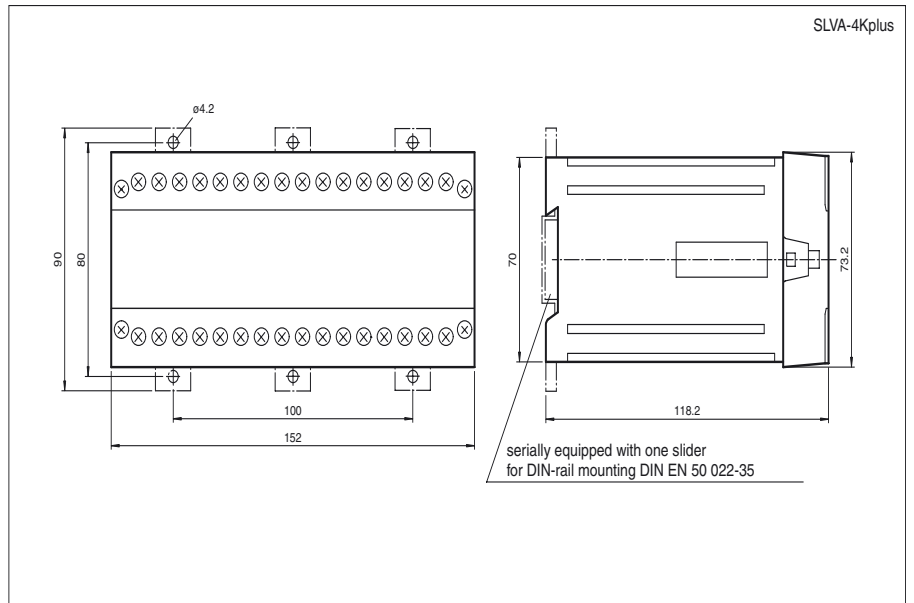




Dimensions



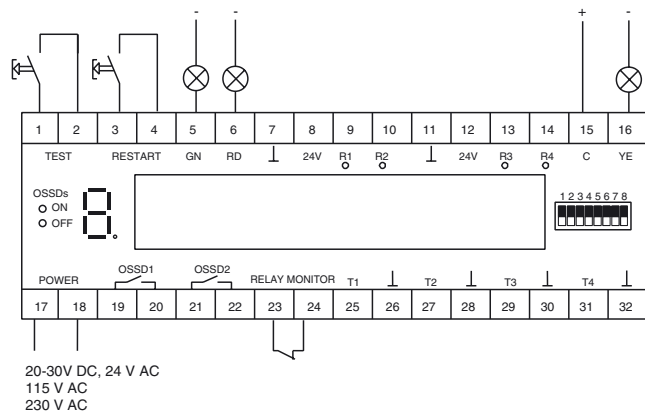
Model Number

SLVA-4Kplus 115VAC-RM

Electrical connection

Features

- Self-monitoring (type 4 according to IEC/EN 61496-1)
- Evaluation device for safety thru-beam sensors SLA, for safety light grids SLP and for 2 channel safety devices (emergency off)
- Operating mode can be selected by means of DIP switches
- Start/Restart disable
- Relay monitor
- Pre-fault indication
- Clearly visible LED functional display
- 7-segment diagnostic display
- Safety outputs OSSD, external status displays OSSD



Release date: 2009-12-14 11:23 Date of issue: 2014-08-04 421017_eng.xml

Technical data

General specifications

| | |
|---------------------------------------|------------------------------|
| Tests | IEC/EN 61496 |
| Safety type according to IEC/EN 61496 | 4 |
| Marking | CE |
| Operating mode | Relay monitor, emergency off |

Functional safety related parameters

| | |
|------------------------------|----------|
| Safety Integrity Level (SIL) | SIL 3 |
| Performance level (PL) | PL e |
| Category | Cat. 4 |
| Mission Time (T_M) | 20 a |
| PFH _d | 1.97 E-9 |
| Type | 4 |

Indicators/operating means

| | |
|-----------------------|--|
| Diagnostics indicator | 7-segment display |
| Function indicator | LED red: OSSD off LED green: OSSD on LED yellow 4x: Indicator lamp channel 1 ... 4 |
| Pre-fault indicator | LED yellow flashing: Indicator lamp channel 1 ... 4 |
| Control elements | 8 DIP-switches for selection of operating modes |

Electrical specifications

| | | |
|------------------------|-------|--------------------|
| Operating voltage | U_B | 115 V AC +10/-15 % |
| No-load supply current | I_0 | 50 mA |
| Power consumption | P_0 | 13 VA |

Input

| | |
|--------------------|-----------------------------|
| Activation current | approx. 1 mA |
| Activation time | 0.03 ... 1 s |
| Test input | Reset-input for system test |
| Function input | Relay monitor |

Output

| | |
|-------------------|--|
| Safety output | 2 relay outputs, force-guided NO-contact |
| Signal output | Direct output for LEDs for displaying the switching state of the OSSDs |
| Switching voltage | 20 ... 230 V AC/DC |
| Switching current | AC: 0.01 ... 2 A DC see diagram of limit load curve |
| Response time | 40 ms |

Ambient conditions

| | |
|---------------------|-------------------------------|
| Ambient temperature | 0 ... 50 °C (32 ... 122 °F) |
| Storage temperature | -20 ... 75 °C (-4 ... 167 °F) |

Mechanical specifications

| | |
|----------------------|---|
| Degree of protection | IP20 |
| Connection | Connection terminals, max. conductor cross-sectional area 1.5 mm ² |
| Material | |
| Housing | Polycarbonate/V-0 |
| Mass | 900 g |

Approvals and certificates

| | |
|-----------|--------------|
| Approvals | TÜV; cNRTLus |
|-----------|--------------|

Operating modes

The mode of operation is adjusted according to the description of the item when the unit leaves the factory. The user can change the mode of operation. After changing the mode of operation, before the system is enabled, a test of the effectiveness of the selected setting must always take place.

You can adjust the modes of operation of the SLVA-4Kplus with the DIP switches. The DIP switches are accessible by removing the transparent covering on the upper side of the analyser unit.

Two switches should each be moved into the same position.

| Switch | Position | Mode of operation |
|--------|----------|---|
| 1 + 5 | OFF | Without startup/restart disable (restart) |
| | ON | With startup/restart disable (restart) |
| 2 + 6 | OFF | Without relay monitor (EDM) |
| | ON | With relay monitor (EDM) |
| 3 + 7 | OFF | Optical barriers on channels 3 and 4 |
| | ON | Emergency off on channels 3 and 4 |
| 4 + 8 | OFF | Emergency off static |
| | ON | Emergency off pulsed |

If the DIP switches are turned on during operation, the analyser unit switches into secure state (outputs turned off) and the 7-segment displays shows a P. In addition, output 15/16 flashes (ready for startup).

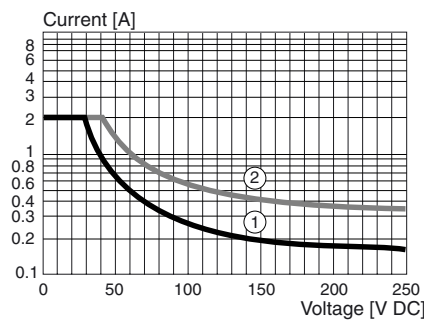
Indicator lamps and 7-segment diagnostic display

The positions of the indicator lamps of the analyser units are illustrated schematically below. The numeric display indicates the operating and error states of the BWS. In the error state, the decimal point of the 7-segment display flashes. The R1-R4 indicator lamps (yellow) display the receiver status of the light barriers or emergency off circuit that are connected. The OSSDs indicator lamp (ON = green, OFF = red) displays the status of the safety outputs.

| | | |
|-------------------|--------|---|
| LED | Red | OSSD outputs turned off |
| | Green | OSSD outputs turned on |
| | Yellow | Indicator lamps for channels (1-4) On = lightbeam free or emergency off circuit on Flashing = light beam free, minimum function reserve not met Off = light beam interrupted or emergency off circuit turned off |
| 7-segment display | | Protective field free, OSSD on (running light) |
| | | Protective field interrupted |
| | | Protective field free, OSSD off, ready for startup |
| | | System error |
| | | DIP switch setting incorrect |
| | | Short circuit in transmitter connection |
| | | Error in simultaneity condition for emergency off channel |
| | | Error in an external relay |
| | | DIP switches are turned on |

Diagrams

Load limit curve of relay OSSD for DC-current



- 1) inductive load, L/R = 40 ms
- 2) ohmic load