

# Rexroth Rho 4 Status messages and warnings

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Edition 06

Software manual



**Title** Rexroth Rho 4  
Status messages and warnings

**Type of Documentation** Software manual

**Document Typecode** DOK-RHO\*4\*-STATUS\*MEL\*-PR06-EN-P

**Purpose of Documentation** The present manual informs about:  

- the status messages and warnings of the rho4

**Record of Revisions**

Description	Release Date	Notes
DOK-RHO*4*-STATUS*MEL*-PR06-EN-P	10.2003	Valid from VO07

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**Published by** Bosch Rexroth AG  
 Postfach 11 62  
 D-64701 Erbach  
 Berliner Straße 25  
 D-64711 Erbach  
 Tel.: +49 (0) 60 62/78-0  
 Fax: +49 (0) 60 62/78-4 28  
 Abt.: BRC/ESH (KW)

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Notes:

# 1 Safety Instructions

Please read this manual before you startup the rho4.  
Store this manual in a place to which all users have access at any time.

## 1.1 Intended use


This instruction manual presents a comprehensive set of instructions and information required for the standard operation of the described products. The described products are used for the purpose of operating with a robot control rho4.

The products described

- have been developed, manufactured, tested and documented in compliance with the safety standards. These products normally pose no danger to persons or property if they are used in accordance with the handling stipulations and safety notes prescribed for their configuration, mounting, and proper operation.
- comply with the requirements of
  - the EMC Directives (89/336/EEC, 93/68/EEC and 93/44/EEC)
  - the Low-Voltage Directive (73/23/EEC)
  - the harmonized standards EN 50081-2 and EN 50082-2
- are designed for operation in industrial environments, i.e.
  - no direct connection to public low-voltage power supply,
  - connection to the medium- or high-voltage system via a transformer.

The following applies for application within a personal residence, in business areas, on retail premises or in a small-industry setting:

- Installation in a control cabinet or housing with high shield attenuation.
- Cables that exit the screened area must be provided with filtering or screening measures.
- The user will be required to obtain a single operating license issued by the appropriate national authority or approval body. In Germany, this is the Federal Institute for Posts and Telecommunications, and/or its local branch offices.

 **This is a Class A device. In a residential area, this device may cause radio interference. In such case, the user may be required to introduce suitable countermeasures, and to bear the cost of the same.**

The faultless, safe functioning of the product requires proper transport, storage, erection and installation as well as careful operation.

## Safety Instructions

### 1.2 Qualified personnel

The requirements as to qualified personnel depend on the qualification profiles described by ZVEI (central association of the electrical industry) and VDMA (association of German machine and plant builders) in:

**Weiterbildung in der Automatisierungstechnik**

**edited by: ZVEI and VDMA**

**MaschinenbauVerlag**

**Postfach 71 08 64**

**D-60498 Frankfurt.**

The present manual is designed for RC technicians. They need special knowledge on handling and programming robots.

Interventions in the hardware and software of our products, unless described otherwise in this manual, are reserved to specialized Rexroth personnel.

Tampering with the hardware or software, ignoring warning signs attached to the components, or non-compliance with the warning notes given in this manual may result in serious bodily injury or damage to property.

Only electrotechnicians as recognized under IEV 826-09-01 (modified) who are familiar with the contents of this manual may install and service the products described.

Such personnel are

- those who, being well trained and experienced in their field and familiar with the relevant norms, are able to analyze the jobs being carried out and recognize any hazards which may have arisen.
- those who have acquired the same amount of expert knowledge through years of experience that would normally be acquired through formal technical training.

With regard to the foregoing, please note our comprehensive range of training courses. Please visit our website at

<http://www.boschrexroth.com>

for the latest information concerning training courses, teachware and training systems. Personal information is available from our Didactic Center Erbach,

Telephone: (+49) (0) 60 62 78-600.

## Safety Instructions

**1.3 Safety markings on products**

Warning of dangerous electrical voltage!



Warning of danger caused by batteries!



Electrostatically sensitive components!



Warning of hazardous light emissions  
(optical fiber cable emissions)!



Disconnect mains power before opening!



Lug for connecting PE conductor only!



Functional earthing or low-noise earth only!



Connection of shield conductor only

## Safety Instructions

### 1.4 Safety instructions in this manual



#### **DANGEROUS ELECTRICAL VOLTAGE**

This symbol is used to warn of a **dangerous electrical voltage**. The failure to observe the instructions in this manual in whole or in part may result in **personal injury**.

---



#### **DANGER**

This symbol is used wherever insufficient or lacking compliance with instructions may result in **personal injury**.

---



#### **CAUTION**

This symbol is used wherever insufficient or lacking compliance with instructions may result in **damage to equipment or data files**.

---

☞ This symbol is used to draw the user's attention to special circumstances.

★ This symbol is used if user activities are required.



## Safety Instructions

**1.5 Safety instructions for the described product****DANGER**

**Danger of life through inadequate EMERGENCY-STOP devices! EMERGENCY-STOP devices must be active and within reach in all system modes. Releasing an EMERGENCY-STOP device must not result in an uncontrolled restart of the system! First check the EMERGENCY-STOP circuit, then switch the system on!**

---

**DANGER**

**Danger for persons and equipment!  
Test every new program before starting up a system!**

---

**DANGER**

**Retrofits or modifications may adversely affect the safety of the products described!  
The consequences may include severe injury, damage to equipment, or environmental hazards. Possible retrofits or modifications to the system using third-party equipment therefore have to be approved by Rexroth.**

---

**DANGER**

**Do not look directly into the LEDs in the optical fiber connection. Due to their high output, this may result in eye injuries. When the inverter is switched on, do not look into the LED or the open end of a short connected lead.**

---

**DANGEROUS ELECTRICAL VOLTAGE**

**Unless described otherwise, maintenance works must be performed on inactive systems! The system must be protected against unauthorized or accidental reclosing.**

**Measuring or test activities on the live system are reserved to qualified electrical personnel!**

---

## Safety Instructions



### **CAUTION**

#### **Danger to the module!**

**Do not insert or remove the module while the controller is switched ON! This may destroy the module. Prior to inserting or removing the module, switch OFF or remove the power supply module of the controller, external power supply and signal voltage!**



### **CAUTION**

**use only spare parts approved by Rexroth!**



### **CAUTION**

#### **Danger to the module!**

**All ESD protection measures must be observed when using the module! Prevent electrostatic discharges!**

The following protective measures must be observed for modules and components sensitive to electrostatic discharge (ESD)!

- Personnel responsible for storage, transport, and handling must have training in ESD protection.
- ESD-sensitive components must be stored and transported in the prescribed protective packaging.
- ESD-sensitive components may only be handled at special ESD-workplaces.
- Personnel, working surfaces, as well as all equipment and tools which may come into contact with ESD-sensitive components must have the same potential (e.g. by grounding).
- Wear an approved grounding bracelet. The grounding bracelet must be connected with the working surface through a cable with an integrated 1 MΩ resistor.
- ESD-sensitive components may by no means come into contact with chargeable objects, including most plastic materials.
- When ESD-sensitive components are installed in or removed from equipment, the equipment must be de-energized.

## Safety Instructions

## 1.6 Documentation, software release and trademarks

### Documentation

The present manual provides information on the status messages and warnings of the rho4.

Overview of available documentation	Part no.	
	German	English
Rho 4.0 Connectivity Manual	1070 072 364	1070 072 365
Rho 4.0 System description	1070 072 366	1070 072 367
Application IndraControl VEH 30	1070 170 330	1070 170 331
Rho 4.1/BT155, Rho 4.1/BT155T, Rho 4.1/BT205 Connectivity manual	1070 072 362	1070 072 363
Rho 4.1, Rho 4.1/IPC300 Connectivity manual	1070 072 360	1070 072 361
Control panels BF2xxT/BF3xxT, connection	1070 073 814	1070 073 824
Rho 4.1 System description	1070 072 434	1070 072 185
ROPS4/Online	1070 072 423	1070 072 180
BAPS plus	1070 072 422	1070 072 187
BAPS3 Short description	1070 072 412	1070 072 177
BAPS3 Programming manual	1070 072 413	1070 072 178
Control functions	1070 072 420	1070 072 179
Signal descriptions	1070 072 415	1070 072 182
Status messages and warnings	1070 072 417	1070 072 181
Machine parameters	1070 072 414	1070 072 175
PHG2000	1070 072 421	1070 072 183
DDE-Server 4	1070 072 433	1070 072 184
DLL-Library	1070 072 418	1070 072 176
Rho 4 available documentation on CD ROM	1070 086 145	1070 086 145

 **In this manual the floppy disk drive always uses drive letter A:, and the hard disk drive always uses drive letter C:.**

Special keys or key combinations are shown enclosed in pointed brackets:

- Named keys: e.g., <Enter>, <PgUp>, <Del>
- Key combinations (pressed simultaneously): e.g., <Ctrl> + <PgUp>

## Safety Instructions

### Release

 **This manual refers to the following versions:**

**Hardware version: rho4**

**Software release: ROPS4**

### Trademarks

All trademarks of software installed on Rexroth products upon delivery are the property of the respective manufacturer.

Upon delivery, all installed software is copyright-protected. The software may only be reproduced with the approval of Rexroth or in accordance with the license agreement of the respective manufacturer.

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MOBY® is a registered trademark of Siemens AG.

AS-I® is a registered trademark of AS-International Association.

SERCOS interface™ is a registered trademark of Interessengemeinschaft SERCOS interface e.V. (Joint VDW/ZVEI Working Committee).

INTERBUS-S® is a registered trade mark of Phoenix Contact.

DeviceNet® is a registered trade mark (TM) of ODVA (Open DeviceNet Vendor Association, Inc.).

rho4 status messages

## 2 rho4 status messages

This manual contains a list of coded status messages which is issued at the interface together with the texts displayed on the PHG under 'Diagnosis error', possible causes and measures for eliminating them.

### In case of a system error proceed as follows

- Write down PHG display, text and displayed address.
- Write down operation or program which caused the system error as well as the software version.
- Inform after-sales service.

From version VO06C it is possible to transfer system error data via V24 interface to a diagnostic PC, if the Windows program "Hyperterminal" is installed on it.

If the system error is displayed on the PHG, it is possible to output data from the control via the V24 interface by holding the PHG-key "3". This data may be important to analyse the system error.

Note: It is possible to activate the data output several times.

Procedure (example):

- Connect a serial ROPS- or null modem cable to the serial interface X33 and to a COM interface of the diagnostic PC (in this case e.g. the COM3 of the rho4.1).  
Create a new connection in Hyperterminal e.g. "COM3-X33":
  - Select in [Connect to] "COM3"
  - Set the properties of COM3 to
 

Bits per second	9600
Data bits	8
Parity	no
Stop bits	1
Flow control	Hardware
  - Select [Transfer] [Capture text...]
  - Select a filename to store the data (e.g. C:\Bosch\rho4\kpc\sysExc.txt)
  - hold the PHG-key "3" pressed until the message "X33-DUMP 9600,N,8,1" is displayed in line 4 on the PHG
  - wait until the message "System error xxxxx" "RBS START:RC OFF/ON" is displayed on the PHG again
  - Stop the recording by [Transfer] [Capture text...] [Stop]
- Mail the recorded file (in this case sysExc.txt) to Bosch Rexroth, department BRC/ESH.
- For possible queries, save all programs and machine parameters which are active at this time.

## rho4 status messages

## Explanation of the indices used in the table

$a = 1$ to 24	Axis index
$b = 1$ to 16	Belt index
$k = 1$ to 16	Kinematic index
$p = 1$ to 16	PPO/IOL index
$x = 1$ to 40	CAN input block index
$y = 1$ to 40	CAN output block index

Code No.	PHG text display	Possible cause	Remark
256	System error 256 P2 not working	Runtime control (Watchdog) has responded. Processor P2 has stopped working.	Runtime control P6 set too sharp. Increase value of P6, only after consultation with Bosch. Clock start time, P5 set too low. Increase value of P5, only after consultation with Bosch. Inform after-sales service, see notice at beginning of this chapter
384	System error 384 Transformation error	FPU trap in transformation	E.g. division by zero in transformation Inform after-sales service, see notice at beginning of this chapter
896	System error 896 Error in B_STEUER	Coordinate change from JC to WC not recognized correctly by the control	Corrupt software Inform after-sales service, see notice at beginning of this chapter
1280	System error 1280 error watchdog 1	Watchdog 1 defective in hardware	Inform after-sales service, see notice at beginning of this chapter
1408	System error 1408 error watchdog 2	Watchdog 2 defective in hardware	Inform after-sales service, see notice at beginning of this chapter
1536	System error 1536 error watchdog x	Watchdog 1 or 2 defective in hardware	Inform after-sales service, see notice at beginning of this chapter
3200	System error 3200 SVC trap	Inadmissible interrupt	Inform after-sales service, see notice at beginning of this chapter
4480	System error 4480 Heap overflow	System heap limit reached	Check system heap limit
4736	System error 4736 DISPOSE error	When releasing a memory range of the system heap, an error has been detected	This system error may not occur in normal operation. Inform after-sales service, see notice at beginning of this chapter
5120	System error 5120 bad interpol. tpye	Inadmissible interpolation type in block preparation	Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
5888	System error 5888 no STOP in task	Error in operating system task	Inform after-sales service, see notice at beginning of this chapter
6528	System error 6528 task stack overflow	Stack overflow of active task	Inform after-sales service, see notice at beginning of this chapter
6784	System error 6784 EMX no task ready	No task in ready-queue	Inform after-sales service, see notice at beginning of this chapter
6912	System error 6912 EMX Heap overflow	Too many user processes initialized	Change machine parameter P7: Increase EMX heap, decrease SYS heap until error is eliminated. If now the SYS heap is not sufficient (P1 runtime error, SYS heap overflow), a larger memory is required or the number of processes (parallel/also branches) must be reduced. Inform after-sales service, see notice at beginning of this chapter
7040	System error 7040 EMX-Dispose error	EMX releases heap-range which is out of the permissible limits	Inform after-sales service, see notice at beginning of this chapter
7296	System error 7296 EMX-Heap fatal error	General EMX heap error. Negative EMX heap length in MEMAVAIL	Inform after-sales service, see notice at beginning of this chapter
7424	System error 7424 task already exists	Error in creating a task-control-block of user process. Task-control-block already exists	Inform after-sales service, see notice at beginning of this chapter
8320	PG4 buffer overflow	Error in operating system task	Inform after-sales service, see notice at beginning of this chapter
8448	PG4 unknown function	Error in operating system task	Inform after-sales service, see notice at beginning of this chapter
8832	VxWorks – sysExcMsg:	VXWorks has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
8960	System error 8960 SysExc:Divide Error	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9088	System error 9088 SysExc:Debug Except	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9216	System error 9216 SysExc:NMI Interrupt	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9344	System error 9344 SysExc:BreakPoint	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9472	System error 9472 SysExc:INTO Overflow	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
9600	System error 9600 SysExc:BOUND Range	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9728	System error 9728 SysExc:Invalid Opcode	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9856	System error 9856 SysExc:NoCoprocessor	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
9984	System error 9984 SysExc:Double Except	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10112	System error 10112 SysExc:CoProcSegOver	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10240	System error 10240 SysExc:Invalid TSS	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10368	System error 10368 SysExc:SegNotPresent	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10496	System error 10496 SysExc:Stack Fault	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10624	System error 10624 SysExc:GenProtection	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10752	System error 10752 SysExc:Page Fault	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
10880	System error 10880 SysExc: (reserved)	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
11008	System error 11008 SysExc:CoProc. Error	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
12544	Pass.factor–overflow	The passing factor (R_PTP) in the BAPS program is too high	Check BAPS program
13056	System error 13056 incorr.comp. servo–b	Incorrect servo board components applied via machine parameter P401. Possible that: Plug number of a measuring system, or module number of a measuring system do not correspond with P401. Defective CAN module	Change machine parameter P401 Inform after-sales service, see notice at beginning of this chapter
13568	System error 13568 MODE <> 2: CODE-ERROR	Serious error in run-up of control	Hardware defective Inform after-sales service, see notice at beginning of this chapter
13696	System error 13696 Mode don't turn to 2	Serious error in run-up of control	Corrupt software Inform after-sales service, see notice at beginning of this chapter



## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
13824	System error 13824 MODE don't turn to 4	Serious error in run-up of control	Corrupt software Inform after-sales service, see notice at beginning of this chapter
14464 to 14487	relative lag too big Axis <b>a</b>	Only for robot type 3: The maximum relative lag adjusted via MP 308 between master and slave axis has been exceeded	Master or slave axis mechanically jammed or check adjustment of control circuit
14592	no reference points	A kinematic is to be moved in the BAPS process which has not yet travelled to the reference points.	Via PHG-Mode 7.3.2, the line in the BAPS program and with that the kinematic to be referenced can be found
14848 to 14871	machine limit switch axis <b>a</b>	Actual position of axis has exceeded the limit switches defined in machine parameters P204, P205 for more than the limit switch tolerance P206	Axis must be moved mechanically into valid range
14976 to 14999	servo error axis <b>a</b>	Axis cannot follow the position set-point of the control. Lag > 1,33 x nominal lag	Check servo loop setting (machine parameter P101)
15616	Tens: no main-region	Tensor-Interpolation: The Eulerangles cannot be transformed into the main region	Change path (Orientation)
15744	Tens:angle not comp.	Tensor-Interpolation: The Eulerangles cannot be calculated	Change path (Orientation)
15872	rho40: no.of axes/kin	for rho40 only: Too many axes or kinematics for the existing option	Option for purchase. Consult Bosch-Rexroth
16256 to 16271	BS: no feed allow Kinem.: <b>k</b>	The belt synchronous kinematic is prevented from moving by RC input signals of the PLC (e.g. feed allow)	Error in PLC program (e.g. limit switches, light barriers)
16640	EMERGENCY STOP input	RC input signal Emergency stop Not is not set	Check Emergency stop loop
16768	System error 16768 MODE don't turn to 6	Serious error in run-up of control	Hardware defective Inform after-sales service, see notice at beginning of this chapter
16896	System error 16896 MODE don't turn to 8	Serious error in run-up of control	Hardware defective Inform after-sales service, see notice at beginning of this chapter
17024	System error 17024 MODE not 10: CAN-I/O	Serious error in run-up of control	e.g. no CAN module available. Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
17152	System error 17152 MODE don't turn to 12	Serious error in run-up of control	Corrupt software Inform after-sales service, see notice at beginning of this chapter
17280	System error 17280 MODE don't turn to 14	Serious error in run-up of control	Corrupt software Inform after-sales service, see notice at beginning of this chapter
17408	System error 17408 MODE don't turn to 16	Serious error in run-up of control	Corrupt software Inform after-sales service, see notice at beginning of this chapter
17536	System error 17536 SB-OUT – double	Double assignment of setpoint outputs	Assign sub-parameter in P401 in a way that no double assignment exists
17664	System error 17664 num. of ax. too small	The number of axes set via P302 is too small for the robot type P306 in question. This would cause a FPU trap in the coordinate transformation.	Increase number of axes P302 corresponding to robot type Inform after-sales service, see notice at beginning of this chapter
17792	System error 17792 singular EQS	The equation system occurring in the coordinate transformation of oblique portals is singular. Therefore, the backward transformation cannot be computed.	Change angle deviations P307 Inform after-sales service, see notice at beginning of this chapter, relevant only for robot types 14, 15, 16, 17
17920	System error 17920 MODE don't turn to -1	Serious error in run-up of control	Parameter error, e.g. clock start time does not correspond with digital drives Drives without voltage Incorrect transfer via CAN bus Inform after-sales service, see notice at beginning of this chapter
18048 to 18071	CAN-Alarm axis <b>a</b>	Communication to drive amplifier has been interrupted	CAN bus connection is interrupted. Scanning times, clock time, do not correspond. Drive amplifier has been switched over to function generator operation or analog operation
18432	System error 18432 RTC_VALUE too large	The maximum value with which the RTC timer can be set has been exceeded	Only after having consulted Bosch: machine parameter P5, reduce the scaler or increase the clock start time Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
18560	System error 18560 RTC_VALUE too small	The minimum value with which the RTC timer can be set has not been reached	Only after having consulted Bosch: machine parameter P5 reduce the scaler or increase the clock start time Inform after-sales service, see notice at beginning of this chapter
18688	System error 18688 P2-Clock inaccurate	The desired Clock start time cannot be precisely set with the timers. This would cause wrong travel movement speeds	Only after having consulted Bosch: the clock start time * 1250 set in machine parameter P5 must be divisible in integers by the smallest common multiple of the scaler. Inform after-sales service, see notice at beginning of this chapter
18944	Incorr. highspeed-io	rho4.1: A measuring switch is applied in P11, the measuring switch input (X41) is however missing rho4.0: Machine parameters have been loaded, for which a measuring switch is applied in P11. The rho4.0 has however no measuring switch input	Check parameter P11
19200	System error 19200 CAN- incorr. BAUDR	Inadmissible baud rate for CAN transfer	The baud rate for CAN buses which are assigned with axes, must be set to 1 MB
19328	System error 19328 CAN-I/O-Block undef.	There are no defined CAN-I/O blocks, see manual rho4 machine parameters, P30, P31, P32	If the number of the CAN-I/O blocks in P30 is increased, P31 and P32 must be adjusted
19456 to 19479	Err. Multi-MS-Master Axis <b>a</b>	Error at master measuring system which is occupied through a logic band	Faulty transfer via the CAN-Bus. CAN-Bus connection interrupted
19584 to 19599	BS-Begin Limit Belt <b>b</b>	At the execution of the first belt-synchronous movement block of belt kind 4 it was detected, that the end of this movement block can not be reached before the beltcounter exceeds the limit value defined in SPC_FCT 53 BEL-TRANGE	Part no more reachable. Check execution/movement time of the decision to move to the part and the beginning of SYNCHRON – If necessary reduce belt velocity – If necessary set start position closer to the belt – If necessary program reentry via SPC_FCT 47 EXC_DEFINE

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
19712 to 19727	BS–Take Limit Belt <b>b</b>	At the execution of the beltsynchronous program part of belt kind 4 it was detected, that the beltcounter has exceeded or would exceed the limit value defined in SPC_FCT 53 BELTRANGE at the execution of a movement block	The beltsynchronous treatment can not be finished completely. Check treatment time – If necessary reduce belt velocity – If necessary start previously with the treatment, resp. increase range of latest begin – If necessary program reentry via SPC_FCT 47 EXC_DEFINE
19840	Arm–length MP307 = 0	In mach.-par. P307 the invalid armlength 0 is applied.	Change MP 307
20736	incor. Mode in Clock	Error in operating system task	Inform after-sales service, see notice at beginning of this chapter
20864	incor.Intype in Clock	Incorrect interpolation type has occurred	Inform after-sales service, see notice at beginning of this chapter
21248	CP1 not updated	Runtime control, watchdog have not responded. Processor P1 does not work	Runtime control in machine parameter P6 set too sharp. Increase value of P6, only after consultation with Bosch Inform after-sales service, see notice at beginning of this chapter
21504	P2 clock overflow	Computing time too long	Is issued if analog output of P2 computing time is active Inform after-sales service, see notice at beginning of this chapter
21632	incorr. Mode in Loop	Incorrect mode in run-up phase	Inform after-sales service, see notice at beginning of this chapter
21760 to 21775	BS–workroom limit Kinem.: <b>k</b>	Kinematic is in singular position	Move kinematic into valid range in Manual. Check programmed points and belt position
21888 to 21903	workroom limit Kinem.: <b>k</b>	Kinematic is in singular position	Move kinematic into valid range in Manual. Check programmed points
22144 to 22167	travel range limit axis <b>a</b>	Axis has reached the software limit switches defined in machine parameters P204, P205	Move axis into valid range in Manual. Check programmed points

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
22272 to 22287	BS-tol.with nth MOVE Kinem.: <b>k</b>	A belt-synchronous block has only been activated after the belt has exceeded the belt value of the preceding belt synchronous travel block. This occurs when the travel block is activated too late	Input queries delay the block preparation Many computations, loops Higher priority processes, many equal priority processes Access to occupied resources, e.g. kinematics, devices Insufficient time for block preparation, P5
22400 to 22423	Ax-Velocity exceeded axis <b>a</b>	Axis speed exceeds the values defined in machine parameter P103 during a linear movement	Check programmed speeds resp. WC Jog speeds, P11, P112, P115
22528 to 22543	BS-ambiguity Kinem.: <b>k</b>	Programmed point and interpolation direction do not agree	Check belt position
22656 to 22671	ambiguity Kinem.: <b>k</b>	Programmed point and interpolation direction do not correspond	Check BAPS program
22784 to 22799	AUTO/MANUAL switch Kinem.: <b>k</b>	During travel the corresponding kinematic has been switched to Manual	First stop active programs; then switch to Manual
22912 to 22935	CAN VM-switch off Axis <b>a</b>	Error in supply module of the drive	See manual Servodyn-D
23040 to 23055	BS-tol.with 1.Synch. Kinem.: <b>k</b>	The 1st belt-synchronous block has been activated only after the belt had exceeded the belt value defined in the last travel block before belt-synchronous.	Program is started too late Travel movements take longer because axes are not in position Travel distance longer because of end point of last program Belt runs too fast
23296 to 23311	BS-tol. at block end Kinem.: <b>k</b>	The end of a belt-synchronous block has only been reached when the belt had already exceeded the belt value defined in this travel block	Too steep geometry Acceleration resp. deceleration values programmed too low Too long jerk limit times for $\sin^2$ slope Too short point sequence During the check at the block start, the tolerance time, e.g. by retriggering, was still active
23552 to 23575	CAN Interpol.– stop axis <b>a</b>	The preset speed setpoint of the rho4 exceeds the drive limit value of the drive (Servodyn-GC/Servodyn-D)	Check parameter in rho4 and drive

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
23680 to 23703	CAN No comm.–teleg. axis <b>a</b>	No setpoint telegram is received within 2 ms after a synchronization process (only for Servodyn-GC)	Too high run times in rho4
23808 to 23831	CAN No act.– teleg. axis <b>a</b>	The actual value telegram cannot be sent by the drive (only for Servodyn-GC)	Drive amplifier defective
23936 to 23959	CAN Limit– switch axis <b>a</b>	Machine limit switch monitoring of the Servodyn-GC drive amplifier has responded	Check parameter in rho4 and drive
24064 to 24087	CAN LAG– fault axis <b>a</b>	The dynamic lag monitoring of the drive has responded	Possibly too high acceleration or too high speed
24192 to 24215	CAN VM-error Axis <b>a</b>	Error in supply module of the drive	See manual Servodyn-D
24320 to 24343	CAN Logic Power axis <b>a</b>	Wrong logic voltage for drive module	Check power supply of drive
24448 to 24471	CAN Overvoltage axis <b>a</b>	Admissible intermediate circuit voltage in drive amplifier has been exceeded or not reached	Check intermediate circuit voltage
24576 to 24599	CAN Controller–temp axis <b>a</b>	Over-temperature in drive amplifier	Check motor/amplifier layout
24704 to 24727	CAN Motor–temp axis <b>a</b>	The maximum permissible temperature of the motor has been exceeded	Check motor/amplifier layout
24832 to 24855	CAN meas. Sys. fault axis <b>a</b>	Measuring system (abs. transmitter, resolver) defective Measuring system cables defective	Check transmitter Check measuring system cables
24960 to 24983	CAN Parameterfault axis <b>a</b>	A parameter error has occurred if, due to an initialization error or RAM defect, no valid parameters or no valid software are available for the drive. All parameters are acquired by a checksum which is checked every 64 communication cycles. If the checksum is incorrect, an error is reported (only for Servodyn-GC)	Drive amplifier defective

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
25216 to 25239	CAN Current fault axis <b>a</b>	A short-circuit has possibly occurred Motor current has exceeded the limit value	Motor defective
25344 to 25367	CAN Communic. fault axis <b>a</b>	Servodyn-GC: no synchronization telegram is received during a communication cycle Servodyn-D: communication error on CAN bus. sync. telegram, set-point telegram or actual value telegram out of the permissible time window	Check scanning time of drive and control
25472 to 25495	global CAN-Fault axis <b>a</b>	Servodyn-GC: is reported by the drive as soon as it detects a status which prevents the release of the drive Servodyn-D: general fault of drive amplifier. Further information on error display of drive amplifier (7 segment display)	Servodyn-GC: drive amplifier defective Servodyn-D: see Servodyn-D manual
25856	System error 25856 TSK-MN: O-TCB DELETE	Error in deletion of the task-control-block of a user output process which is stopped	Inform after-sales service, see notice at beginning of this chapter
25984	System error 25984 TSK-MN: R-TCB DELETE	Error in deletion of the task-control-block of a user process which stops itself (RUNNING)	Inform after-sales service, see notice at beginning of this chapter
26112	System error 26112 TSK-MN: Proc.SUSPEND	Error in 'suspending' a user process which had a runtime error	Inform after-sales service, see notice at beginning of this chapter
26240	System error 26240 TSK-MN: O-Pr.SUSPEND	Error in 'suspending' a user output process after a runtime error has occurred	Inform after-sales service, see notice at beginning of this chapter
26368	System error 26368 TSK-MN: P-PROC-START	Error in the initialization of a user process	Inform after-sales service, see notice at beginning of this chapter
26624	System error 26624 TSK-MN: P-TCB-REQ.	Error in the activation of a user process	Inform after-sales service, see notice at beginning of this chapter
26752	System error 26752 TSK-MN:O-PROC-START	Error in the initialization of a user output process	Inform after-sales service, see notice at beginning of this chapter
26880	System error 26880 TSK-MN: O-TCB-CREATE	Error in creating the task-control-block of a user output process	Inform after-sales service, see notice at beginning of this chapter
27008	System error 27008 TSK-MN: O-TCB-REQ.	Error in activating a user output process	Inform after-sales service, see notice at beginning of this chapter
27136	System error 27136 TSK-MN: PARALLEL_END	Sub-process Counter with PARALLEL_END not equal zero	Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
27264	System error 27264 TSK-MN: TRM-MESSAGE	Inter-task communication: Error in sending a message	Inform after-sales service, see notice at beginning of this chapter
27392	System error 27392 TSK-MN: REQ-MESSAGE	Inter-task communication: Error in receiving a message	Inform after-sales service, see notice at beginning of this chapter
28288	System error 28288 at SEMA_SET :DEV-IO	For WRITE devices the exclusive access could not be secured	Inform after-sales service, see notice at beginning of this chapter
28416	System error 28416 at SEMA_RESET:DEV-IO	After a WRITE device or after abort of a WRITE device, an error in the exclusive access has been detected	Inform after-sales service, see notice at beginning of this chapter
28672	System error 28672 fm-err. in org.-part	File chain not sequential. Error is detected during run-up (CHECK_USMEM). User memory is reorganized, loss of all data	Inform after-sales service, see notice at beginning of this chapter
28800	System error 28800 file-management err.	Error in file management	Inform after-sales service, see notice at beginning of this chapter
28928	System error 28928 fm-err.dur. file-I/O	Error in file management	Inform after-sales service, see notice at beginning of this chapter
29056	System error 29056 fm-err. in org.-part	File management error in organization part. Error is detected during run-up (CHECK_USMEM). User memory is reorganized, loss of all data	Inform after-sales service, see notice at beginning of this chapter
29184	System error 29184 fm-err.in file-chain	File management error in organization part. Error is detected during run-up or reset. User memory is reorganized, loss of all data	Inform after-sales service, see notice at beginning of this chapter
29440	System error 29440 acc.on a closed file	Read or write access to a closed file	Inform after-sales service, see notice at beginning of this chapter
29568	System error 29568 inadm.file-writ.mode	Write access with inadmissible destination address (file end)	Inform after-sales service, see notice at beginning of this chapter
29696	System error 29696 inad.file-adr. writ.	Write access with wrong destination address. Destination address larger than file	Inform after-sales service, see notice at beginning of this chapter
29824	System error 29824 inad.ov.writ.aft.EOF	File end exceeded!	Inform after-sales service, see notice at beginning of this chapter
30080	System error 30080 inad.file-read.-mode	Inadmissible file read mode	Inform after-sales service, see notice at beginning of this chapter
30208	System error 30208 inadm.file-open-mode	Inadmissible file read mode	Inform after-sales service, see notice at beginning of this chapter
30336	System error 30336 Alloc-length = 0	Allocation error	Inform after-sales service, see notice at beginning of this chapter



## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
30464	System error 30464 incorr. OM of ALLOC	Allocation error	Inform after-sales service, see notice at beginning of this chapter
30592	System error 30592 undefined open-mode	Undefined open mode	Inform after-sales service, see notice at beginning of this chapter
30720	System error 30720 incorr. CM of DIR	Incorrect control mode of Dir	Inform after-sales service, see notice at beginning of this chapter
55552	Ext.Proc.stop inadm.	Either BAPS test is active or strobe for external program selection or auto-start is pending	Check in PLC program whether the signals are correctly set
55936	INIT select. inadm.	An error exists which does not allow the processing of programs with axis movements (Emergency stop, no controller release, Manual mode etc.)	Check PLC program. Check current error resp. system status under DIAGNOSIS
56192	INIT selection:error	Process has already been selected	Abort INIT and select again or start selected program INIT
76672 to 76695	CAN-Param-Trans.Err. axis <b>a</b>	Timeout of CAN parameter transfer	CAN connection to drive is not correct  In case of display of all axes: check CAN cables and plugs, check booster rack.  In case of display of individual axes: Check amplifier of corresponding axis(axis)
76800 to 76823	CAN-Param. No SYNC axis <b>a</b>	Write error in transfer of the parameter-SYNC-telegram	SYNC telegram cannot be written into CAN dual port. Probably a HW error on CAN module in the rho4
76928 to 76951	CAN-Param. EEPROM axis <b>a</b>	Error in EEPROM programming occurred	EEPROM on amplifier assembly defective
77056 to 77079	CAN-Param. P602 axis <b>a</b>	MPP amplifier type does not correspond to existing amplifier	Check P602, check amplifier type
77184 to 77207	CAN-Param. P603 axis <b>a</b>	Inadmissible motor type	Check P603, check motor type, type plate
77312 to 77335	CAN-Param. P5 axis <b>a</b>	Inadmissible P2 action time	Check P5, permitted values for CAN-coupling: 6 to 32 ms
77440 to 77463	CAN-Param. P604 axis <b>a</b>	P-portion of the speed controller not in permissible range	Check P604, observe specification of drive amplifier

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
77568 to 77591	CAN-Param. P605 axis <b>a</b>	Portion of the speed controller not in permissible range	Check P605, observe specification of drive amplifier
77696 to 77719	CAN-Param. P606 axis <b>a</b>	Loop gain of position control not in permissible range	Check P605, observe specification of drive amplifier
77824 to 77847	CAN-Param. Lim.sw.1 axis <b>a</b>	Limit switch position not in permissible range	Check P204, P205, P206, P207, P208. The zero crossing of the resolver next to the reference point end position (P207, P208). Must be within the permitted travel range of the axis
77952 to 77975	CAN-Param. Lim.sw.2 axis <b>a</b>	Limit switch position not in permissible range	Check P204, P205, P206, P207, P208. The zero crossing of the resolver next to the reference point end position (P207, P208). Must be within the permitted travel range of the axis
78080 to 78103	CAN-Param. P607.1 axis <b>a</b>	Torque limit value of motor in operating mode AUTO not in permissible range	Check P607, observe specification of drive amplifier
78208 to 78231	CAN-Param. P607.2 axis <b>a</b>	Torque limit value of motor in operating mode MANUAL not in permissible range	Check P607, observe specification of drive amplifier
78336 to 78359	CAN-Param. P103 axis <b>a</b>	Speed limit value in automatic mode not in permissible range	Check P23, P103, observe specification of drive amplifier
78464 to 78487	CAN-Param. P114 axis <b>a</b>	Speed limit value in manual mode not in permissible range	Check P23, P114, observe specification of drive amplifier
78592 to 78615	CAN-Param. P607.3 axis <b>a</b>	Torque limit value of motor in operating mode Emergency stop not in permissible range	Check P607, observe specification of drive amplifier
78720 to 78743	CAN-Param. P608 axis <b>a</b>	Inclination of the Emergency stop delay ramp not in permissible range	Check P608, observe specification of drive amplifier
78848 to 78871	CAN-Param. P609 axis <b>a</b>	Deceleration speed not in permissible range	Check P609, observe specification of drive amplifier
78976 to 78999	CAN-Param. P610 axis <b>a</b>	Maximum static positioning error not in permissible range	Check P610, observe specification of drive amplifier

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
79104 to 79127	CAN-Param. P611 axis <b>a</b>	Maximum lag error relative to motor speed not in permissible range	Check P611, observe specification of drive amplifier
79232 to 79255	CAN-Param. P612 axis <b>a</b>	Filter band width for torque signal not in permissible range	Check P612, observe specification of drive amplifier
79360 to 79383	CAN-Param. P613 axis <b>a</b>	Damping factor of the filter of the 2nd order not in permissible range	Check P613, observe specification of drive amplifier
79488 to 79511	CAN-Param. CPS axis <b>a</b>	Inadmissible value for CAN position scaling, CPS	Check P401 (pulses per revolution), observe specification of drive amplifier
79616 to 79639	CAN-Param. P614 axis <b>a</b>	Value for zero point offset not in permissible range	Check P614, permitted values: 0 to 360 °.
79744 to 79767	CAN-Para. dir.rotat. axis <b>a</b>	Error in transfer of rotational direction	Drive amplifier possibly defective
79872 to 79895	CAN-Param. P615 axis <b>a</b>	Error in transfer of parameter 'Overtemperature protection On/Off'	Check P615, drive amplifier possibly defective
92416	No BSC file present	Parameter download is activated for Sercos axes (P38) or CANopen axes (P30)  The BSC file required for this of the extended machine parameters is not existing or is faulty	Load BSC file per ROPS4 coupling or switch off download
94080	CANopen-I/O-DI. CAN1 N-Id/C-Nr: <i>nn00dddd</i>	Error during machine parameter download (CANopen)	<i>nn</i> = Node-ID (decimal) <i>00</i> = separation sign <i>dddd</i> = Status message code as decimal number  The decimal number is to be converted into hexadecimal. The cause of the fault can then be determined with the help of the table 'CANopen-Status message codes'  (see chapter 4)

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
94208	CANopen-I/O-DI. CAN2 N-Id/C-Nr: <i>nn00dddd</i>	Error during machine parameter download (CANopen)	<i>nn</i> = Node-ID (decimal) 00 = separation sign <i>dddd</i> = Status message code as decimal number  The decimal number is to be converted into hexadecimal. The cause of the fault can then be determined with the help of the table 'CANopen-Status message codes'  (see chapter 4)
94336	CANopen-Axis-DI CAN1 N-Id/C-Nr: <i>nn00dddd</i>	Error during machine parameter download (CANopen)	<i>nn</i> = Node-ID (decimal) 00 = separation sign <i>dddd</i> = Status message code as decimal number  The decimal number is to be converted into hexadecimal. The cause of the fault can then be determined with the help of the table 'CANopen-Status message codes'  (see chapter 4)
94464	CANopen-Axis-DI CAN2 N-Id/C-Nr: <i>nn00dddd</i>	Error during machine parameter download (CANopen)	<i>nn</i> = Node-ID (decimal) 00 = separation sign <i>dddd</i> = Status message code as decimal number  The decimal number is to be converted into hexadecimal. The cause of the fault can then be determined with the help of the table 'CANopen-Status message codes'  (see chapter 4)
94720	CANopen-encoderDI CAN1 N-Id/C-Nr: <i>nn00dddd</i>	Error during machine parameter download (CANopen)	<i>nn</i> = Node-ID (decimal) 00 = separation sign <i>dddd</i> = Status message code as decimal number  The decimal number is to be converted into hexadecimal. The cause of the fault can then be determined with the help of the table 'CANopen-Status message codes'  (see chapter 4)

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
94848	CANopen-encoderDI CAN2 N-Id/C-Nr: <i>nn00dddd</i>	Error during machine parameter download (CANopen)	<i>nn</i> = Node-ID (decimal) 00 = separation sign <i>dddd</i> = Status message code as decimal number  The decimal number is to be converted into hexadecimal. The cause of the fault can then be determined with the help of the table 'CANopen-Status message codes'  (see chapter 4)
95104	CANopen part.n. reply CANx N-Id: <i>nn</i>	CANopen device not connected or bus plug not connected. Wrong Node-ID	<i>x...</i> = CAN-Bus-Nr <i>nn</i> = Node-ID (decimal) Check machine parameters P31/P32. Check CANopen device and connections
100864	System error 100864 ORG_START<>MEM_BEGIN	File management error in organisation part. Error is detected during run-up, CHECK_USMEM. User memory is reorganized, loss of all data	Inform after-sales service, see notice at beginning of this chapter
101504	System error 101504 FILE NOT SEQUENTIAL	File management error in organisation part. Error is detected during run-up, CHECK_USMEM. User memory is reorganized, loss of all data	Inform after-sales service, see notice at beginning of this chapter
102400	IntExc:Divide Error	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
102528	IntExc:Debug Except	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
102656	IntExc:NMI Interrupt	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
102784	IntExc:BreakPoint	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
102912	IntExc:INTO Overflow	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103040	IntExc:BOUND Range	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103168	IntExc:InvalidOpcode	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103296	IntExc:NoCoprocesor	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103424	IntExc:Double Except	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
103552	IntExc:CoProcSegOver	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103680	IntExc:Invalid TSS	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103808	IntExc:SegNotPresent	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
103936	IntExc:Stack Fault	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
104064	IntExc:GenProtection	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
104192	IntExc:Page Fault	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
104320	IntExc: (reserved)	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
104448	IntExc:CoProc. Error	The processor has reported an exceptional situation	Inform after-sales service, see notice at beginning of this chapter
110080 to 110103	XMP-assignm. incorr. Axis <b>a</b>	Drive parameters do not suit to applied axis CANopen parameter => SERCOS axis or vice-versa	Check parameter files (*.scs, *.isc)
110208	XMP Checksum error	Checksum of the BSC file of the extended machine parameters is incorrect	Create again BSC file with ROPS4, i.e. call of the 'XMP-ASCII-> BSC'-converter Then load again BSC file into the control unit
112512	System error 112512 EEPR-Verify not ok	EEPROM-defect with machine parameter programming	Inform after-sales service, see notice at beginning of this chapter
114560	prot.err.while WRITE	The value to be written exceeds the permissible format	Check BAPS program. For permissible formats, see manual
114816	prot.err. while READ	Read format does not correspond to desired format	Check BAPS program and format. See manual
131840	inadmissible SPC_FCT	A SPC_FCT was called, which is not longer supported	Ckcek the declaration number of the SPC_FCT
131968 to 131983	BS-working area Belt <b>b</b>	SPC_FCT 53 BELTRANGE was called with wrong parameter or was not called in the beltsynchronous part or before use of belt kind 4	Check parameter Range limit outside of the movement range?

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
132096 to 132111	BS-End ambiguity Belt <b>b</b>	At the detection of the last beltsynchronous movement block an error occurs	Error position SYNCHRON_END: No last movement block was detected Error position movement block: A second last movement block was detected
134528	proc. already exists	An already existing process is started for a second time	Check BAPS program
134656	travel time not all.	The programmed travel time T is negative or equals zero	Check BAPS program
134784	velocity not all.	Inadmissible values for V or V_PTP have been programmed	Check BAPS program
135040	user memory full	No place in user memory	Delete not necessary file from the memory
135168	WRITE_BEGIN expected	A WRITE command has been programmed, without opening the file by WRITE_BEGIN before	Check BAPS program
135296	file repeat. opened	File has been opened for reading for more than 127 times	Check BAPS program and/or preceding operation
135424	file still open	Is also used if in BAPS/file-I/O a file opened for reading is to be written. In this case, the file must be closed with the CLOSE command	Check BAPS program and/or preceding operation
135552	file name n. allowed	File name of an ASSIGN-command has more than 8 characters or contains inadmissible characters.	Check ASSIGN-command in BAPS program.
135680	end of file reached	Is read too often	Check BAPS program. Use END_OF_FILE command
135808	negative line-number	For the WRITE-/READ-access to a file (file-I/O) a negative line number has been indicated	Check program
135936	DAT-file missing	Selected file is not available, wrong name	Check BAPS program Check memory contents
136064	READ write-open file	Read acces to a file opened for writing	Check BAPS program
136192	READ_BEGIN expected	A READ-command has been programmed, without opening the file with READ_BEGIN before	Check BAPS program
136448	WCSYS/TOOLS.DAT miss	No system file WCSYST.DAT resp. TOOLS.DAT in memory available	Check current memory contents

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
136576	tool/wcsys-name miss	The used name of the WC_SY-STEM resp. of the TOOL in the BAPS program is not contained in the corresponding system file	Check WCSYST.DAT resp. TOOLS.DAT
136832	parameter ext. prog.	The transfer parameters do not correspond with the declared place holders of the external subroutine	Check BAPS program
136960	parameter number	The transfer parameters do not correspond with the declared parameters of the external subroutine	Check BAPS program
137088	parameter type	The transferred parameter is of another type as the place holder in the external subroutine	Check BAPS program
137216	parameter declar.	The parameter declaration in the main program and the subroutine (value/variable) do not agree	Check BAPS program
137344	program needs param.	An external subroutine (with parameters) has been started as main program	Check BAPS program
137472	integer overflow	Conversion result does not correspond to the permissible format for INTEGER variable [ $-2^{31}$ to $+2^{31}-1$ ]	Check BAPS program
137600	Workspace violation WSP-No: <i>n</i>	The next movement instruction in the corresponding process violates the workspace displayed under 'A.R.-No'	<i>n</i> = Workspace number (1..32) The incorrect process and the QLL line number of the movement set with collision risk is displayed under PHG-Mode 7.3.2 Check QLL program and P39
137728	parity data input	The parity of the addressed INTEGER input does not correspond with the preset parity	Check PLC program and/or machine parameter
137856	inad.par. in SPC_FCT	In the BAPS program, a file variable, an array or an I/O-variable has been transferred as parameter to an external program	Check BAPS program
137984	format error in DAT	Type of the variable to be read does not correspond with the format in the file	Check BAPS program and dat. file
138112	sub-pr. canc. main-p	A main process has started a subroutine (PARALLEL, ALSO, PARALLEL END). In this process, the main process is tried to be stopped with STOP	Check BAPS program(s)



## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
138240	division by zero	e.g. a not preset BAPS variable	Check BAPS program
138368	neg.argu. by sq.root	In the BAPS program, the root is taken from a negative number	Check BAPS program
138496	PTP not allowed here	PTP movement has been programmed with active BELT-SYNCHRON	Check BAPS program
138624	inad. output value	Output value not in permissible range (0 to 255)	Check BAPS program
138752	pt.n.reach.w.intpol.	Point cannot be travelled to with the currently used robot arm direction	Check BAPS program
138880	incorrect PKT file	Pnt-file and ird-file do not agree	It is possible that during conversion and renewed loading, only the ird-file has been loaded, i.e. pnt-file and ird-file have a different date (file identification)
139008	inco.abs.addr.in IRD	Error of system, safety control	Inform after-sales service, see notice at beginning of this chapter
139136	inadmissible output	Channel No. of the programmed output is not permissible	Check BAPS program
139264	inadmissible input	Channel No. of the programmed input is not permissible	Check BAPS program
139392	inadmiss. axis progr	Machine parameter not correctly set	Check machine parameter P402
139520	transf.err. IRD–prog	In the BAPS program, a JC-point is to be transferred into a POINT or vice versa. It cannot be transferred.	Check BAPS program
139648	file not found	File(s) not in memory, error of compilation	List current memory contents
139776	negative dwell	BAPS variable not correctly determined	Check BAPS program
140160	error in IRD program	Incorrect IRDATA code by error in compiler, safety monitoring	Inform after-sales service, see notice at beginning of this chapter
140288	IRD–Stack overflow	e.g. recursive subroutine calls	Check subroutine packing in BAPS program
140416	IRD–Stack ov. (low)	System error, safety monitoring	Inform after-sales service, see notice at beginning of this chapter
140544	incorrect axesumber	Incorrect compiler command in BAPS program or incorrect machine parameter	Observe compiler instructions in the BAPS program. Check machine parameter
140672	array e.out of range	Index computation incorrect or indices not preset	Check BAPS program

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
140800	IRD prog.na.too long	File names or program names used in the BAPS program are too long or contain inadmissible characters	Check BAPS program
140928	IRD option n. active	A not allowed BAPS function has been used	Check BAPS program. Determine permitted options
141056	no such PKT file	Point file not loaded or deleted	List current memory contents
141184	point not defined	A not defined point is addressed	Check point file, define/teach point
141696	BP not all. (belt-s)	A breakpoint in the BAPS plus testsystem was reached during a belt synchronization was active	Set no interruptions in a SYNCHRON section or use the interface signal BELT_SIM_RCI (Belt simulation)
141824	Value of beltcounter	At the preparation time of the SYNCHRON command the belt counter was not reset by the corresponding interface signal BELTxxRES_RCI or the beltcounter is outside the range defined in machine parameter P505	Reset belt counter. Increase positive flank or range or switch off the monitoring with min=0, max=0
141952	Beltsync. n.possible	MOVE_REL command or circular interpolation as next travel block after BELT SYNCHRON	Check BAPS program
142080	System error 142080 TI: error in PKT-fi.	Unexpected management data in PNT-file	Determine origin of pnt-file. Send file to after-sales service, if necessary Inform after-sales service, see notice at beginning of this chapter
142208	inad.Real-Expression	Number is not in permissible range, $-10^{37}$ to $10^{-38}$	Check BAPS program
142336	file-sequ. failed	Not enough place in memory	Delete files which are possibly not required in memory or remove gaps by reset
142464	parallel packing	A packing of the PARALLEL-command is not permissible	Check BAPS program
142592	incorr. BAPS-version	Current compilers in control and PG are different	Compile again the available programs
142848	St/Int.pnt too close	The programmed start point is too close to intermediate point in circular interpolation	Program correction, check circle points
142976	St/Endpnt too close	The programmed start point is too close to end point in circular interpolation	Check circle points in program
143232	only pos. feed !	Negative speed of circular interpolation	Check BAPS program

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
143360	no belt-option	Belt synchronization is disabled	Option for purchase. Can be enabled by Bosch customer service.
143616	Int/Endpnt too close	The intermediate point is too close at end point in circular interpolation	Check circle points in program
143744	St/Int/Endpnt = line	Start and intermediate point must not form a straight line with the end point	Check circle points in program
143872	St/Int/Endpnt t. cl.	Points are too close in intermediate interpolation	Check circle points in program
144128	incorrect KIN-number	Incorrect compiler command in BAPS program or incorrect machine parameters	Observe compiler instructions in the BAPS program. Check machine parameter P1
144256	PUBLIC-file missing	Global variables are used in the program. The corresponding global file is not available	Reload global file
144384	PUBLIC COMMON ID	The global file has been compiled later than the imported file	Compile at first global file, then all files to be imported
144512	two PUBLIC-files	Global variables from two global files are used	Export all global data of a file
144640	BNR-file missing	Addressed file is not available, e.g. incorrect name.	Check BAPS program. Check memory contents
144768	max. 99 sub-process.	More than 99 PARALLEL/ALSO branches have been programmed in the BAPS program	Check BAPS program
144896	PUBLIC not active	The option 'global data' is not activated.	This useful option can be activated by the Bosch after-sales service
145024	MF: version-identif.	Parameter 5 in file header is incorrect	Inform after-sales service, see notice at beginning of this chapter
145152	MF: axesumber	Parameter 4 in file header is incorrect	Number of axes in MPP does not agree with number of axes of file
145280	MF: READ-marker err.	The read marker of the bnr-file has not been correctly positioned in the read-begin command	Check READ_BEGIN
145408	MF: time-base	Parameter 3 in file header is incorrect	The interpolation time (clock time) set in P5 does not agree with the time base of the bnr-file
145536	MF: IP-PL-base	Incorrect file header of parameter 2	The special function parameter BASE of SPC_FCT 45 (MOVE_FILE) does not correspond with the IP-LR-base of the bnr-file

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
145664	MF: format error	The read marker of the bnr-file shows to a value which represents no floating point number in the IEEE format	Check READ_BEGIN-command, check bnr-file
145792	MF: MOD-Flag n. init	The special function parameter @MODULO_FLAG has not been occupied in the BAPS program	Before calling SPC_FCT 45 the parameter @MODULO_FLAG must be preset in the BAPS program
145920	MF: no endless-axis	The modulo flag for the corresponding axis has been set to the value 1.0 or 2.0 although the axis is not declared as endless axis in the MPP	Check machine parameter 303
146048	WCS: no posit-offset	No position offset has been entered	Check machine parameter 313
146176	WCS: too many orient	More than one orientation offset has been defined	Check machine parameter 313
146304	WCS: P313 inadm.val.	The entered value is negative or higher than the number of axes (plus pos. number of belts)	Check machine parameter 313
146432 to 146447	raised/extended arm Kinem.: <b>k</b>	Scara-transformation: the arm is completely retracted, resp. extended	Travel into valid range in manual mode
146560 to 146575	wc-zero-pos singular Kinem.: <b>k</b>	Scara-transformation: Singular world point programmed	Change BAPS program
146688 to 146703	too close on stand Kinem.: <b>k</b>	Scara-transformation: Collision danger	Travel into valid range in manual mode
146944	invalid. TOOL value	Only for RTYP = 2, when the master/slave coupling factor is modified via the BAPS command 'Tool'	The slave number coded via 'Tool' is wrong. Check BAPS program.
147072	belt-dir.change prog	The belt value programmed in SPC_FCT 21 (belt_type) does not correspond to the predefined direction	Check BAPS program
147200	wrong belt-kind/-tol	When calling SPC_FCT 21 an inadmissible belt type or an inadmissible belt tolerance has been programmed	Check BAPS program
147328	beltdistance is zero	In belt synchronization without belt parallel travel possibility (belt type 2) the belt coordinate of two successive travel points is identical	Program a belt distance unequal to zero

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
147456	Point is invalid	With SPC_FCT 31, reading of set values from the ring memory, a buffer is accessed which has no valid point yet	In SPC_FCT 30, switch off storing of set values, the parameter NUM_POINTS supplies the number of points stored up to now. Select a corresponding index for SPC_FCT 31
147584	Inadmiss. meas.sys.	In SPC_FCT 29 (=switch on storing of set values) a wrong measuring system number has been programmed	The maximum permissible measuring system number results from MS_NO_max = number of all axes + number of all belts
147712	Inadmiss. Belt-No	A belt with the number defined in SPC_FCT 15, 21, 28, 51, 52, 54 or 55 is not available	Check BAPS program
147840	In WC inadmissible	When calling SPC_FCT 27 (JC_main range) the corresponding kinematic is not in JC	Check BAPS program
147968	Inadmissible Kin.No	Incorrect kinematic parameter in SPC_FCT 3, 27, 29	Check parameters of SPC_FCT in BAPS program
148096 to 148111	Ppo/lol:inadm.fct.no fct. no. <b>P</b>	For SPC_FCT 1 or 2 (PPO-IO-logic) an inadmissible function number has been programmed Permitted are values from 1 to 16	1. Check transfer parameters of SPC_FCT 1 or 2 in BAPS program, see BAPS3 programming instructions
148224 to 148239	Ppo/lol:inadm.kin.no fct. no. <b>P</b>	For SPC_FCT 1 or 2 (PPO-IO-logic) an inadmissible kinematic number has been programmed	2. Compare transfer parameters of SPC_FCT 1 or 2 in BAPS program to machine parameter P1 (number of kinematics), see BAPS3 programming instructions
148352 to 148367	Ppo/lol:inadm.coord. fct. no. <b>P</b>	For SPC_FCT 1 or 2 (PPO-IO-logic) an inadmissible coordinate has been programmed	3. Check transfer parameters of SPC_FCT 1 or 2 in BAPS program, see BAPS3 programming instructions
148480 to 148495	Ppo:inadm.paramvalue fct. no. <b>P</b>	Incorrect parameter value in SPC_FCT 2, permissible values from 0 to 255.	Check BAPS program
149376 to 149391	Ppo/lol:inadm.fct.P2 fct. no. <b>P</b>	Inadmissible function number programmed for SPC_FCT 1 or 2	Check BAPS program
149760	inadm. SPS-proc. Nr	In the BAPS program, the standard subroutine PLC_PROCESS (proc_No), resp. PLC_TIME (task_No) has been called with an inadmissible proc_No (task_No)	Permissible proc_No: 1 to 128, PLC program module Permissible task_No 1 to 8, PLC time module
149888	inadmiss. time value	Incorrect time value programmed in function START_PLC_TIME Valid range: 0.01 to 655.35	Check BAPS program

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
150016	Min is greater Max	Value of the transfer parameter 2 or 3 of the SPC_FCT 52 BELT_PTP_FAC is wrong	Check transfer parameters 2 and 3 of the SPC_FCT 52 BELT_PTP_FAC in the BAPS program
150144	EXC-process start	Error by exception process start. The exception process defined in Special function 47 (EXC_DEFINE) could not be started	Exception handling error: Error addition "EXC-No:" specifies the number (1..32) of the exception, which could not be processed. Possible reasons for example are: – IRD-file of the exception process was not loaded into the rho4 – Typing error in filename (parameter EXC_PR_NAME in Spc_Fct EXC_DEFINE) – etc.
158208 to 158231	CAN-Param. P5 axis <b>a</b>	Invalid value in P5	Check P5
158336 to 158359	CAN-Param. P702 axis <b>a</b>	Invalid value in P702	Check P702 Observe specification of drive amplifier
158464 to 158487	CAN-Param. P703 axis <b>a</b>	Invalid value in P703	Check P703 Observe specification of drive amplifier
158592 to 158615	CAN-Param. P704 axis <b>a</b>	Invalid value in P704	Check P704 Observe specification of drive amplifier
158720 to 158743	CAN-Param. P705 axis <b>a</b>	Invalid value in P705	Check P705 Observe specification of drive amplifier
158848 to 158871	CAN-Param. P706 axis <b>a</b>	Invalid value in P706	Check P706 Observe specification of drive amplifier
158976 to 158999	CAN-Param. P707 axis <b>a</b>	Invalid value in P707	Check P707 Observe specification of drive amplifier
159104 to 159127	CAN-Param. P708 axis <b>a</b>	Invalid value in P708	Check P708 Observe specification of drive amplifier
159232 to 159255	CAN-Param. P709 axis <b>a</b>	Invalid value in P709	Check P709 Observe specification of drive amplifier

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
159360 to 159383	CAN-Param. P710 axis <b>a</b>	Invalid value in P710	Check P710 Observe specification of drive amplifier
159488 to 159511	CAN-Param. P711 axis <b>a</b>	Invalid value in P711	Check P711 Observe specification of drive amplifier
159616 to 159639	CAN-Param. P712 axis <b>a</b>	Invalid value in P712	Check P712 Observe specification of drive amplifier
159744 to 159767	CAN-Param. P713 axis <b>a</b>	Invalid value in P713	Check P713 Observe specification of drive amplifier
159872 to 159895	CAN-Param. P714 axis <b>a</b>	Invalid value in P714	Check P714 Observe specification of drive amplifier
160000 to 160023	CAN-Param. P715 N1 axis <b>a</b>	Invalid value in 1st element of P715	Check P715 Observe specification of drive amplifier
160128 to 160151	CAN-Param. P715 N2 axis <b>a</b>	Invalid value in 2nd element of P715	Check P715 Observe specification of drive amplifier
160256 to 160279	CAN-Param. P715 N3 axis <b>a</b>	Invalid value in 3rd element of P715	Check P715 Observe specification of drive amplifier
160384 to 160407	CAN-Param. P715 N4 axis <b>a</b>	Invalid value in 4th element of P715	Check P715 Observe specification of drive amplifier
160512 to 160535	CAN-Param. P716 N1 axis <b>a</b>	Invalid value in 1st element of P716	Check P716 Observe specification of drive amplifier
160640 to 160663	CAN-Param. P716 N2 axis <b>a</b>	Invalid value in 2nd element of P716	Check P716 Observe specification of drive amplifier
160768 to 160791	CAN-Param. P716 N3 axis <b>a</b>	Invalid value in 3rd element of P716	Check P716 Observe specification of drive amplifier
160896 to 160919	CAN-Param. P716 N4 axis <b>a</b>	Invalid value in 4th element of P716	P716 Check Observe specification of drive amplifier
161024 to 161047	CAN-Param. P717 N1 axis <b>a</b>	Invalid value in 1st element of P717	Check P717 Observe specification of drive amplifier

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
161152 to 161175	CAN-Param. P717 N2 axis <b>a</b>	Invalid value in 2nd element of P717	Check P717 Observe specification of drive amplifier
161280 to 161303	CAN-Param. P717 N3 axis <b>a</b>	Invalid value in 3rd element of P717	Check P717 Observe specification of drive amplifier
161408 to 161431	CAN-Param. P717 N4 axis <b>a</b>	Invalid value in 4th element of P717	Check P717 Observe specification of drive amplifier
161536 to 161559	CAN-Param. P718 N1 axis <b>a</b>	Invalid value in 1st element of P718	Check P718 Observe specification of drive amplifier
161664 to 161687	CAN-Param. P718 N2 axis <b>a</b>	Invalid value in 2nd element of P718	Check P718 Observe specification of drive amplifier
161792 to 161815	CAN-Param. P718 N3 axis <b>a</b>	Invalid value in 3rd element of P718	Check P718 Observe specification of drive amplifier
161920 to 161943	CAN-Param. P718 N4 axis <b>a</b>	Invalid value in 4th element of P718	Check P718 Observe specification of drive amplifier
162048 to 162071	CAN-Param. P719 axis <b>a</b>	Invalid value in P719	Check P719 Observe specification of drive amplifier
162176 to 162199	CAN-Param. P720 axis <b>a</b>	Invalid value in P720	Check P720 Observe specification of drive amplifier
162304 to 162327	CAN-Param. P721 N1 axis <b>a</b>	Invalid value in 1st element of P721	Check P721 Observe specification of drive amplifier
162432 to 162455	CAN-Param. P721 N2 axis <b>a</b>	Invalid value in 2nd element of P721	Check P721 Observe specification of drive amplifier
162560 to 162583	CAN-Param. P721 N3 axis <b>a</b>	Invalid value in 3rd element of P721	Check P721 Observe specification of drive amplifier
162688 to 162711	CAN-Param. P721 N4 axis <b>a</b>	Invalid value in 4th element of P721	Check P721 Observe specification of drive amplifier
162816 to 162839	CAN-Param. P722 axis <b>a</b>	Invalid value in P722	Check P722 Observe specification of drive amplifier



## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
162944 to 162967	CAN-Param. P738 axis <b>a</b>	Invalid value in P738	Check P738 Observe specification of drive amplifier
163072 to 163095	CAN-Param. P739 axis <b>a</b>	Invalid value in P739	Check P739 Observe specification of drive amplifier
163200 to 163223	CAN-Param. P740 axis <b>a</b>	Invalid value in P740	Check P740 Observe specification of drive amplifier
163328 to 163351	CAN-Param. P741 axis <b>a</b>	Invalid value in P741	Check P741 Observe specification of drive amplifier
163456 to 163479	CAN-Param. P742 axis <b>a</b>	Invalid value in P742	Check P742 Observe specification of drive amplifier
163584 to 163607	CAN-Param. P743 axis <b>a</b>	Invalid value in P743	Check P743 Observe specification of drive amplifier
163712 to 163735	CAN-Param. P744 axis <b>a</b>	Invalid value in P744	Check P744 Observe specification of drive amplifier
163840 to 163863	CAN-Param. P723 axis <b>a</b>	Invalid value in P723	Check P723 Observe specification of drive amplifier
163968 to 163991	CAN-Param. P724 N1 axis <b>a</b>	Invalid value in 1st element of P724	Check P724 Observe specification of drive amplifier
164096 to 164119	CAN-Param. P724 N2 axis <b>a</b>	Invalid value in 2nd element of P724	Check P724 Observe specification of drive amplifier
164224 to 164247	CAN-Param. P724 N3 axis <b>a</b>	Invalid value in 3rd element of P724	Check P724 Observe specification of drive amplifier
164352 to 164375	CAN-Param. P724 N4 axis <b>a</b>	Invalid value in 4th element of P724	Check P724 Observe specification of drive amplifier
164480 to 164503	CAN-Param. P725 axis <b>a</b>	Invalid value in P725	Check P725 Observe specification of drive amplifier
164608 to 164631	CAN-Param. P726 axis <b>a</b>	Invalid value in P726	Check P726 Observe specification of drive amplifier

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
164736 to 164759	CAN-Param. P727 axis <b>a</b>	Invalid value in P727	Check P727 Observe specification of drive amplifier
164864 to 164887	CAN-Param. P728 axis <b>a</b>	Invalid value in P728	Check P728 Observe specification of drive amplifier
164992 to 165015	CAN-Param. P729 axis <b>a</b>	Invalid value in P729	Check P729 Observe specification of drive amplifier
165120 to 165143	CAN-Param. P730 axis <b>a</b>	Invalid value in P730	Check P730 Observe specification of drive amplifier
165248 to 165271	CAN-Param. P731 axis <b>a</b>	Invalid value in P731	Check P731 Observe specification of drive amplifier
165376 to 165399	CAN-Param. P732 axis <b>a</b>	Invalid value in P732	Check P732 Observe specification of drive amplifier
165504 to 165527	CAN-Param. P733 N1 axis <b>a</b>	Invalid value in 1st element of P733	Check P733 Observe specification of drive amplifier
165632 to 165655	CAN-Param. P733 N2 axis <b>a</b>	Invalid value in 2nd element of P733	Check P733 Observe specification of drive amplifier
165760 to 165783	CAN-Param. P734 axis <b>a</b>	Invalid value in P734	Check P734 Observe specification of drive amplifier
165888 to 165911	CAN-Param. P735 axis <b>a</b>	Invalid value in P735	Check P735 Observe specification of drive amplifier
166016 to 166039	CAN-Param. P745 axis <b>a</b>	Invalid value in P745	Check P745 Observe specification of drive amplifier
166144 to 166167	CAN-Param. P736 axis <b>a</b>	Invalid value in P736	Check P736 Observe specification of drive amplifier
166272 to 166295	CAN-Param. P737 axis <b>a</b>	Invalid value in P737	Check P737 Observe specification of drive amplifier
166400 to 166439	no inp–transm. CAN1 inp. –bl. <b>x</b>	No data have been received by the CAN input module for at least one P2 clock	Error in CAN bus connection, check plugs and cables, input module defective

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
166528 to 166567	no inp–transm. CAN2 inp. –bl. <b>x</b>	No data have been received by the CAN input module for at least one P2 clock	Trouble in CAN bus connection, check plugs and cables, input module defective
166656 to 166695	no inp–transm. CAN3 inp. –bl. <b>x</b>	No data have been received by the CAN input module for at least one P2 clock	Trouble in CAN bus connection, check plugs and cables, input module defective
166784 to 166823	no inp–transm. CAN4 inp. –bl. <b>x</b>	No data have been received by the CAN input module for at least one P2 clock	Trouble in CAN bus connection, check plugs and cables, input module defective
166912 to 166951	no outp–transm. CAN1 outp.–bl.: <b>y</b>	No output transmission of the CAN1 module	Trouble in CAN bus connection, check plugs and cables, output module defective
167040 to 167079	no outp–transm. CAN2 outp.–bl.: <b>y</b>	No output transmission of the CAN2 module	Trouble in CAN bus connection, check plugs and cables, output module defective
167168 to 167207	no outp–transm. CAN3 outp.–bl.: <b>y</b>	No output transmission of the CAN3 module	Trouble in CAN bus connection, check plugs and cables, output module defective
167296 to 167335	no outp–transm. CAN4 outp.–bl.: <b>y</b>	No output transmission of the CAN4 module	Trouble in CAN bus connection, check plugs and cables, output module defective
168960 to 168983	Sercos–Alarm axis <b>a</b>	Drive amplifier has detected an error	Notice error code at the drive amplifier display
169088	Sercos-Loop open	The SERCOS-loop is nor connected	Check SERCOS connections
169472 to 169495	Sercos–Error Phase1 axis <b>a</b>	The indicated axis was not identified	Check axis address (rho4 and drive amplifier) Check baudrate
169600	Sercos-error Phase2 axis <b>a Y- zzz</b>	The indicated drive parameter cannot be transferred due to an error	a = Axis number Y = SERCOS parameter type zzz = SERCOS ident number Check parameters (Observe limit values)
169600	Sercos-error Phase2 axis <b>a S- 127</b>	Commutation into phase 3 not possible. Possible causes: – invalid parameter – double assignment of axis addresses	The list of the invalid parameter in phase 2 (S-0-0021) is additionally displayed on the PHG. If no invalid parameter are displayed, check if axis addresses at the Sercos-Ring are double assigned

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
169728	Sercos-error Phase3 axis <b>a Y-</b> zzz	The indicated drive parameter cannot be transferred due to an error	a = Axis number Y = SERCOS parameter type zzz = SERCOS ident number Check parameters (Observe limit values)
169728	Sercos-error Phase3 axis <b>a S-</b> 128	Commutation into phase 4 not possible	The list of the invalid parameter in phase 3 (S-0-0022) is additionally displayed on the PHG
169856	Sercos-error Phase4 axis <b>a Y-</b> zzz	The indicated drive parameter cannot be transferred due to an error	a = Achs-Number Y = SERCOS-Parameter type zzz = SERCOS-Ident-Number Check parameters (Observe limit values)
169984	Sercos-Init-error	SERCOS-ASIC cannot be initialized	Check SERCOS hardware
170112	Sercos-BAUDR.-Error	The baud rate set in P38 is not allowed	Baudrates higher than 2 MBauds are at present only possible with rho4.0. Set allowed baud rates
170240	Sercos-DP-Overflow	Capacity of the SERCOS axis is not sufficient for the set axis / telegram configuration	Reduce number of axes or /and number of the axis telegrams (S-0-0016)
230016 to 230039	<IN POSITION>-Error axis <b>a</b>	Axis does not reach the Inpos range after termination of a travel block within the preset time. Error message is activated via machine parameters P126/P127	Check machine parameters P126/P127
232320	Par.err. on prog.sel	The parity determined in the control at the data channel does not correspond with the parity bit and the parity set via machine parameter	Check PLC program und machine parameter
232448	EXPROG.DAT not avail	EXPROG.DAT not available	Load file via Online or create it with the editor at PHG
232576	max. open EXPROG.DAT	File has been opened too often by repeated read access, e.g. from user processes	Check programs
232832	Error in EXPROG.DAT	EXPROG.DAT contains inadmissible characters or the preset format has not been observed	Check EXPROG.DAT
232960	Progr. not available	A program has been selected which is not in the user memory	Check existing programs by listing. Check notation in EXPROG.DAT and correct if necessary, resp. reload file

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
267904	Ref. not possible	Drive cannot be switched in reference mode	Inform customer service, see instruction at the beginning of this chapter
268032 to 268055	meas.sys.feedb.error axis <b>a</b>	Not enough pulses between two marker signals are reported with incremental transmitters. A different number of pulses is transferred in case of double transfer with absolute transmitters. This can be caused by a wrong setting of machine parameter P401 (marker distance). It could also be possible that pulses are lost (e.g. by troubles, pollution of the transmitter)	Check machine parameter P401 and transmitter
268288 to 268311	Ref. point error axis <b>a</b>	Drive-lead referencing has been interrupted due to an error of the drive	Read error code at the seven segment display of the drive amplifier
268416 to 268439	Separate referenc.! axis <b>a</b>	In the automatic operation the attempt was made to start drive controlled referencing for more than 8 SERCOS axes at the same time	Reduce the quantity of axes for drive controlled referencing at the same time to $\leq 8$
268672 to 268695	Interpolator Stop axis <b>a</b>	Axis cannot follow the position set value default of the control Lag > 1,13 x nominal lag. Error message is only issued if time monitoring for interpolator stop is active, P125. With Servodyn-G: The speed default of the control has exceeded the limit value of the drive amplifier.	Error occurs e.g. if axis runs against a fix stop. With Servodyn-G: Check speed limit values of drive amplifier. Check Manual/Automatic switchover of drive amplifier.
269056 to 269079	meas.sys.marker err. axis <b>a</b>	Too many pulses between two marker signals are reported with incremental transmitters. Wrong setting of machine parameter P401, marker distance. Marker pulses can be lost (e.g. by troubles, pollution of the transmitter)	Check P401 and transmitters
269184 to 269207	Mess.Syst. alarm axis <b>a</b>	Parting of a cable at incremental encoder	Check hardware (encoder, cable)
272128	K.Verf.in RK o Refpt	Travel in LINEAR or CIRCULAR without approaching the reference points	Reference axes

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
277376 to 277391	manual axes stripped Kinem.: <b>k</b>	Robot type 26: stripping of manual axes  The total of the manual axes has exceeded the maximum value defined in P308.6	Turn back manual axes in PTP Jog mode
277504 to 277519	travel-limit VTRAN Kinem.: <b>k</b>	Robot type 26: travel limit in forward transformation  Singularity in forward transformation	Travel back manual axes in PTP Jog mode
277632 to 277647	travel-limit joint 1 Kinem.: <b>k</b>	Robot type 26: travel limit of joint angle 1  Singularity in backward transformation	Travel back axes in Jog mode
277760 to 277775	carpal within joi. 2 Kinem.: <b>k</b>	Robot type 26: carpal point is within joint 2  Singularity in backward transformation	Travel back axes in Jog mode
277888 to 277903	outstretched joi. 1,2 Kinem.: <b>k</b>	Robot type 26: axes 2, 3 in extended position  Travel limit of kinematic	Travel back axes in Jog mode
278016 to 278031	Iteration divergent Kinem.: <b>k</b>	Robot type 26: iteration procedure divergent  The iteration procedure of the backward transformation is divergent as a singular position has been reached	Travel back axes in Jog mode
278144 to 278159	cosin(j5) singular Kinem.: <b>k</b>	Robot type 26: cosine (G5) is singular.  Singularity of the backward transformation	Travel back axes in PTP Jog mode
278656 to 278679	DRIVE ON not allowed axis <b>a</b>	It has been tried to switch in a drive On signal for a moving kinematic	See description of axes which can be switched off
278912 to 278935	DRIVE ON not avail. axis <b>a</b>	Drive On signal for the corresponding axis, or drive On all axes is not set. This error also occurs if an axis is to be travelled for which drive On had been switched off and no 'read POS' has been performed yet	See description of axes which can be switched off
279168	work area exceeded	The values defined in the BAPS program by LIMIT_MIN, resp. LIMIT_MAX have been exceeded	Check BAPS program
281216	DB length undeclared	The data module length has not been initialized in the BAPS program for WRITE resp. READ PLC	Adapt BAPS program

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
281600	BUEP data error PCL	Data transfer error in reading from the PCL	Check data module in PLC program
282112	DB length error	Length for WRITE PLC too long	Check record variable for WRITE PLC in BAPS program
282240	DB of PCL not ok	Data module for READ PLC has not been declared or the wrong length has been declared	Check data module which has been programmed in the BAPS program for READ PLC
282368	PCL in Stop	PCL has been switched to Stop or does not run because no PLC program is available	Switch PCL to Run, resp. load PLC program
283520	DB number undeclared	Data module number has not been initialized in the BAPS program for WRITE resp. READ PLC	Adapt BAPS program
283648	BUEP I/O error PCL	Error in PCL signal exchange to rho4	Check PLC program; restart if necessary
284032	PCLrho4.0 in Stop	rho4.0: PCL has been switched to Stop or does not run because no PLC program is available	rho4.0: Switch PCL to Run, resp. load PLC program
284160	PCL watchdog	The time between two IO-images to PCL is >250 ms + clock time (machine parameter P5)	Check PCL clock time Check Parameter P21
284544	System error 284544 EEPROM defect	Machine parameter EEPROM defective	Inform after-sales service, see notice at beginning of this chapter
285952	protocol error	Program error in Write / Read	Check WRITE/READ function of program
287360	inadmis.,no r.points	Reference points have not been approached	Reference points must be approached first
287488	inadmis.in autom.op.	In test mode a kinematic is to be moved per program which is in Automatic	Switch to Manual. Occurs only in case of an active option 'Auto/Manual per kinematic'
287616	inadmis.in manual op	The corresponding kinematic is in Manual	Switch to Automatic
288768	interface error	Is displayed in case of different errors in connection with device-I/O, i.e. interface not available, interface occupied, timeout, parity error or framing error	Check interfaces, interface parameter/protocol or cables
293632	inad.real outp.value	Value is not in valid range	Check real output in program
303616	control not ready	The RCI signal 'Emergency operation' is pending or external program selection with pending Emergency stop	Check PLC program

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
388224	CANopen Emergency Message <i>nn00dddd</i>	A CANopen device has signalled an internal error	<i>Nn</i> = node-ID (decimal) <i>00</i> = separation sign <i>dddd</i> = error code as decimal number  The decimal number is to be converted into hexadecimal. Then the error cause can be determined with the help of the table in chapter 4, CANopen error codes
396800	serialnb. n.readable	At the attempt to read the serial number in the SRCAN module (e.g. at the startup) an error occurred	SRCAN module not connected or wrong machine parameter
396928	inval.srcan-ma-para.	At the attempt to download machine parameter from the SRCAN module it was detected, that no valid Mp are available in the SRCAN module	SRCAN module was e.g. replaced Inform after-sales service, see notice at beginning of this chapter
397440	serialnb.n.writeable	At the attempt to write the serial number into the SRCAN module an error occurred	SRCAN module not connected or wrong machine parameter
443008	NS-OBJ-Code too long	reserved	
444032	FEPROG progr. error	reserved	
460800	rFkt:Len corrupt	Protocol error TCP/IP Incorrect function header of rho function	Check rho4fkt.dll version
461056	rFkt:malloc error	System memory too small	Inform after-sales service, see notice at beginning of this chapter
461312	rFkt:Channel ill.	Invalid TCP/IP channel	Inform after-sales service, see notice at beginning of this chapter
461440	rFkt:Read error	Error in opening TCP/IP channel for read	Inform after-sales service, see notice at beginning of this chapter
461568	rFkt:write error	Error in opening TCP/IP channel for write	Inform after-sales service, see notice at beginning of this chapter
461696	rFkt:Connect error	TCP/IP system channel to Windows could not be opened	Check of the application Win-rho4.exe
467200	virt.interface write	It is not possible to write on the virtual interface	Inform after-sales service, see notice at beginning of this chapter
467328	virt PHG write	It is not possible to write on the virtual PHG	Inform after-sales service, see notice at beginning of this chapter
467456	socket error softplc	Socket cannot be generated	Inform after-sales service, see notice at beginning of this chapter



## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
467584	unkno.server softplc	Incorrect port number or TCP/IP address	Check port number or TCP/IP address
467712	no connect softplc	PCL is not running	Inform after-sales service, see notice at beginning of this chapter
467840	socket error	Socket cannot be created	Inform after-sales service, see notice at beginning of this chapter
467968	bind error	An address cannot be assigned to socket	Inform after-sales service, see notice at beginning of this chapter
468096	listen error	The socket is not valid; it cannot wait for Client	Inform after-sales service, see notice at beginning of this chapter
468224	accept error	The Client is not accepted	Inform after-sales service, see notice at beginning of this chapter
468352	task spawn ser. read	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
468480	task spawn ser.write	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
468608	task spawn rhofunc.	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
468736	task spawn virt. phg	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
468864	task spawn virt. io	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
468992	task spawn init	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
469376	no connect. possible	No server present Wrong port number	Check if a server is present or check port number
469504	task spawn webserver	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
469632	task spawn sys-chann	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
469760	task spawn nrhofunc.	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
469888	task spawn eweb real	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
470016	task spawn eweb comm	Error in creating a system task	Inform after-sales service, see notice at beginning of this chapter
470144	no connect eweb phg	No eWebPhg connected or communication error	Inform after-sales service, see notice at beginning of this chapter
470272	UDP read error	No eWebPhg connected or communication error	Inform after-sales service, see notice at beginning of this chapter
470400	web serv. read error	Communication error	Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
470528	web serv.write error	Communication error	Inform after-sales service, see notice at beginning of this chapter
481024	Open MP-Dump failed	Error in run-down of rho4 Failure in opening machine parameter dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
481152	Write MP-Dump failed	Error in run-down of rho4 Failure in writing machine parameter dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
481280	Close MP-Dump failed	Error in run-down of rho4 Failure in closing machine parameter dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
481408	Open MP-Dump failed	Error in run-up of rho4 Failure in opening machine parameter dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
481536	Read MP-Dump failed	Error in run-up of rho4 Failure in reading machine parameter dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
481664	Close MP-Dump failed	Error in run-up of rho4 Failure in closing machine parameter dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
481792	Aw Memory Error 0	Error in run-down of rho4 Failure in opening file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
481920	Aw Memory Error W	Error in run-down of rho4 Failure in writing file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
482048	Aw Memory Error C	Error in run-down of rho4 Failure in closing file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
482176	Aw Memory Error O	Error in run-up of rho4 Failure in opening file system dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
482304	Aw Memory Error R	Error in run-up of rho4 Failure in reading file system dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
482432	Aw Memory Error C	Error in run-up of rho4 Failure in closing file system dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
482560	Aw Memory Error O	Error in run-down of rho4 Failure in opening file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
482688	Aw Memory Error W	Error in run-down of rho4 Failure in writing file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
482816	Aw Memory Error C	Error in run-down of rho4 Failure in closing file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
482944	Aw Memory Error O	Error in run-up of rho4. Failure in opening file system dump file	Winrho4 does not run Bad file File not available TCP/IP connection error
483072	Aw Memory Error R	Error in run-up of rho4 Failure in reading file system dump file	Winrho4 does not run Bad file File not available TCP/IP connection error

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
483200	Aw Memory Error C	Error in run-down of rho4 Failure in closing file system dump file	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP connection error
483328	Delete MPDUMP failed	Error in deleting machine parameter file. Occurs in case of EEPROM backup	Winrho4 does not run File with write protection File not available TCP/IP connection error
483456	Aw Memory Error D	Occurs in case of EEPROM backup	Winrho4 does not run File with write protection File not available TCP/IP connection error
483840	Open XMP-Dump fail.	Error when shutting down the rho4 Opening of extended machine parameters-Dump-file failed	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP-connection error
483968	Write XMP-Dump fail.	Error when shutting down the rho4 Writing of extended machine parameters-Dump-file failed	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP-connection error
484096	Close XMP-Dump fail.	Error when shutting down the rho4 Closing of extended machine parameters-Dump-file failed	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP-connection error
484224	Open XMP-Dump fail.	Error when starting the rho4 Opening of extended machine parameters-Dump-file failed	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP-connection error
484352	Read XMP-Dump fail.	Reading when starting the rho4 Reading of extended machine parameters-Dump-file failed	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP-connection error

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
484480	Close XMP-Dump fail.	Reading when starting the rho4 Closing of extended machine parameters-Dump-file failed	Winrho4 does not run File with write protection Bad file Hard disk is full TCP/IP-connection error
484608	Delet XMP-Dump fail.	Error when deleting the extended machine parameters-Dump-file Occurs during EEPROM backup	Winrho4 does not run File with write protection TCP/IP-connection error
484736	Shutdown error ident.	The last shutdown was incorrect USV not active Battery empty etc.	User memory and/or machine parameters are maybe not saved The interface Bit SHUT-DOWN_RCA is set
484864	n.contact to Winrho4	The monitoring of the Winrho4 has responded Connection rho4 >-> Winrho4 interrupted	A correct shutdown is no longer possible User data must be manually saved (via ROPS4) The interface Bit WINRHO4_RCA is set
485120	UPS not started	When starting Windows, the UPS has not been started	The control must be manually shut down via Winrho4, PHG or SPS
485248	USV Shutdown!	UPS signals shutdown during the startup	Operation no longer possible
485632	after Short Circuit	The last shutdown of the rho4.0 takes place by a short circuit	Remanent data of the rho4.0 and possible modified machine parameter by library functions could not be saved to the battery buffered RAM
485760	after overheated	The last shutdown of the rho4.0 takes place abruptly by exceeding the second temperature critical value. The temperature advance warning was not sufficient for a controlled shutdown	Remanent data of the rho4.0 and possible modified machine parameter by library functions could not be saved to the battery buffered RAM
485888	err.during Powerdown	At the last shutdown of the rho4.0 the powerdown handling routine was not completely executed	Remanent data of the rho4.0 and possible modified machine parameter by library functions could not be saved to the battery buffered RAM. With a rho4.0LR, please check whether the connection cable to the additional condensators is connected
486400	System error 486400 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
486528	System error 486528 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
486656	System error 486656 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
486784	System error 486784 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
486912	System error 486912 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
487040	System error 487040 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
487168	System error 487168 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
487296	System error 487296 File not open	File administration error: Access to a closed file	Inform after-sales service, see notice at beginning of this chapter
487424	System error 487424 Error in Filesystem	File administration error: Error in file compressing	Inform after-sales service, see notice at beginning of this chapter
487552	System error 487552 Error in Filesystem	File administration error: Error in searching a file	Inform after-sales service, see notice at beginning of this chapter
487680	System error 487680 Error in Filesystem	File administration error: File has an invalid attribute	Inform after-sales service, see notice at beginning of this chapter
487808	System error 487808 Error in Filesystem	File administration error: The file management has an invalid data block	Inform after-sales service, see notice at beginning of this chapter
487936	System error 487936 Error in Filesystem	File administration error: Error in searching a file	Inform after-sales service, see notice at beginning of this chapter
488064	System error 488064 Error in Filesystem	File administration error: Error in opening a file	Inform after-sales service, see notice at beginning of this chapter
488192	System error 488192 Error in Filesystem	File administration error: Error in searching a file	Inform after-sales service, see notice at beginning of this chapter
488320	System error 488320 Error in Filesystem	File administration error: Error in reading a file	Inform after-sales service, see notice at beginning of this chapter
488448	System error 488448 Error in Filesystem	File administration error: Error in opening a file	Inform after-sales service, see notice at beginning of this chapter
495360	File end reached	Read over the file end	File smaller than expected
495488	File is open	Warning: this file is already opened for writing	You read from a file that is described by another process
495616	No compress needed	It is not required to compress this file	File is already compressed
495744	File not found	The desired file is not existing	Evt. file name wrong

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
495872	Memory full	The user memory is full	Delete unnecessary files
496000	Too many open files	The file was too often opened	A file can be opened 128 times for reading
496128	File still open	The file is still open	The desired file access is only possible with closed files
496256	File is open	The file is already opened for writing	A file can only be opened once for writing
496384	File exists already	Rename, there is already a file with this name	Choose another name
496512	No more block	No more reserved block free	Inform after-sales service
496640	No entry found	This file is not existing	Check file name
496768	Error MP-Name	Error when opening the machine parameter	Inform after-sales service
496896	Error MP-Open	Error when opening the machine parameters	Inform after-sales service
497024	Error MP-Close	Error when closing the machine parameters	Inform after-sales service
498304	Load MP Not-Aus	Loading the machine parameters is only possible with EMERGENCY STOP	Switch EMERGENCY STOP
498432	MP not open	Error when reading the machine parameters	Inform after-sales service
498560	Error: MP-Name	Error when opening the machine parameters	Inform after-sales service
498688	MP not open	Error when reading the machine parameters	Inform after-sales service
499200	MP still open	The machine parameters are already opened	The machine parameters can only be opened once
499328	MP wrong version	The version of the machine parameters is wrong	The machine parameters belong to a previous control version
499456	F-Steuer list	Error when listing the files	Inform after-sales service
499584	Range fault	Error when reading/writing the point file	Inform after-sales service
499712	file is protected	Read access to this file is not possible	Check file attributes
499840	file is protected	Read access to this file is not possible	Check file attributes
499968	file is protected	Write access to this file is not possible	Check file attributes
500096	file is protected	Write access to this file is not possible	Check file attributes

## rho4 status messages

Code No.	PHG text display	Possible cause	Remark
500224	file is protected	Write access to this file is not possible	Check file attributes
500352	file is protected	Write access to this file is not possible	Check file attributes
500480	file is protected	Write access to this file is not possible	Check file attributes
500608	file is protected	Read access to this file is not possible	Check file attributes
500736	file is protected	Write access to this file is not possible	Check file attributes
500864	file is protected	Read access to this file is not possible	Check file attributes
500992	file is protected	Read access to this file is not possible	Check file attributes
501120	file is protected	Read access to this file is not possible	Check file attributes
501248	file is protected	General access violation	Inform after-sales service
502272	file is protected	General access violation	Inform after-sales service
502400	file is protected	General access violation	Inform after-sales service
502528	file is protected	General access violation	Inform after-sales service
502656	file is protected	General access violation	Inform after-sales service
505600	Fds: Heap-overflow	Only for rho40: For the operation of the floppy drive there is not enough memory available	Close active application
505728	Fds: k.drive access	Only for rho40: No drive access to the floppy	Floppy drive not connected No or wrong disk in drive
505856	Fds: wrong file name	Only for rho40: Wrong file name when coping to/ from disk	Check: drive name '/fd0/' File name in format 8.3 No directory structure
505984	Fds: too many files	Only for rho40: max. number of files on the disk exceeded	In the root directory, max. 224 files are allowed
506112	Fds: disk full	Only for rho40: disk is full	The file to be copied does not fit any longer on the disk, max. number of root dir entries (224) is reached
506240	Fds: File too large	Only for rho40: File to be copied too large	The file to be copied does not fit any longer on the disk; the free area is too small



## Warnings

**3 Warnings**

Error No.	PHG display	Possible cause	Remark
14720 to 14743	interpolator stop axis <b>a</b>	Lag is bigger than interpolator stop range, 113 % of the nominal lag	The programmed speed is too high Error in drive amplifier
23424 to 23447	reduction axes-vel. axis <b>a</b>	Reduction of the axis speed in linear mode The resulting axis speed is too high in linear resp. circular interpolation in relation to machine parameters P103, P114	Change path default
141824	Value of beltcounter	The belt counter has not yet been reset or is out of the range defined in machine parameter P505	Reset belt counter, positive edge, or increase range if necessary, or switch off monitoring with min=0, max=0
148608 to 148623	lol-on :rate-t too l fct. No.. <b>p</b>	Special function 1 (switch On): A too long time offset has been programmed	Check BAPS program
148736 to 148751	lol-off:rate-t too l fct. No.. <b>p</b>	Special function 1 (switch Off): A too long time offset has been programmed	Check BAPS program
148864 to 148879	lpo :rate-t too l fct. No.. <b>p</b>	Special function 2: A too long time offset has been programmed	Check BAPS program
148992 to 149007	lol-on:fct. in use fct. No.. <b>p</b>	Special function 1 (switch On): The programmed IOL function number (first parameter) is still occupied (active)	Check BAPS program
149120 to 149135	lol-off:fct. in use fct. No.. <b>p</b>	Special function 1 (switch Off): The programmed IOL function number (first parameter) is still occupied (active)	Check BAPS program
149248 to 149263	Ppo :fct. in use fct. No.. <b>p</b>	Special function 2: The programmed PPO function number (first parameter) is still occupied (active)	Check BAPS program
149632 to 149647	Ppo: V bigger Vmax fct. No.. <b>p</b>	PPO analog output: Voltage to be put out is bigger than $V_{max}$	Check BAPS program
233984	remote-movement act.	During initialization of Referencing resp. Jog a rhoMove library function is still active	Terminate rhoMove function

## Warnings

Error No.	PHG display	Possible cause	Remark
268416 to 268439	separate referenc.! axis <b>a</b>	a) Lifting/rotating spindle: With lifting/rotating spindle, axes 3,4 must be referenced separately It has been tried in Manual (Mode =1) to reference axes 3,4 together (only for transformation with raising/head spindle) b) Drive controlled referencing: In the manual operation the attempt was made to start drive controlled referencing for more than 8 SERCOS axes at the same time	If e.g. referencing of the 4th axis is started and then referencing of the 3rd axis before the movement of the 4th axis has been completed, the selection of the 3rd axis is ignored. The same applies to execution in reverse order (first 3, then 4)  Reduce the quantity of axes for drive controlled referencing at the same time to $\leq 8$
274176	Memory–Battery low	rho4.0 only: Battery for system clock and user memory is low	Replace battery
278528 to 278551	Axis disable axis <b>a</b>	Axis has been deactivated via input signal 'axis disable'	The corresponding axis must not be moved via PHG (manual mode) or per program, see description of axes which can be switched off
288640	Max. velocity	A too high orientation change in predefined travel movement during LINEAR or CIRCULAR interpolation	Increase the section of the total travel distance for the main axes, see also machine parameter P303
397568	no serialnumb. check	Serialnumber–check disabled by special entry in P314 (electr. type plate)	Check machine parameter P314
398848	No MpFilter	When reading the machine parameters from the SR CAN module, it has been noticed that there is no filter file in the control	Create filter file and load into the control
460928	rFkt:Client discon.	TCP/IP channel of the rho4Fkt has been closed	Check the Client-Server connection
461184	rFkt:Client discon.2	TCP/IP channel of the rho4Fkt has been closed	Check the Client-Server connection
469120	connect. lost tcpip	A connection has been closed, e.g. read/write V24_x.	If this channel is to be accessed again, the connection must be restored before
469248	ser write not poss.	It is not possible to write or read on a serial channel	Read/write V24_x is to be closed because an error has occurred

CANopen error codes

## 4 CANopen error codes

### 4.1 Emergency error codes

Error Code (hex)	Signification
00xx	Error Reset or No Error
10xx	Generic Error
20xx	Current
21xx	Current, device input side
22xx	Current inside the device
23xx	Current, device output side
30xx	Voltage
31xx	Mains Voltage
32xx	Voltage inside the device
33xx	Output Voltage
40xx	Temperature
41xx	Ambient Temperature
42xx	Device Temperature
50xx	Device Hardware
60xx	Device Software
61xx	Internal Software
62xx	User Software
63xx	Data Set
70xx	Additional Modules
80xx	Monitoring
81xx	Communication
8110	CAN Overrun (Objects lost)
8120	CAN in Error Passive Mode
8130	Life Guard Error or Heartbeat Error
8140	recovered from bus off
8150	Transmit COB-ID
82xx	Protocol Error
8210	PDO not processed due to length error
8220	PDO length exceeded
90xx	External Error
F0xx	Additional Functions
FFxx	Device specific

xx = possible additional information of the device manufacturer

CANopen error codes

Notes:

Appendix

# A Appendix

## A.1 Abbreviations

<b>Abbreviation</b>	<b>Meaning</b>
BAPS3	Programming language; Bewegungs- und Ablaufprogrammiersprache, Version 3; programming language
C:	Hard disk drive
CAN	Controler Area Network
DAC	Digital-analog converter
EEPROM	Electronically erasable programmable read-only memory
EGB	Elektrostatic sensitive components
ESD	Electrostatic discharge
LF	Line feed
MPP	Machine parameter program
MSD	Machine state display
PCL	Memory-programmable control
PE	Protective earth
PHG	Hand-held programming unit
POS	Actual position
PTP	Point to point
RC	Robot control
ROD	Incremental encoder
RPM	Rounds per minute
ROPS4	Robot programming system for rho4
TCP	Tool center point
WC	World coordinates

Appendix

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Bosch Rexroth AG  
Electric Drives and Controls  
P.O. Box 13 57  
97803 Lohr, Germany  
Bgm.-Dr.-Nebel-Str. 2  
97816 Lohr, Germany  
Phone +49 93 52-40-50 60  
Fax +49 93 52-40-49 41  
service.svc@boschrexroth.de  
www.boschrexroth.com

