Debug information

System overview (cont’d)

Connection the converter

Notes:

• Power supply display for converter operation
• If switching over a function from ON to OFF, an LED or other similar display is not lit or not active; this does not indicate that the function is switched off or in an error condition.

Converter is grounded (earthed) correctly

Make sure that all electrical connections of the motor are properly grounded. Use the shielded cable that comes with the cable kit to mount the cable to the converter’s shield plate.

Protective devices

Install intrinsic protection equipment between the line supply and converter.

Protection and monitoring equipment

To provide protection against earth fault, use the overcurrent devices listed in the Technical data (fuses, circuit breakers etc.).

If the apparent impedance of the line supply at the input point is not suitable, so that fuses do not operate in the specified time in the case of overcurrent faults, ground fault, fault to frame, then you must use additional residual current protective devices RCD (RCCB or MRCD, type B).

Document the instructions for the operation of the residual current protective devices. With a group installation, only one RCD can be used.

The motor cables are shorter than 50 m (164 ft) shielded.

Cables and connections

Connection cables are laid in such a manner that they do not come into direct contact with the converter, for example, when mounted in a control cabinet. The connection cables are laid so that the field of view of the converter is not impeded.

Protection of the electrical equipment:

If condensation or conductive pollution can be excluded at the installation site, a lower degree of control equipment protection (IP21) can be used. Protect the converter, e.g. by installing it in a control cabinet with degree of protection IP54 according to IEC 60529 or NEMA 12. Further measures may be necessary for particularly critical operating conditions.

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Overview of web server

| Device designation | User name, language selection and log-out | Fault and warning messages | Drive and motor data | Save changes | Support contact and information | Display/HTML control panel | Navigation toolbar | Home icon
|---------------------|------------------------------------------|---------------------------|---------------------|-------------|-------------------------------|---------------------------|--------------------|-----------------|

**Block diagram**

**Commissioning**

Commissioning with web server

Use the web server integrated in the converter for the commissioning. The web server integrated in the converter supports the following browsers:

- Microsoft Internet Explorer 11
- Microsoft Edge & IE
- Mozilla Firefox
- Google Chrome ≥ v52

**Preparation for commissioning**

- Mount the motor on the mechanical system. Connect the motor to the converter.
- Connect the converter to your Commissioning-PC via Ethernet interface (X127).
- Switch on the converter.
- The converter powers up and reads the motor data.
- Start the Internet- Browser for commissioning.
- Enter the IP address of the converter in your list of your browser.

**Note**

If the RDY LED is blinking fast in yellow after the first power up of the converter, then a power cycle is needed.

**Start the Internet-Browser for commissioning.**

- Connect the converter to your Commissioning-PC via the Ethernet interface (X127).
- Mount the motor on the mechanical system. Connect the motor to the converter.
- Mozilla Firefox ≥ 48
- Default-IP-Address: 169.254.11.22 (Subnet-Mask: 255.255.0.0).

**Control panel**

- It is required to move the axis this can be done using the control panel. Click on the button ‘Control panel’. The data from the module is read and entered in the desired speed.
- The axis can be moved by holding the ‘Right/Left’ buttons.

**Addendum**

Further adjustments can be made by selecting the menu 'Params'.

**Saving changes**

In order to save the changes permanently click on the floppy disk symbol in the footer.

**Messages**

In the menu choose 'Diagnoses' and 'Messages' to display the Warnings and Alarms including information concerning causes and remedy. A detailed description of the events is available in the manual.

**Correcting faults of the motor**

- Determine cause and adjust parts
- P
- Check coupled machine
- Error in the configuration/commissioning
- Adjust/repair gearbox
- R
- DC link overvoltage
- C
- Cause of fault (see 'Fault cases and remedial measures' below)
- C
- Motor overload
- A
- Poor alignment
- Auxiliary unit fault
- G
- Safety monitoring channel detected an error
- Application / technology fault
- Replace the motor
- Interruption of a phase in the supply
- Internal (DRIVE-CLiQ) communication error
- Interrupted phase in the feeder
- External value/signal out of the range
- •

**Additional functions**

- Further adjustments can be made by selecting the menu 'Params'.
- You can also change the parameter settings and reset them later if required or you can reset the conversion to the factory settings.

**Display and operational elements**

- The conversion displays the correct operating state via six LEDs:
  - 'RDY' Status of the converter
  - 'COSM' State of the communication
- Faults can be acknowledged by the OK button. When using the ready button, the fault label (if set) will be displayed. When parameters were set incorrectly or the motor too small, the converter reacts in a possible case of a defect. Switch the converter off and plug-in the SD card.

**Diagnostics**

**Diagnostic of the converter**

- Resolve the diagnostic with the Webbrowser troubleshooting can be done directly on the device. The alarms and faults are shown in the display of the converter according to the message classes defined in PROFIdrive.

**Diagnostic of the motor**

- The diagnostics display the current operating state via two LEDs:
  - 'RDY' Status of the converter
  - 'COSM' Status of the communication
- Faults can be acknowledged by the OK button.

**Display the 'S210 Operating Instructions'.**

For more detailed information, please refer to the 'S210 Operating Instructions'.

**WARNING**

Danger due to moving parts of the machine

During the following steps the motor will rotate. Please make sure that the motor is mounted and connected correctly and that the connected machine may be moved without causing a damage or injury.

**Perform a Button-Testing**

For the optimization of the control-parameters, perform the following procedure:

1. Enter 'Commissioning'.
2. Click on 'Start commissioning'.
3. Click on 'Diagnostics' and confirm the confirmation prompt (Orange/white bar appears).
4. Choose 'Commissioning' and confirm the confirmation prompt (Orange/white bar appears).
5. Click on 'Start tuning'.
6. Enter the peripheral angle of rotation for the required measurement about which the motor and the connected machine are permitted to turn without causing a damage to the machine (angle deviation)
7. Confirm with 'OK' and the tuning will start.

**Additional information**

For further details, please refer to the 'S210 Operating Instructions'.

**DIAGNOSTICS**

**Description**

- **Message number**
- **Description**
  1. **Hardware/software error**
  2. **Functionality or software malfunction**
  3. **Network fault**
  4. **Power supply fault identified**
  5. **Voltage supply fault**
  6. **DC link overvoltage**
  7. **Power electronics fault**
  8. **Overtemperature electronic component**
  9. **Overtemperature other component**
  10. **Overtemperature internal other component**
  11. **Overcurrent internal other component**
  12. **Overcurrent external other component**
  13. **Overcurrent motor winding**
  14. **Overcurrent motor winding**
  15. **Overcurrent motor winding**
  16. **Overcurrent motor winding**
  17. **Overcurrent motor winding**
  18. **Overcurrent motor winding**
  19. **Overcurrent motor winding**
  20. **Overcurrent motor winding**

**Security information**

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