SLU140

Loop monitor

SLU140

Device features

- Monitoring of loop resistances
- Adjustable response value 1…10 Ω / 10…100 Ω
- Power On LED, Alarm LED
- N/O or N/C operation, selectable
- Adjustable time delay 0.1…10 s
- Alarm relay with two potential-free changeover contacts
- 45 mm enclosure

Ordering information

Type	Supply voltage	Art. No.
SLU140	AC 50…60 Hz AC 110/230 V	B 925 158

Accessories

Mounting rail for screw fixing	B 974 728

Product description

The devices of the SLU140 series are designed to monitor the thresholds of adjustable resistance values of low-resistance circuits. High resistance against stray voltages between the measuring inputs (up to AC 380 V) allow the device to be used for PE conductor monitoring in AC systems as well as for monitoring de-energized circuits. Owing to the large measuring range, the adjustable response delay and the possibility to choose between N/O operation and N/C operation, the devices are able to meet the requirements of different applications.

Typical applications

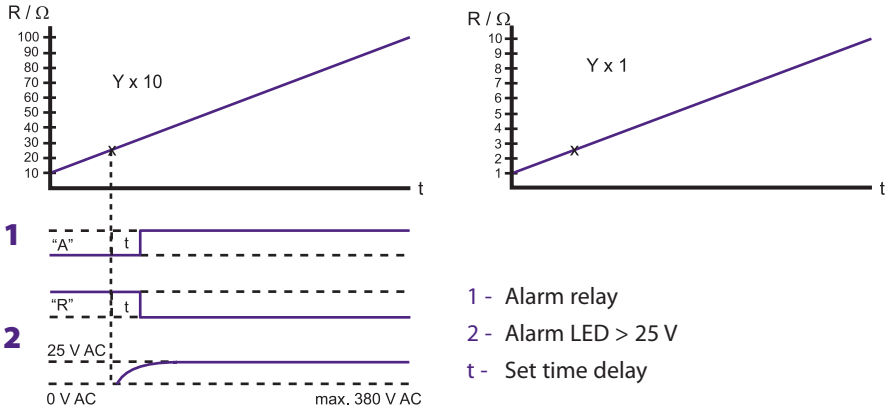
- Industrial installations
- Mining, open cast mining
- Production lines

Function

The devices of the SLU140 series monitor the ohmic resistance of the measuring loop between the terminals E and ⏚. This measuring loop can consist of a specified low-ohmic connection of the metallic enclosure of a piece of electrical equipment and the PE conductor, for example. For this purpose, the SLU140 has to be connected to the PE reference point in the distribution board and also to an earthing point at the electrical equipment. If the resistance value of the loop to be monitored exceeds the adjusted response value "Y", the red alarm LED signals "R>Y" and the alarm relays switch.

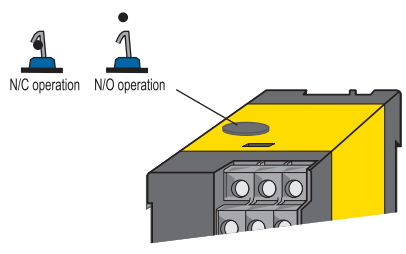
If extraneous voltages of > AC 25 V occur, e.g. in case of an open measuring circuit (PE interrupted) or if an earth fault occurs at the electrical equipment, the red alarm LED signals "AC" and the alarm relay switches. The response value can be selected with the selector switch "Yx1, Yx10" within the range (1…10 Ω or 10…100 Ω). The adjustable time delay allows the response time to be adapted to the system conditions (1…10 s). Extraneous DC and AC voltages at the measuring circuit may lead to incorrect response values.

Function charts



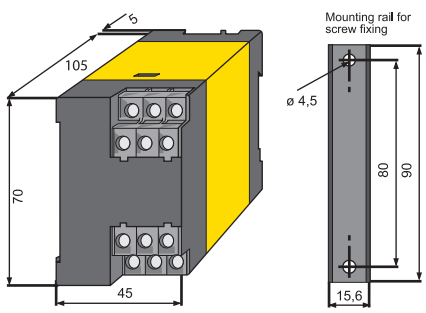
1 - Alarm relay
2 - Alarm LED > 25 V
t - Set time delay

Setting of the operating principle of the alarm relay

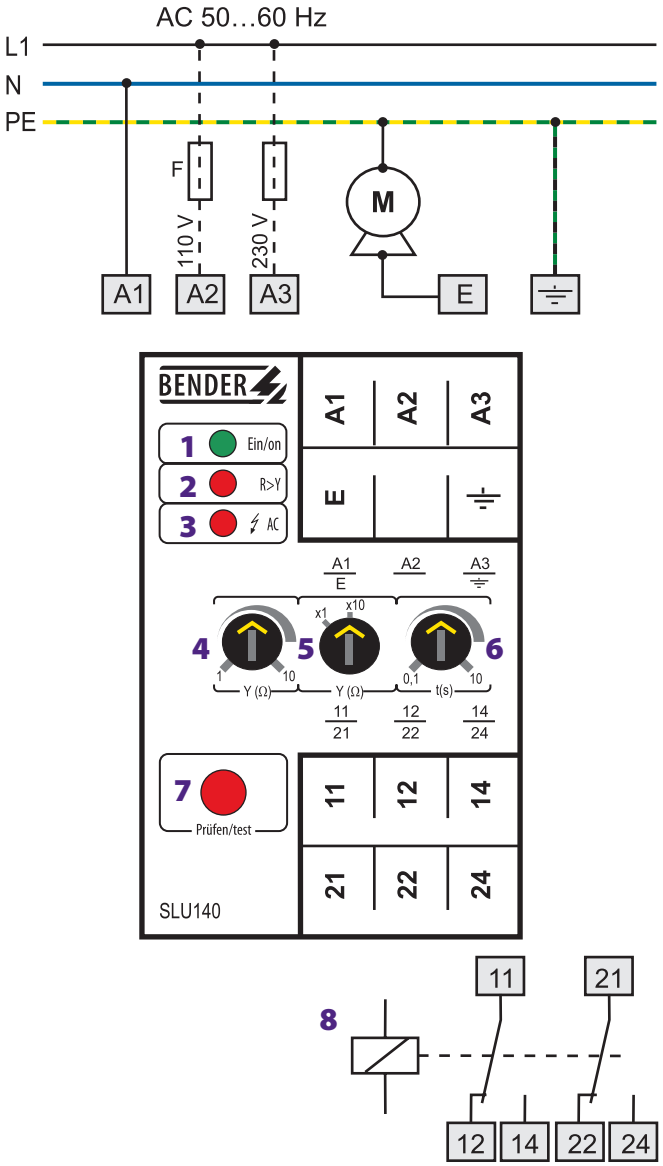


Dimension diagram X140

Dimensions in mm



Wiring diagram



1 - Power On LED green "Ein/on"
2 - Alarm LED red "R > Y"
3 - Alarm LED red, extraneous voltage > 25 V "AC"
4 - Adjustable response value "Y(Ω)"
5 - Selector switch for response value setting 1…10 Ω or 10…100 Ω
6 - Adjustable response delay "t/s"
7 - Test button "Prüfen/test"
8 - Alarm relay with two changeover contacts
F - 6 A fuse recommended

Technical data loop monitor SLU140

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 380 V
Rated impulse voltage/pollution degree	2.5 kV/3

Supply voltage

Supply voltage U_S	see ordering information
Operating range of U_S	0.8…1.15 U_S
Power consumption	< 5 VA

Measuring circuit

Response values	1…10 / 10…100 Ω
Response delay t	0.1…10 s
Max. permissible extraneous voltage	AC 380 V
Response value for extraneous voltage	> AC 25 V
Response delay for extraneous voltage	< 60 s
Repitition accuracy	±1.5 %
Temperature influence	< 0.05 % / °C

Switching elements

Number of changeover contacts	1 x 2
Operating principle	N/C operation/N/O operation (N/C operation)*
Electrical service life, number of cycles	12000
Contact class IEC 60255 Part 0-20	IIB
Rated contact voltage	AC 250 V/DC 300 V
Limited making capacity	AC/DC 5 A
Breaking capacity	2 A, AC 230 V, cos phi 0.4
	0.2 A, DC 220 V, L/R = 0.04 s

Environment / EMC

EMC immunity	acc. to IEC 61000-6-2
EMC emission	acc. to IEC 61000-6-4
Shock resistance IEC 60068-2-27 (during operation)	15 g/11 ms
Bumping IEC 60068-2-29 (during transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (during operation)	1 g / 10…150 Hz
Vibration resistance IEC 60068-2-6 (during transport)	2 g / 10…150 Hz
Ambient temperature, during operation	-10…+50 °C
Ambient temperature, during storage	-20…+70 °C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

Other

Operating mode	continuous operation
Mounting	any position
Connection	Flat terminals with self-lifting clamp washers
Connection properties	
single wire	2 x (1…1.5) mm²
flexible with end ferrules	2 x (0.75…1.5) mm²
Degree of protection, internal components (IEC 60529)	IP50
Degree of protection, terminals/with terminal covers (IEC 60529)	IP10/IP20
Screw fixing	with mounting rail
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Operating manual	BP308004
Weight	≤ 300 g

( )* factory setting

3.6