

Undervoltage relays SUG140

for DC systems





SUG140

Device features

- Undervoltage relay for DC voltages
- External supply voltage
- Adjustable response values:
0.4...4 V/3...30 V
- Adjustable response delay:
0.1...10 s
- Adjustable hysteresis: 2...10 %
- Power On LED, Alarm LED
- Alarm relay with two potential-free
changeover contacts
- 45 mm enclosure

Note

In case of new installations refer to VME420.

Approvals



Product description

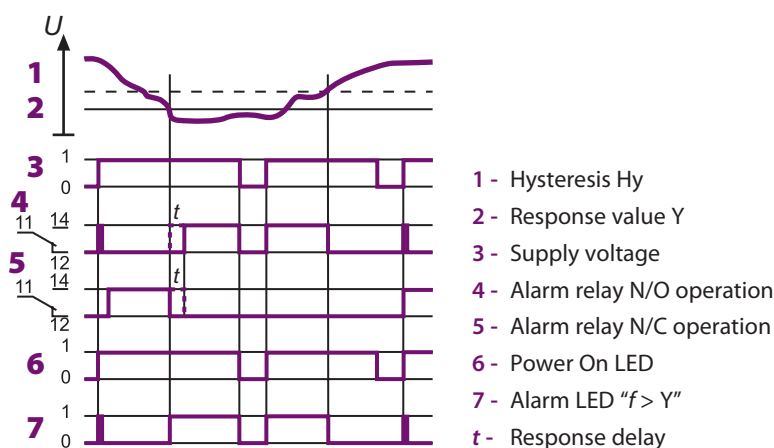
The SUG140 series relay is designed to monitor the undervoltage in a DC system. External supply voltage is required. Response value, response delay and hysteresis are adjustable.

Typical applications

- Monitoring of batteries
- Monitoring of voltage levels
- Switch to set the threshold values for analogue signals 0...10 V
- Monitoring of DC supplies

Function

The voltage to be monitored has to be connected to the terminals L1+ or L2+ resp. to L-. If the voltage drops below the set response value "Y", the alarm relay switches after the response delay has elapsed and the alarm LED "U<Y" lights up. When the measured quantity exceeds the set response value plus hysteresis "Hy", the relay switches back to its original state after approximately 70 ms. The operating principle of the alarm relay can be set to N/O or N/C operation.



Note

False alarms resulting from short-time operational measurement errors can be suppressed by setting a time delay. The set response delay remains effective even in case of complete supply voltage failure.

Standards

The SUG140 series complies with the requirements of the device standards: IEC 60255-6.

Ordering information

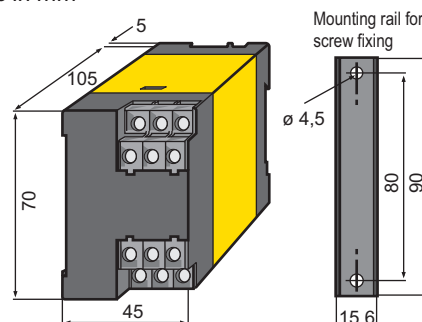
Supply voltage U_s	Type	Art. No.
AC 85...275 V	SUG140	B 934 642
DC 9.6...84 V	SUG140	B 934 647

Accessories

Type	Art. No.
Mounting rail for screw mounting	B 974 728

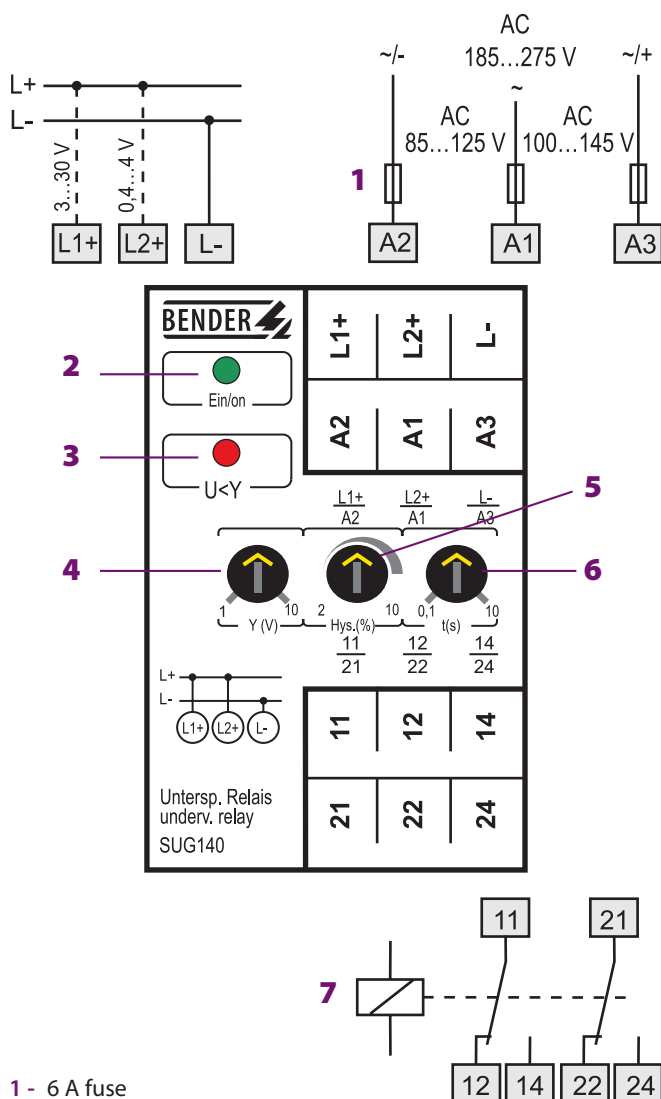
Dimension diagram X140

Dimensions in mm

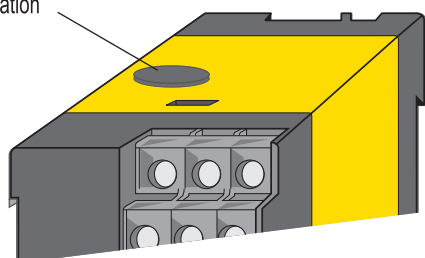
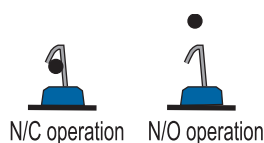




Wiring diagram



Setting of the operating principle of the alarm relay



Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/pollution degree	4 kV/3

Supply voltage

Supply voltage U_s	see ordering information
Power consumption	≤ 2.5 VA

Measuring circuit

Rated frequency f_n	DC
Response values (max. permissible voltage)	0.4...4 V (40 V) 3...30 V (300 V)
Response delay t	0.1...10 s
Hysteresis	2...10 %
Recovery time t_b	0.2 s
Delay on release	approx. 70 ms
Repetition accuracy	± 1.5 %
Temperature influence	< 0.2 %/°C

Switching elements

Number of changeover contacts	1 x 2
Operating principle	NC/N/O operation (N/O operation)*
Electrical endurance, number of cycles	12000
Contact class	IIB
Rated contact voltage	AC 250 V/DC 300 V
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 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (device not in operation)	2 g/10...150 Hz
Ambient temperature, during operation	-15...+50 °C
Ambient temperature, during storage	-20...+70 °C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

Connection

Connection	flat terminals with self-lifting clamp washers
Connection properties	
single wire	2 x (1...1.5) mm ²
flexible with end ferrule	2 x (0.75...1.5) mm ²

Other

Operating mode	continuous operation
Mounting	any position
Degree of protection, internal components (IEC 60529)	IP50
Degree of protection, terminals/with terminal covers (IEC 60529)	IP10/IP20
Screw mounting	with mounting rail
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Operating manual	BP305001
Weight	≤ 250 g

(*) factory setting



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