ber. Rexroth Indramat<br/>Industriepark 18<br/>4061 Pasching</p> <p>Tel.: +43 (0)7221 605-0<br/>Fax: +43 (0)7221 605-21</p>  | <p>Belgium - Belgien</p> <p>Bosch Rexroth AG<br/>Electric Drives &amp; Controls<br/>Industrielaan 8<br/>1740 Ternat</p> <p>Tel.: +32 (0)2 5830719<br/>- service: +32 (0)2 5830717<br/>Fax: +32 (0)2 5830731<br/><a href="mailto:indramat@boschrexroth.be">indramat@boschrexroth.be</a></p>   | <p>Denmark - Dänemark</p> <p>BEC A/S<br/>Zinkvej 6<br/>8900 Randers</p> <p>Tel.: +45 (0)87 11 90 60<br/>Fax: +45 (0)87 11 90 61</p>  |
| <p>Great Britain – Großbritannien</p> <p>Bosch Rexroth Ltd.<br/>Rexroth Indramat Division<br/>Broadway Lane, South Cerney<br/>Cirencester, Glos GL7 5UH</p> <p>Tel.: +44 (0)1285 863000<br/>Fax: +44 (0)1285 863030<br/><a href="mailto:sales@boschrexroth.co.uk">sales@boschrexroth.co.uk</a><br/><a href="mailto:service@boschrexroth.co.uk">service@boschrexroth.co.uk</a></p> | <p>Finland - Finnland</p> <p>Bosch Rexroth Oy<br/>Rexroth Indramat division<br/>Ansatie 6<br/>017 40 Vantaa</p> <p>Tel.: +358 (0)9 84 91-11<br/>Fax: +358 (0)9 84 91-13 60</p>   | <p>France - Frankreich</p> <p>Bosch Rexroth S.A.<br/>Division Rexroth Indramat<br/>Avenue de la Trentaine<br/>BP. 74<br/>77503 Chelles Cedex</p> <p>Tel.: +33 (0)164 72-70 00<br/>Fax: +33 (0)164 72-63 00<br/><b>Hotline:</b> +33 (0)608 33 43 28</p>   | <p>France - Frankreich</p> <p>Bosch Rexroth S.A.<br/>Division Rexroth Indramat<br/>1270, Avenue de Lardenne<br/>31100 Toulouse</p> <p>Tel.: +33 (0)5 61 49 95 19<br/>Fax: +33 (0)5 61 31 00 41</p>                                 |
| <p>France - Frankreich</p> <p>Bosch Rexroth S.A.<br/>Division Rexroth Indramat<br/>91, Bd. Irène Joliot-Curie<br/>69634 Vénissieux – Cedex</p> <p>Tel.: +33 (0)4 78 78 53 65<br/>Fax: +33 (0)4 78 78 53 62</p>  | <p>Italy - Italien</p> <p>Bosch Rexroth S.p.A.<br/>Via G. Di Vittoria, 1<br/>20063 Cernusco S/N.MI</p> <p>Tel.: +39 02 2 365 270<br/>Fax: +39 02 700 408 252378</p>  | <p>Italy - Italien</p> <p>Bosch Rexroth S.p.A.<br/>Via Paolo Veronesi, 250<br/>10148 Torino</p> <p>Tel.: +39 011 224 88 11<br/>Fax: +39 011 224 88 30</p>  | <p>Italy - Italien</p> <p>Bosch Rexroth S.p.A.<br/>Via del Progresso, 16 (Zona Ind.)<br/>35020 Padova</p> <p>Tel.: +39 049 8 70 13 70<br/>Fax: +39 049 8 70 13 77</p>  |
| <p>Italy - Italien</p> <p>Bosch Rexroth S.p.A.<br/>Via Mascia, 1<br/>80053 Castellammare di Stabia NA</p> <p>Tel.: +39 081 8 71 57 00<br/>Fax: +39 081 8 71 68 85</p>   | <p>Italy - Italien</p> <p>Bosch Rexroth S.p.A.<br/>Viale Oriani, 38/A<br/>40137 Bologna</p> <p>Tel.: +39 051 34 14 14<br/>Fax: +39 051 34 14 22</p>  | <p>Netherlands – Niederlande/Holland</p> <p>Bosch Rexroth B.V.<br/>Kruisbroeksestraat 1<br/>(P.O. Box 32)<br/>5281 RV Boxtel</p> <p>Tel.: +31 (0)411 65 19 51<br/>Fax: +31 (0)411 65 14 83<br/><a href="mailto:indramat@hydraudyne.nl">indramat@hydraudyne.nl</a></p>  | <p>Netherlands - Niederlande/Holland</p> <p>Bosch Rexroth Services B.V.<br/>Kruisbroeksestraat 1<br/>(P.O. Box 32)<br/>5281 RV Boxtel</p> <p>Tel.: +31 (0)411 65 19 51<br/>Fax: +31 (0)411 67 78 14</p>                            |
| <p>Norway - Norwegen</p> <p>Bosch Rexroth AS<br/>Rexroth Indramat Division<br/>Berghagan 1 or: Box 3007<br/>1405 Ski-Langhus 1402 Ski</p> <p>Tel.: +47 (0)64 86 41 00<br/>Fax: +47 (0)64 86 90 62<br/><a href="mailto:jul.ruud@rexroth.no">jul.ruud@rexroth.no</a></p>  | <p>Spain - Spanien</p> <p>Bosch Rexroth S.A.<br/>Divisiòn Rexroth Indramat<br/>Centro Industrial Santiga<br/>Obradors s/n<br/>08130 Santa Perpetua de Mogoda<br/>Barcelona</p> <p>Tel.: +34 9 37 47 94 00<br/>Fax: +34 9 37 47 94 01</p> | <p>Spain – Spanien</p> <p>Goimendi S.A.<br/>Divisiòn Rexroth Indramat<br/>Parque Empresarial Zuatzu<br/>C/ Francisco Grandmontagne no.2<br/>20018 San Sebastian</p> <p>Tel.: +34 9 43 31 84 21<br/>- service: +34 9 43 31 84 56<br/>Fax: +34 9 43 31 84 27<br/>- service: +34 9 43 31 84 60<br/><a href="mailto:sat.indramat@goimendi.es">sat.indramat@goimendi.es</a></p> | <p>Sweden - Schweden</p> <p>Rexroth Mecman Svenska AB<br/>Rexroth Indramat Division<br/>- Varuvägen 7<br/>(Service: Konsumentvägen 4, Älfsjö)<br/>125 81 Stockholm</p> <p>Tel.: +46 (0)8 727 92 00<br/>Fax: +46 (0)8 647 32 77</p> |
| <p>Sweden - Schweden</p> <p>Rexroth Mecman Svenska AB<br/>Indramat Support<br/>Ekvåndan 7<br/>254 67 Helsingborg</p> <p>Tel.: +46 (0) 42 38 88 -50<br/>Fax: +46 (0) 42 38 88 -74</p>  | <p>Switzerland West - Schweiz West</p> <p>Bosch Rexroth Suisse SA<br/>Département Rexroth Indramat<br/>Rue du village 1<br/>1020 Renens</p> <p>Tel.: +41 (0)21 632 84 20<br/>Fax: +41 (0)21 632 84 21</p>                                | <p>Switzerland East - Schweiz Ost</p> <p>Bosch Rexroth Schweiz AG<br/>Geschäftsbereich Indramat<br/>Hemrietstrasse 2<br/>8863 Buttikon</p> <p>Tel. +41 (0) 55 46 46 111<br/>Fax +41 (0) 55 46 46 222</p>   |  |

## Europa (Ost) - Europe (East)

**vom Ausland:** (0) nach Landeskennziffer weglassen  
**from abroad:** don't dial (0) after country code

|   |  |  |  |
|---|--|--|--|
| Czech Republic - Tschechien   | Czech Republic - Tschechien  | Hungary - Ungarn   | Poland – Polen   |
| Bosch -Rexroth, spol.s.r.o.<br>Hviezdoslavova 5<br>627 00 Brno<br>Tel.: +420 (0)5 48 126 358<br>Fax: +420 (0)5 48 126 112                           | DEL a.s.<br>Strojirenská 38<br>591 01 Zdar nad Sázavou<br>Tel.: +420 616 64 3144<br>Fax: +420 616 62 1657  | Bosch Rexroth Kft.<br>Angol utca 34<br>1149 Budapest<br>Tel.: +36 (1) 364 00 02<br>Fax: +36 (1) 383 19 80  | Bosch Rexroth Sp.zo.o.<br>ul. Staszica 1<br>05-800 Pruszków<br>Tel.: +48 22 738 18 00<br>– service: +48 22 738 18 46<br>Fax: +48 22 758 87 35<br>– service: +48 22 738 18 42                         |
| Poland – Polen  | Rumania - Rumänien   | Russia - Russland  | Russia - Russland  |
| Bosch Rexroth Sp.zo.o.<br>Biuro Poznan<br>ul. Dabrowskiego 81/85<br>60-529 Poznan<br>Tel.: +48 061 847 64 62 /-63<br>Fax: +48 061 847 64 02         | Bosch Rexroth Sp.zo.o.<br>Str. Drobety nr. 4-10, app. 14<br>70258 Bucuresti, Sector 2<br>Tel.: +40 (0)1 210 48 25<br>+40 (0)1 210 29 50<br>Fax: +40 (0)1 210 29 52 | Bosch Rexroth OOO<br>Wjatskaja ul. 27/15<br>127015 Moskau<br>Tel.: +7-095-785 74 78<br>+7-095 785 74 79<br>Fax: +7 095 785 74 77<br><a href="mailto:laura.kanina@boschrexroth.ru">laura.kanina@boschrexroth.ru</a> | ELMIS<br>10, Internationalnaya<br>246640 Gomel, Belarus<br>Tel.: +375/ 232 53 42 70<br>+375/ 232 53 21 69<br>Fax: +375/ 232 53 37 69<br><a href="mailto:elmis_ltd@yahoo.com">elmis_ltd@yahoo.com</a> |
| Turkey - Türkei   | Slowenia - Slowenien   |  |  |
| Bosch Rexroth Otomasyon<br>San & Tic. A.S.<br>Fevzi Cakmak Cad No. 3<br>34630 Sefaköy Istanbul<br>Tel.: +90 212 541 60 70<br>Fax: +90 212 599 34 07 | DOMEL<br>Otoki 21<br>64 228 Zelezniki<br>Tel.: +386 5 5117 152<br>Fax: +386 5 5117 225<br><a href="mailto:brane.ozebek@domel.si">brane.ozebek@domel.si</a>         |  |  |

## Africa, Asia, Australia – incl. Pacific Rim

|   |   |  |  |
|---|---|--|--|
| <p>Australia - Australien</p> <p>AIMS - Australian Industrial Machinery Services Pty. Ltd.<br/>Unit 3/45 Horne ST<br/>Campbellfield , VIC 3061<br/>Melbourne<br/>Tel.: +61 393 590 228<br/>Fax: +61 393 590 286<br/>Hotline: +61 419 369 195<br/><a href="mailto:terryobrien@aimsservices.com.au">terryobrien@aimsservices.com.au</a></p> | <p>Australia - Australien</p> <p>Bosch Rexroth Pty. Ltd.<br/>No. 7, Endeavour Way<br/>Braeside Victoria, 31 95<br/>Melbourne<br/>Tel.: +61 3 95 80 39 33<br/>Fax: +61 3 95 80 17 33<br/><a href="mailto:mel@rexroth.com.au">mel@rexroth.com.au</a></p>  | <p>China</p> <p>Shanghai Bosch Rexroth Hydraulics &amp; Automation Ltd.<br/>Waigaoqiao, Free Trade Zone<br/>No.122, Fu Te Dong Yi Road<br/>Shanghai 200131 - P.R.China<br/>Tel.: +86 21 58 66 30 30<br/>Fax: +86 21 58 66 55 23<br/><a href="mailto:gf.zhu_sh@boschrexroth.com.cn">gf.zhu_sh@boschrexroth.com.cn</a></p> | <p>China</p> <p>Bosch Rexroth China Ltd.<br/>15/F China World Trade Center<br/>1, Jianguomenwai Avenue<br/>Beijing 100004, P.R.China<br/>Tel.: +86 10 65 05 03 80<br/>Fax: +86 10 65 05 03 79</p>  |
| <p>China</p> <p>Bosch Rexroth China Ltd.<br/>Guangzhou Repres. Office<br/>Room 1014-1016, Metro Plaza,<br/>Tian He District, 183 Tian He Bei Rd<br/>Guangzhou 510075, P.R.China<br/>Tel.: +86 20 8755-0030<br/>+86 20 8755-0011<br/>Fax: +86 20 8755-2387</p>   | <p>China</p> <p>Bosch Rexroth (China) Ltd.<br/>A-5F., 123 Lian Shan Street<br/>Sha He Kou District<br/>Dalian 116 023, P.R.China<br/>Tel.: +86 411 46 78 930<br/>Fax: +86 411 46 78 932</p>   | <p>China</p> <p>Melchers GmbH<br/>BRC-SE, Tightening &amp; Press-fit<br/>13 Floor Est Ocean Centre<br/>No.588 Yanan Rd. East<br/>65 Yanan Rd. West<br/>Shanghai 200001<br/>Tel.: +86 21 6352 8848<br/>Fax: +86 21 6351 3138</p>  | <p>Hongkong</p> <p>Bosch Rexroth (China) Ltd.<br/>6<sup>th</sup> Floor,<br/>Yeung Yiu Chung No.6 Ind Bldg.<br/>19 Cheung Shun Street<br/>Cheung Sha Wan,<br/>Kowloon, Hongkong<br/>Tel.: +852 22 62 51 00<br/>Fax: +852 27 41 33 44<br/><a href="mailto:alexis.siu@boschrexroth.com.hk">alexis.siu@boschrexroth.com.hk</a></p> |
| <p>India - Indien</p> <p>Bosch Rexroth (India) Ltd.<br/>Rexroth Indramat Division<br/>Plot. A-58, TTC Industrial Area<br/>Thane Turbhe Midc Road<br/>Mahape Village<br/>Navi Mumbai - 400 701<br/>Tel.: +91 22 7 61 46 22<br/>Fax: +91 22 7 68 15 31</p>  | <p>India - Indien</p> <p>Bosch Rexroth (India) Ltd.<br/>Rexroth Indramat Division<br/>Plot. 96, Phase III<br/>Peenya Industrial Area<br/>Bangalore - 560058<br/>Tel.: +91 80 41 70 211<br/>Fax: +91 80 83 94 345<br/><a href="mailto:rexbang@bgl.vsnl.net.in">rexbang@bgl.vsnl.net.in</a></p>       | <p>India - Indien</p> <p>Bosch Rexroth (India) Ltd.<br/>1st Floor, S-10<br/>Green Park ext. Market<br/>New Delhi – 110016<br/>Tel.: +91 1 16 56 68 88<br/>Fax: +91 1 16 56 68 87</p>   | <p>Indonesia - Indonesien</p> <p>PT. Rexroth Wijayakusuma<br/>Building # 202, Cilandak<br/>Commercial Estate<br/>Jl. Cilandak KKO, Jakarta 12560<br/>Tel.: +62 21 7891169 (5 lines)<br/>Fax: +62 21 7891170 - 71</p>   |
| <p>Japan</p> <p>Bosch Rexroth Automation Corp.<br/>Service Center Japan<br/>Yutakagaoka 1810, Meito-ku,<br/>NAGOYA 465-0035, Japan<br/>Tel.: +81 52 777 88 41<br/>+81 52 777 88 53<br/>+81 52 777 88 79<br/>Fax: +81 52 777 89 01</p>   | <p>Japan</p> <p>Bosch Rexroth Automation Corp.<br/>Rexroth Indramat Division<br/>1F, I.R. Building<br/>Nakamachidai 4-26-44, Tsuzuki-ku<br/>YOKOHAMA 224-0041, Japan<br/>Tel.: +81 45 942 72 10<br/>Fax: +81 45 942 03 41</p>   | <p>Korea</p> <p>Bosch Rexroth-Korea Ltd.<br/>Electric Drives and Controls<br/>Bongwoo Bldg. 7FL, 31-7, 1Ga<br/>Jangchoong-dong, Jung-gu<br/>Seoul, 100-391<br/>Tel.: +82 234 061 813<br/>Fax: +82 222 641 295</p>  | <p>Korea</p> <p>Bosch Rexroth-Korea Ltd.<br/>1515-14 Dadae-Dong, Saha-Ku<br/>Rexroth Indramat Division<br/>Pusan Metropolitan City, 604-050<br/>Tel.: +82 51 26 00 741<br/>Fax: +82 51 26 00 747<br/><a href="mailto:gyhan@rexrothkorea.co.kr">gyhan@rexrothkorea.co.kr</a></p>  |
| <p>Malaysia</p> <p>Bosch Rexroth Sdn.Bhd.<br/>11, Jalan U8/82<br/>Seksyen U8<br/>40150 Shah Alam<br/>Selangor, Malaysia<br/>Tel.: +60 3 78 44 80 00<br/>Fax: +60 3 78 45 48 00<br/><a href="mailto:hockhwa@hotmail.com">hockhwa@hotmail.com</a><br/><a href="mailto:rexroth1@tm.net.my">rexroth1@tm.net.my</a></p>                        | <p>Singapore - Singapur</p> <p>Bosch Rexroth SDN BHD.<br/>No.11, Jalan Astaka U8/82<br/>Seksyen U8<br/>40150 Shah Alam<br/>Selangor Darul Ehsan<br/>Tel.: +65 3 7844 8000<br/>Fax: +65 3 7845 4800<br/><a href="mailto:sanjay.nemade@boschrexroth.com.sg">sanjay.nemade@boschrexroth.com.sg</a></p> | <p>South Africa - Südafrika</p> <p>TECTRA Automation (Pty) Ltd.<br/>71 Watt Street, Meadowdale<br/>Edenvale 1609<br/>Tel.: +27 11 971 94 00<br/>Fax: +27 11 971 94 40<br/>Hotline: +27 82 903 29 23<br/><a href="mailto:georgv@tectra.co.za">georgv@tectra.co.za</a></p>   | <p>Taiwan</p> <p>Rexroth Uchida Co., Ltd.<br/>No.17, Alley 24, Lane 737<br/>Cheng Bei 1 Rd., Yungkang<br/>Tainan Hsien<br/>Tel.: +886 6 25 36 565<br/>Fax: +886 6 25 34 754<br/><a href="mailto:indra.charlie@msa.hinet.net">indra.charlie@msa.hinet.net</a></p>   |
| <p>Thailand</p> <p>NC Advance Technology Co. Ltd.<br/>59/76 Moo 9<br/>Ramintra road 34<br/>Tharang, Bangkok,<br/>Bangkok 10230<br/>Tel.: +66 2 943 70 62<br/>+66 2 943 71 21<br/>Fax: +66 2 509 23 62<br/><a href="mailto:sonkawin@hotmail.com">sonkawin@hotmail.com</a></p>  |   |  |  |

## Nordamerika – North America

|   |  |  |  |
|---|--|--|--|
| <p>USA<br/>Hauptniederlassung - Headquarters</p> <p>Bosch Rexroth Corporation<br/>Rexroth Indramat Division<br/>5150 Prairie Stone Parkway<br/>Hoffman Estates, IL 60192-3707</p> <p>Tel.: +1 847 6 45 36 00<br/>Fax: +1 847 6 45 62 01<br/><a href="mailto:servicebrc@boschrexroth-us.com">servicebrc@boschrexroth-us.com</a><br/><a href="mailto:repairbrc@boschrexroth-us.com">repairbrc@boschrexroth-us.com</a></p> | <p>USA Central Region - Mitte</p> <p>Bosch Rexroth Corporation<br/>Rexroth Indramat Division<br/>Central Region Technical Center<br/>1701 Harmon Road<br/>Auburn Hills, MI 48326</p> <p>Tel.: +1 248 3 93 33 30<br/>Fax: +1 248 3 93 29 06</p>                                     | <p>USA Southeast Region - Südwest</p> <p>Bosch Rexroth Corporation<br/>Rexroth Indramat Division<br/>Southeastern Technical Center<br/>3625 Swiftwater Park Drive<br/>Suwanee, Georgia 30124</p> <p>Tel.: +1 770 9 32 32 00<br/>Fax: +1 770 9 32 19 03</p> | <p>USA SERVICE-HOTLINE</p> <p>- 7 days x 24hrs -</p> <p><b>+1-800-860-1055</b></p>   |
| <p>USA East Region –Ost</p> <p>Bosch Rexroth Corporation<br/>Rexroth Indramat Division<br/>Charlotte Regional Sales Office<br/>14001 South Lakes Drive<br/>Charlotte, North Carolina 28273</p> <p>Tel.: +1 704 5 83 97 62<br/>+1 704 5 83 14 86</p>   | <p>USA Northeast Region – Nordost</p> <p>Bosch Rexroth Corporation<br/>Rexroth Indramat Division<br/>Northeastern Technical Center<br/>99 Rainbow Road<br/>East Granby, Connecticut 06026</p> <p>Tel.: +1 860 8 44 83 77<br/>Fax: +1 860 8 44 85 95</p>                            | <p>USA West Region – West</p> <p>Bosch Rexroth Corporation<br/>7901 Stoneridge Drive, Suite 220<br/>Pleasant Hill, California 94588</p> <p>Tel.: +1 925 227 10 84<br/>Fax: +1 925 227 10 81</p>  |  |
| <p>Canada East - Kanada Ost</p> <p>Bosch Rexroth Canada Corporation<br/>Burlington Division<br/>3426 Mainway Drive<br/>Burlington, Ontario<br/>Canada L7M 1A8</p> <p>Tel.: +1 905 335 55 11<br/>Fax: +1 905 335-41 84<br/><a href="mailto:michael.moro@boschrexroth.ca">michael.moro@boschrexroth.ca</a></p>  | <p>Canada West - Kanada West</p> <p>Bosch Rexroth Canada Corporation<br/>5345 Goring St.<br/>Burnaby, British Columbia<br/>Canada V7J 1R1</p> <p>Tel. +1 604 205-5777<br/>Fax +1 604 205-6944<br/><a href="mailto:david.gunby@boschrexroth.ca">david.gunby@boschrexroth.ca</a></p> | <p>Mexico</p> <p>Bosch Rexroth Mexico S.A. de C.V.<br/>Calle Neptuno 72<br/>Unidad Ind. Vallejo<br/>07700 Mexico, D.F.</p> <p>Tel.: +52 5 754 17 11<br/>+52 5 754 36 84<br/>+52 5 754 12 60<br/>Fax: +52 5 754 50 73<br/>+52 5 752 59 43</p>               | <p>Mexico</p> <p>Bosch Rexroth S.A. de C.V.<br/>Calle Argentina No 3913<br/>Fracc. las Torres<br/>64930 Monterrey, N.L.</p> <p>Tel.: +52 8 333 88 34...36<br/>+52 8 349 80 91...93<br/>Fax: +52 8 346 78 71<br/><a href="mailto:mario.quiroga@boschrexroth.com.mx">mario.quiroga@boschrexroth.com.mx</a></p> |

## Südamerika – South America

|   |  |   |  |
|---|--|---|--|
| <p>Argentina - Argentinien</p> <p>Bosch Rexroth S.A.I.C.<br/>"The Drive &amp; Control Company"<br/>Acassusso 48 41/47<br/>1605 Munro<br/>Provincia de Buenos Aires</p> <p>Tel.: +54 11 4756 01 40<br/>Fax: +54 11 4756 01 36<br/><a href="mailto:victor.jabif@boschrexroth.com.ar">victor.jabif@boschrexroth.com.ar</a></p> | <p>Argentina - Argentinien</p> <p>NAKASE<br/>Servicio Tecnico CNC<br/>Calle 49, No. 5764/66<br/>B1653AOX Villa Balester<br/>Provincia de Buenos Aires</p> <p>Tel.: +54 11 4768 36 43<br/>Fax: +54 11 4768 24 13<br/><a href="mailto:nakase@usa.net">nakase@usa.net</a><br/><a href="mailto:nakase@nakase.com">nakase@nakase.com</a><br/><a href="mailto:gerencia@nakase.com">gerencia@nakase.com</a> (Service)</p> | <p>Brazil - Brasilien</p> <p>Bosch Rexroth Ltda.<br/>Av. Tégula, 888<br/>Ponte Alta, Atibaia SP<br/>CEP 12942-440</p> <p>Tel.: +55 11 4414 56 92<br/>+55 11 4414 56 84<br/>Fax sales: +55 11 4414 57 07<br/>Fax serv.: +55 11 4414 56 86<br/><a href="mailto:alexandre.wittwer@rexroth.com.br">alexandre.wittwer@rexroth.com.br</a></p> | <p>Brazil - Brasilien</p> <p>Bosch Rexroth Ltda.<br/>R. Dr.Humberto Pinheiro Vieira, 100<br/>Distrito Industrial [Caixa Postal 1273]<br/>89220-390 Joinville - SC</p> <p>Tel./Fax: +55 47 473 58 33<br/>Mobil: +55 47 9974 6645<br/><a href="mailto:prochnow@zaz.com.br">prochnow@zaz.com.br</a></p> |
| <p>Columbia - Kolumbien</p> <p>Reflutec de Colombia Ltda.<br/>Calle 37 No. 22-31<br/>Santafé de Bogotá, D.C.<br/>Colombia</p> <p>Tel.: +57 1 368 82 67<br/>+57 1 368 02 59<br/>Fax: +57 1 268 97 37<br/><a href="mailto:reflutec@neutel.com.co">reflutec@neutel.com.co</a></p>  |  |   |  |





Bosch Rexroth AG  
Electric Drives and Controls  
Bgm.-Dr.-Nebel-Str. 2  
97816 Lohr a. Main, Germany  
[info@boschrexroth.de](mailto:info@boschrexroth.de)  
[www.boschrexroth.de](http://www.boschrexroth.de)



290545