


10 FUNCTION INSPECTIONS AND MAINTENANCE


10.1 Function inspections

	<p>During function inspections, comply with the guidelines set out in EN 60 079-17. This standard contains the regulations of the international standard IEC 60 079-17.</p>
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During operation, the correct function of the I.S. 1 system is monitored by the connected automation equipment. Depending on the specific software used for the automation equipment, the correct function of the field stations or the individual components is displayed.

Function inspections can be implemented by:

- Visual inspection of the CPU & Power Modules and I/O modules
- The PC Software "I.S. Wizard"
- The field-bus-specific software of the automation equipment


	<p>R. STAHL recommends an annual system check using the "I.S. Wizard" software.</p>
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10.1.1 Automatic function inspections

Function inspections of the data exchange are implemented via the CPU & Power Module (or optionally via the "I.S. Wizard software") between:

- Field devices and I/O modules
- I/O modules and CPU & Power Module
- CPU & Power Module and external automation equipment

10.1.2 Visual inspection of the CPU & Power Modules and I/O modules

	<p>The display of the CPU & Power Module for Zone 1 or Zone 2 has the same configuration (2 lines, 16 characters).</p> <p>The display of the CPU & Power Module for Zone 1 is integrated in the base and is always visible.</p> <p>The display of the CPU & Power Module for Zone 2 is positioned under the label carrier.</p>
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CPU & Power Module: Display

The following working steps must be carried out for the visual inspection of the CPU & Power Module:

- Open the enclosure cover of the field station.
 - In case of a CPU & Power Module for Zone 2 fold open the label carrier. The display is now visible.
- The CPU & Power Module display shows the main view (error-free normal operation):

FBA	FB	I/O
123	OK	OK

Fig. 10-1 Display "Main view"

If the fieldbus or I/O module status display does not show "OK":

- See Chapter 11.3 regarding error detection in the CPU & Power Module.

CPU & Power Module: LEDs

The LEDs are always visible. During error-free normal operation, the green diode is constantly lit (OK condition). The green diode flashes when operational without data exchange.

- Check LEDs for "OK condition".

If the green diode is not constantly lit or flashing, or the red diode is lit:

- See *Tab. 11-2* regarding error detection in the CPU & Power Module.

I/O modules: LEDs

The LEDs are always visible. During error-free normal operation, the green diode is constantly lit (OK condition).

- Check LEDs for "OK condition".

If the green diode is not constantly lit or flashing, or the red diode is lit:

- See *Tab. 11-4* regarding error detection in the I/O modules.
- Check the CPU & Power Module display for faulty displays.
- Replace module if there is a module defect (see Chapter 11.5).

10.2 Maintenance during operation

Most system maintenance is restricted to visual inspection. The system can therefore remain operational.

Defective I/O modules can be replaced at any time during operation without problem (hot swap). For further information regarding module replacement, see Chapter 11.5.

10.2.1 Overview of maintenance activities

The field stations should be inspected every six months regarding:

- Consistency of the enclosure
- Water penetration
- Condensation
- Tightness of cable connections
- Cable gland intactness

10.3 Shutdown

Before the I.S. 1 system can be switched off, ensure the system is in a safe condition.

Behavior of the output module during shutdown

If the fieldbus is switched off or disconnected from the CPU & Power Module, the I.S. 1 output modules switch to a previously defined setting. This can be specified during parameterization. Analog and digital outputs have different settings.

The following values can be assumed:

- For analog outputs: –10 %, 0 %, 100 %, 110 %, hold last value
- For digital outputs: ON, OFF, hold last value

If the power supply is switched off, the outputs switch to a powerless condition.

The following values are assumed:

- For analog outputs: 0 mA
- For digital outputs: OFF

OPERATING INSTRUCTIONS FOR THE I.S. 1 SYSTEM
