

Rexroth Rho 4 Status Messages And Warnings

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Software Manual



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Status messages and warnings

Type of Documentation Software manual

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Purpose of Documentation The present manual informs about:

- the status messages and warnings of the rho4

Record of Revisions

| Description | Release Date | Notes |
|----------------------------------|--------------|-----------------|
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| DOK-RHO*4*-STATUS*MEL*-PR07-EN-P | 01.2005 | Valid from VO08 |
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Overview of all manuals

Overview of all manuals

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Safety Instructions

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 IEC 60947-1 (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 |
| Rho 4.1/IPC 40.2 Connectivity Manual | R911308219 | R911308220 |
| 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>,
- 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

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MOBY® is a registered trademark of Siemens AG.

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

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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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|---|--|---|
| 5120 | System error 5120 bad interpol. tpye | Inadmissible interpolation type in block preparation | Inform after-sales service, see notice at beginning of this chapter |
| 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 ME-MAVAIL | 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|--|---|--|
| 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 |
| 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:NoCoproprocessor | 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------------------|--|--|--|
| 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 |
| 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 a | 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 a | 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 a | 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.: k | 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------------------|---|---|---|
| 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 |
| 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 a | 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 a | 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 | 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 | 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.: k | Kinematic is in singular position | Move kinematic into valid range in Manual. Check programmed points and belt position |
| 21888 to 21903 | workroom limit Kinem.: k | Kinematic is in singular position | Move kinematic into valid range in Manual. Check programmed points |
| 22144 to 22167 | travel range limit axis a | 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.: k | 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 a | 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.: k | Programmed point and interpolation direction do not agree | Check belt position |
| 22656 to 22671 | ambiguity Kinem.: k | Programmed point and interpolation direction do not correspond | Check BAPS program |
| 22784 to 22799 | AUTO/MANUAL switch Kinem.: k | 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 a | Error in supply module of the drive | See manual Servodyn-D |
| 23040 to 23055 | BS-tol.with 1.Synch. Kinem.: k | 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.: k | 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 a | 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 a | 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 a | The actual value telegram cannot be sent by the drive (only for Servodyn-GC) | Drive amplifier defective |
| 23936 to 23959 | CAN Limit– switch axis a | 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 a | The dynamic lag monitoring of the drive has responded | Possibly too high acceleration or too high speed |
| 24192 to 24215 | CAN VM-error Axis a | Error in supply module of the drive | See manual Servodyn-D |
| 24320 to 24343 | CAN Logic Power axis a | Wrong logic voltage for drive module | Check power supply of drive |
| 24448 to 24471 | CAN Overvoltage axis a | Admissible intermediate circuit voltage in drive amplifier has been exceeded or not reached | Check intermediate circuit voltage |
| 24576 to 24599 | CAN Controller–temp axis a | Over-temperature in drive amplifier | Check motor/amplifier layout |
| 24704 to 24727 | CAN Motor–temp axis a | The maximum permissible temperature of the motor has been exceeded | Check motor/amplifier layout |
| 24832 to 24855 | CAN meas. Sys. fault axis a | Measuring system (abs. transmitter, resolver) defective Measuring system cables defective | Check transmitter Check measuring system cables |
| 24960 to 24983 | CAN Parameterfault axis a | 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 a | A short-circuit has possibly occurred Motor current has exceeded the limit value | Motor defective |
| 25344 to 25367 | CAN Communic. fault axis a | 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 a | 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 a | 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(axes) |
| 76800 to 76823 | CAN-Param. No SYNC axis a | 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 a | Error in EEPROM programming occurred | EEPROM on amplifier assembly defective |
| 77056 to 77079 | CAN-Param. P602 axis a | MPP amplifier type does not correspond to existing amplifier | Check P602, check amplifier type |
| 77184 to 77207 | CAN-Param. P603 axis a | Inadmissible motor type | Check P603, check motor type, type plate |
| 77312 to 77335 | CAN-Param. P5 axis a | Inadmissible P2 action time | Check P5, permitted values for CAN-coupling: 6 to 32 ms |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------------------|--------------------------------------|---|---|
| 77440 to 77463 | CAN-Param. P604 axis a | P-portion of the speed controller not in permissible range | Check P604, observe specification of drive amplifier |
| 77568 to 77591 | CAN-Param. P605 axis a | Portion of the speed controller not in permissible range | Check P605, observe specification of drive amplifier |
| 77696 to 77719 | CAN-Param. P606 axis a | 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 a | Limit switch position not in permis- sible range | Check P204, P205, P206, P207, P208. The zero crossing of the re- solver 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 a | Limit switch position not in permis- sible range | Check P204, P205, P206, P207, P208. The zero crossing of the re- solver 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 a | Torque limit value of motor in oper- ating mode AUTO not in permis- sible range | Check P607, observe specification of drive amplifier |
| 78208 to 78231 | CAN-Param. P607.2 axis a | Torque limit value of motor in oper- ating mode MANUAL not in permis- sible range | Check P607, observe specification of drive amplifier |
| 78336 to 78359 | CAN-Param. P103 axis a | Speed limit value in automatic mode not in permissible range | Check P23, P103, observe specifi- cation of drive amplifier |
| 78464 to 78487 | CAN-Param. P114 axis a | Speed limit value in manual mode not in permissible range | Check P23, P114, observe specifi- cation of drive amplifier |
| 78592 to 78615 | CAN-Param. P607.3 axis a | Torque limit value of motor in oper- ating mode Emergency stop not in permissible range | Check P607, observe specification of drive amplifier |
| 78720 to 78743 | CAN-Param. P608 axis a | 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 a | Deceleration speed not in permis- sible range | Check P609, observe specification of drive amplifier |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------------------|---|---|--|
| 78976 to 78999 | CAN-Param. P610 axis a | Maximum static positioning error not in permissible range | Check P610, observe specification of drive amplifier |
| 79104 to 79127 | CAN-Param. P611 axis a | 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 a | Filter band width for torque signal not in permissible range | Check P612, observe specification of drive amplifier |
| 79360 to 79383 | CAN-Param. P613 axis a | 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 a | Inadmissible value for CAN position scaling, CPS | Check P401 (pulses per revolution), observe specification of drive amplifier |
| 79616 to 79639 | CAN-Param. P614 axis a | Value for zero point offset not in permissible range | Check P614, permitted values: 0 to 360 °. |
| 79744 to 79767 | CAN-Para. dir.rotat. axis a | Error in transfer of rotational direction | Drive amplifier possibly defective |
| 79872 to 79895 | CAN-Param. P615 axis a | 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 |
| 93952 | CANopen-I/O-DI. CAN3 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|---|---|--|
| 94080 | CANopen-I/O-DI. CAN1 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 94208 | CANopen-I/O-DI. CAN2 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 94336 | CANopen-Axis-DI CAN1 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 94464 | CANopen-Axis-DI CAN2 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 94592 | CANopen-Axis-DI CAN3 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 94720 | CANopen-encoderDI CAN1 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 94848 | CANopen-encoderDI CAN2 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|---|--|---|
| 94976 | CANopen-encoderDI CAN3 N-Id/C-Nr: <i>nn0dddd</i> | Error during machine parameter download (CANopen) | <i>nn</i> = Node-ID (decimal) 0 = separation sign <i>dddd</i> = Index of the incorrect parameter as decimal number |
| 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 (dezimal) 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 |
| 103552 | IntExc:CoProcSegOver | 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 |
|------------------------|---|---|--|
| 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 a | 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 | Ckeck the declaration number of the SPC_FCT |
| 131968 to 131983 | BS-working area Belt 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? |
| 132096 to 132111 | BS-End ambiguity Belt 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|----------------------|---|--|
| 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 |
| 136576 | tool/wcsys-name miss | The used name of the WC_SYSTEM resp. of the TOOL in the BAPS program is not contained in the corresponding system file | Check WCSYST.DAT resp. TOOLS.DAT |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|---|---|---|
| 136832 | parameter ext. prog. | The transfer parameters do not correspond with the declared place holders of the external sub-routine | Check BAPS program |
| 136960 | parameter number | The transfer parameters do not correspond with the declared parameters of the external sub-routine | 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 sub-routine (PARALLEL, ALSO, PARALLEL END). In this process, the main process is tried to be stopped with STOP | Check BAPS program(s) |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|----------------------|--|--|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|---|--|---|
| 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 |
| 143360 | no belt-option | Belt synchronization is disabled | Option for purchase. Can be enabled by Bosch customer service. |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|----------------------|---|---|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|------------------------|--|---|---|
| 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.: k | Scara-transformation: the arm is completely retracted, resp. extended | Travel into valid range in manual mode |
| 146560 to 146575 | wc-zero-pos singular Kinem.: k | Scara-transformation: Singular world point programmed | Change BAPS program |
| 146688 to 146703 | too close on stand Kinem.: k | 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. P | 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. P | 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. P | 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. P | 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. P | 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 a | Invalid value in P5 | Check P5 |
| 158336 to 158359 | CAN-Param. P702 axis a | Invalid value in P702 | Check P702 Observe specification of drive amplifier |
| 158464 to 158487 | CAN-Param. P703 axis a | Invalid value in P703 | Check P703 Observe specification of drive amplifier |
| 158592 to 158615 | CAN-Param. P704 axis a | Invalid value in P704 | Check P704 Observe specification of drive amplifier |
| 158720 to 158743 | CAN-Param. P705 axis a | Invalid value in P705 | Check P705 Observe specification of drive amplifier |
| 158848 to 158871 | CAN-Param. P706 axis a | Invalid value in P706 | Check P706 Observe specification of drive amplifier |
| 158976 to 158999 | CAN-Param. P707 axis a | Invalid value in P707 | Check P707 Observe specification of drive amplifier |
| 159104 to 159127 | CAN-Param. P708 axis a | Invalid value in P708 | Check P708 Observe specification of drive amplifier |
| 159232 to 159255 | CAN-Param. P709 axis a | 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 a | Invalid value in P710 | Check P710 Observe specification of drive amplifier |
| 159488 to 159511 | CAN-Param. P711 axis a | Invalid value in P711 | Check P711 Observe specification of drive amplifier |
| 159616 to 159639 | CAN-Param. P712 axis a | Invalid value in P712 | Check P712 Observe specification of drive amplifier |
| 159744 to 159767 | CAN-Param. P713 axis a | Invalid value in P713 | Check P713 Observe specification of drive amplifier |
| 159872 to 159895 | CAN-Param. P714 axis a | Invalid value in P714 | Check P714 Observe specification of drive amplifier |
| 160000 to 160023 | CAN-Param. P715 N1 axis a | Invalid value in 1st element of P715 | Check P715 Observe specification of drive amplifier |
| 160128 to 160151 | CAN-Param. P715 N2 axis a | Invalid value in 2nd element of P715 | Check P715 Observe specification of drive amplifier |
| 160256 to 160279 | CAN-Param. P715 N3 axis a | Invalid value in 3rd element of P715 | Check P715 Observe specification of drive amplifier |
| 160384 to 160407 | CAN-Param. P715 N4 axis a | Invalid value in 4th element of P715 | Check P715 Observe specification of drive amplifier |
| 160512 to 160535 | CAN-Param. P716 N1 axis a | Invalid value in 1st element of P716 | Check P716 Observe specification of drive amplifier |
| 160640 to 160663 | CAN-Param. P716 N2 axis a | Invalid value in 2nd element of P716 | Check P716 Observe specification of drive amplifier |
| 160768 to 160791 | CAN-Param. P716 N3 axis a | Invalid value in 3rd element of P716 | Check P716 Observe specification of drive amplifier |
| 160896 to 160919 | CAN-Param. P716 N4 axis a | Invalid value in 4th element of P716 | P716 Check Observe specification of drive amplifier |
| 161024 to 161047 | CAN-Param. P717 N1 axis a | 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 a | Invalid value in 2nd element of P717 | Check P717 Observe specification of drive amplifier |
| 161280 to 161303 | CAN-Param. P717 N3 axis a | Invalid value in 3rd element of P717 | Check P717 Observe specification of drive amplifier |
| 161408 to 161431 | CAN-Param. P717 N4 axis a | Invalid value in 4th element of P717 | Check P717 Observe specification of drive amplifier |
| 161536 to 161559 | CAN-Param. P718 N1 axis a | Invalid value in 1st element of P718 | Check P718 Observe specification of drive amplifier |
| 161664 to 161687 | CAN-Param. P718 N2 axis a | Invalid value in 2nd element of P718 | Check P718 Observe specification of drive amplifier |
| 161792 to 161815 | CAN-Param. P718 N3 axis a | Invalid value in 3rd element of P718 | Check P718 Observe specification of drive amplifier |
| 161920 to 161943 | CAN-Param. P718 N4 axis a | Invalid value in 4th element of P718 | Check P718 Observe specification of drive amplifier |
| 162048 to 162071 | CAN-Param. P719 axis a | Invalid value in P719 | Check P719 Observe specification of drive amplifier |
| 162176 to 162199 | CAN-Param. P720 axis a | Invalid value in P720 | Check P720 Observe specification of drive amplifier |
| 162304 to 162327 | CAN-Param. P721 N1 axis a | Invalid value in 1st element of P721 | Check P721 Observe specification of drive amplifier |
| 162432 to 162455 | CAN-Param. P721 N2 axis a | Invalid value in 2nd element of P721 | Check P721 Observe specification of drive amplifier |
| 162560 to 162583 | CAN-Param. P721 N3 axis a | Invalid value in 3rd element of P721 | Check P721 Observe specification of drive amplifier |
| 162688 to 162711 | CAN-Param. P721 N4 axis a | Invalid value in 4th element of P721 | Check P721 Observe specification of drive amplifier |
| 162816 to 162839 | CAN-Param. P722 axis a | 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 a | Invalid value in P738 | Check P738 Observe specification of drive amplifier |
| 163072 to 163095 | CAN-Param. P739 axis a | Invalid value in P739 | Check P739 Observe specification of drive amplifier |
| 163200 to 163223 | CAN-Param. P740 axis a | Invalid value in P740 | Check P740 Observe specification of drive amplifier |
| 163328 to 163351 | CAN-Param. P741 axis a | Invalid value in P741 | Check P741 Observe specification of drive amplifier |
| 163456 to 163479 | CAN-Param. P742 axis a | Invalid value in P742 | Check P742 Observe specification of drive amplifier |
| 163584 to 163607 | CAN-Param. P743 axis a | Invalid value in P743 | Check P743 Observe specification of drive amplifier |
| 163712 to 163735 | CAN-Param. P744 axis a | Invalid value in P744 | Check P744 Observe specification of drive amplifier |
| 163840 to 163863 | CAN-Param. P723 axis a | Invalid value in P723 | Check P723 Observe specification of drive amplifier |
| 163968 to 163991 | CAN-Param. P724 N1 axis a | Invalid value in 1st element of P724 | Check P724 Observe specification of drive amplifier |
| 164096 to 164119 | CAN-Param. P724 N2 axis a | Invalid value in 2nd element of P724 | Check P724 Observe specification of drive amplifier |
| 164224 to 164247 | CAN-Param. P724 N3 axis a | Invalid value in 3rd element of P724 | Check P724 Observe specification of drive amplifier |
| 164352 to 164375 | CAN-Param. P724 N4 axis a | Invalid value in 4th element of P724 | Check P724 Observe specification of drive amplifier |
| 164480 to 164503 | CAN-Param. P725 axis a | Invalid value in P725 | Check P725 Observe specification of drive amplifier |
| 164608 to 164631 | CAN-Param. P726 axis a | 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 a | Invalid value in P727 | Check P727 Observe specification of drive amplifier |
| 164864 to 164887 | CAN-Param. P728 axis a | Invalid value in P728 | Check P728 Observe specification of drive amplifier |
| 164992 to 165015 | CAN-Param. P729 axis a | Invalid value in P729 | Check P729 Observe specification of drive amplifier |
| 165120 to 165143 | CAN-Param. P730 axis a | Invalid value in P730 | Check P730 Observe specification of drive amplifier |
| 165248 to 165271 | CAN-Param. P731 axis a | Invalid value in P731 | Check P731 Observe specification of drive amplifier |
| 165376 to 165399 | CAN-Param. P732 axis a | Invalid value in P732 | Check P732 Observe specification of drive amplifier |
| 165504 to 165527 | CAN-Param. P733 N1 axis a | Invalid value in 1st element of P733 | Check P733 Observe specification of drive amplifier |
| 165632 to 165655 | CAN-Param. P733 N2 axis a | Invalid value in 2nd element of P733 | Check P733 Observe specification of drive amplifier |
| 165760 to 165783 | CAN-Param. P734 axis a | Invalid value in P734 | Check P734 Observe specification of drive amplifier |
| 165888 to 165911 | CAN-Param. P735 axis a | Invalid value in P735 | Check P735 Observe specification of drive amplifier |
| 166016 to 166039 | CAN-Param. P745 axis a | Invalid value in P745 | Check P745 Observe specification of drive amplifier |
| 166144 to 166167 | CAN-Param. P736 axis a | Invalid value in P736 | Check P736 Observe specification of drive amplifier |
| 166272 to 166295 | CAN-Param. P737 axis a | Invalid value in P737 | Check P737 Observe specification of drive amplifier |
| 166400 to 166439 | no inp–transm. CAN1 inp. –bl. x | 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. x | 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. x | 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. x | 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.: y | 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.: y | 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.: y | 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.: y | 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 a | Drive amplifier has detected an error | Notice error code at the drive amplifier display |
| 169088 | Sercos-Loop open | The SERCOS-loop is not connected | Check SERCOS connections |
| 169472 to 169495 | Sercos–Error Phase1 axis a | The indicated axis was not identified | Check axis address (rho4 and drive amplifier) Check baudrate |
| 169600 | Sercos-error Phase2 axis a Y- 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) |
| 169600 | Sercos-error Phase2 axis a S- 127 | 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 a Y- 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 a S- 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 a Y- 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 a | 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 a | 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 a | 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 a | 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 ≤ 8 |
| 268672 to 268695 | Interpolator Stop axis a | 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 a | 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 a | 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.: k | 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.: k | 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.: k | 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.: k | Robot type 26: carpal point is within joint 2 Singularity in backward transformation | Travel back axes in Jog mode |
| 277888 to 277903 | outstreched joi. 1,2 Kinem.: k | 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.: k | 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.: k | 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 a | 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 a | 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|-----------------------------------|--|---|
| 281216 | DB length undeclared | The data module length has not been initialized in the BAPS program for WRITE resp. READ PLC | Adapt BAPS program |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|--|--|---|
| 303616 | control not ready | The RCI signal 'Emergency operation' is pending or external program selection with pending Emergency stop | Check PLC program |
| 388224 | CANopen Emergency Message <i>nn0dddd</i> | A CANopen device has signalled an internal error | <i>Nn</i> = node-ID (decimal) 0 = 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 | FEPROM 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 Winrho4.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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|----------------------|--|---|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|----------------------|---|--|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|-------------------|---|--|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|----------------------|--|--|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|-----------------------|--|---|
| 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 |
| 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 SHUTDOWN_RCO 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_RCO 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|--|---|--|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|--|---|---|
| 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 |
| 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|----------|---------------------|---|---|
| 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 |
| 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-overrun | 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 |

rho4 status messages

| Code No. | PHG text display | Possible cause | Remark |
|-----------------|-------------------------|---|--|
| 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. num- ber of root dir entries (224) is re- ached |
| 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 |

rho4 status messages

Notes:

Warnings

3 Warnings

| Error No. | PHG display | Possible cause | Remark |
|------------------------|--|--|---|
| 14720 to 14743 | interpolator stop axis a | 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 a | 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.. p | 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.. p | 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.. p | Special function 2: A too long time offset has been programmed | Check BAPS program |
| 148992 to 149007 | lol-on:fct. in use fct. No.. p | 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.. p | 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.. p | 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.. p | 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 a | 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 ≤ 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 a | 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

| Abbreviation | Meaning |
|---------------------|--|
| 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 |

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