



for voltage monitoring in DC systems



- ⇒ electronic measuring relay
- ⇒ impulse voltage and electrical disturbance proof according to VDE and IEC
- ⇒ alarm relay with two change over contacts
- ⇒ built in power on LED and alarm LED
- ⇒ compact 45 mm casing
- ⇒ steplessly adjustable: response value, response time, hysteresis

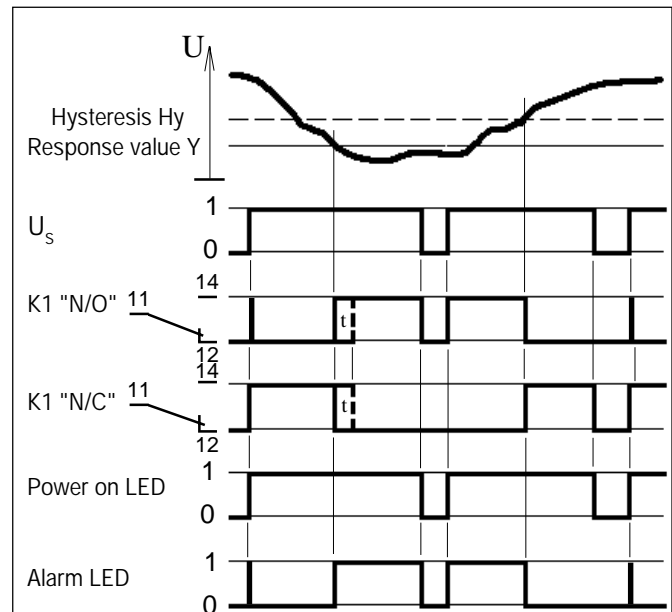
Function

If the system voltage falls below the adjusted response value "Y" the red alarm LED signals "U<Y" and after the adjusted delay on response "t" the alarm relay K1 reacts.

If the adjusted response value and additionally the adjusted hysteresis "Hy" is exceeded the alarm relay reacts and the alarm LED extinguishes at the end of the delay on release of approx. 70 ms.

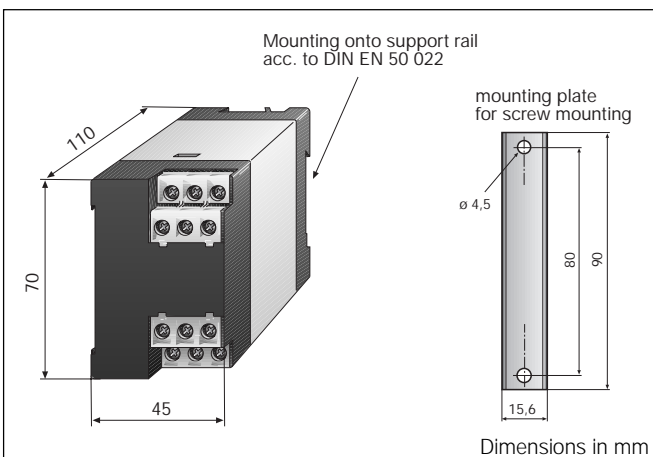
The supply voltage for the device has to be connected to the terminals A1 / A2 / A3 according to the respective operation range.

The function of the alarm relay is selectable between N/O and N/C operation (see wiring diagram).



t = adjusted delay on response
 "N/O" = N/O operation
 "N/C" = N/C operation
 U_s = supply voltage
 K1 = alarm relay

Dimension Diagram



Technical Data SUG140

Insulation coordination acc. to IEC 664-1

Rated insulation voltage	AC 250 V/DC 300 V
Rated impulse withstand voltage/contamination level	4 kV / 3
Dielectric test acc. to IEC 255-5	2 kV

Supply voltage

Supply voltage U_s	AC50...60Hz 85...125 V, 100...145 V, 185...275 V
Max. power consumption	2.5 VA

Response values

Response value (steplessly adjustable)	0.4 ... 4 V	3 ... 30 V
Max. admissible system voltage	DC 40 V	DC 300 V
Influence of ambient temperature		<0.05% / °C
Switching hysteresis (steplessly adjustable)		2 ... 10 %
Delay on response t (steplessly adjustable)		0.1 ... 10 sek
Recovery time max.		0.2 sek
Delay on release		ca. 70 ms
Repeat accuracy		< ± 1.5 %
Influence of ambient temperature		<0.2 % / °C

Contact circuit

Switching components	2 change over contacts
Contact class acc. to DIN IEC 255 Teil 0-20	IIB
Rated contact voltage	AC 250 V / DC 300 V
Admissible number of operations	12000 cycles
Limited making capacity	UC 5 A
Limited breaking capacity	
AC 230 V, cos phi = 0.4	AC 2 A
DC 220 V, L/R = 0,04s	DC 0.2 A
Operating principle, selectable	N/C or N/O operation
Pre-set by factory	N/O operation

Type tests

Test of the Electromagnetic Compatibility (EMC):

Immunity against electromagnetic

Interferences acc. prEN 50082-2:

Impulse voltage and electrical disturbance test acc. to IEC 255:

Impulse voltage test acc. to IEC 255-5	class III
Electrical disturbance test acc. to IEC 255-5	class III

Emissions acc. to EN 50081-2:

Emissions acc. to EN 55011/CISPR11	class B ¹⁾
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Mechanical tests:

Shock resistance acc. to IEC 68-2-27	15 g/11 ms
Bumping acc. to IEC 68-2-29	40 g/6 ms
Vibration strength acc. to IEC 68-2-6	10 ... 150 Hz/0.15 mm - 2 g

Environmental conditions

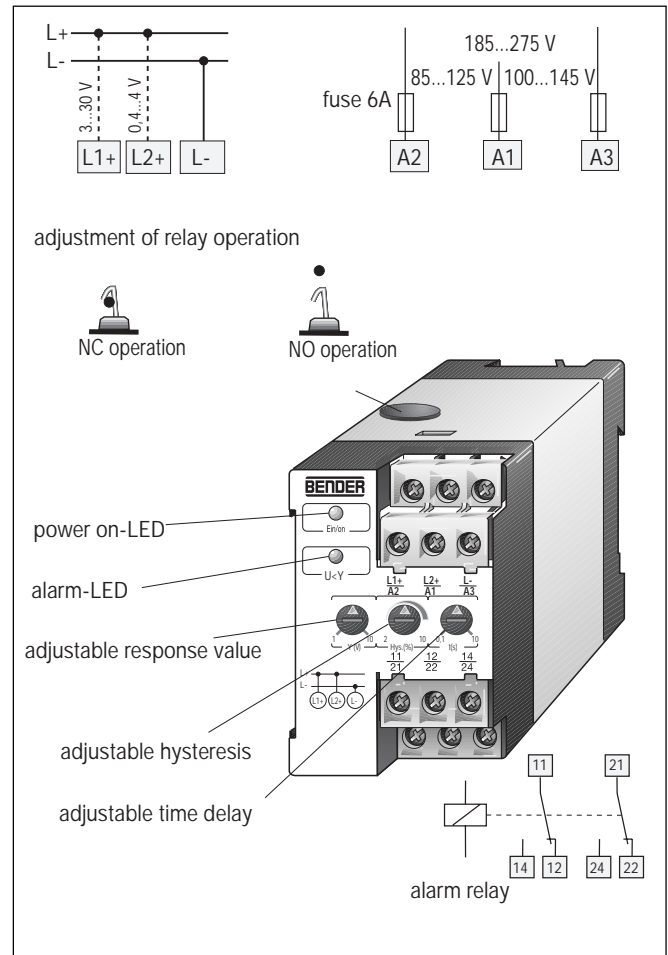
Ambient temperature, during operation	-15°C ... +50°C
Storage temperature range	-20°C ... +70°C
Climatic class acc. to IEC 721	3K5, except condensation and formation of ice

General data

Operation class	continuous operation
Mounting position	any position
Type of connection	terminals with self-lifting clamp-washers
Wire cross section	
single wire	2 x (1...1.5 mm ²)
fine braid	2 x (0.75...1.5 mm ²)
DIN rail	according to DIN EN 50 022 or screw mounting
Protection class acc. to EN 60529	
Internal components	IP 50
Terminals/with terminal covers	IP10/IP 20
Type of casing	X140
Flammability class	UL94V-0
Weight approx.	250 g

¹⁾ Class B devices are suitable for household and industrial use

Wiring Diagram



Safety instructions

Please check for correct mains voltage !

Electrical equipment shall only be installed by qualified personnel in consideration of the current safety regulations.

For short-circuit protection, the network coupling has to be equipped with a protective device according to IEC 364-4-473 (A fuse of 6 A is recommended).

Supplementary to this data sheet you will find enclosed "important safety instructions on the proper use of BENDER products."

Ordering details

Type	Supply voltage	Art. No.
SUG140	AC 85 ... 275 V	934 642
	DC 9,6...84 V	934 647

Ordering details for screw mounting

Type	Art. No.
Mounting plate	300 102

Right to modifications reserved