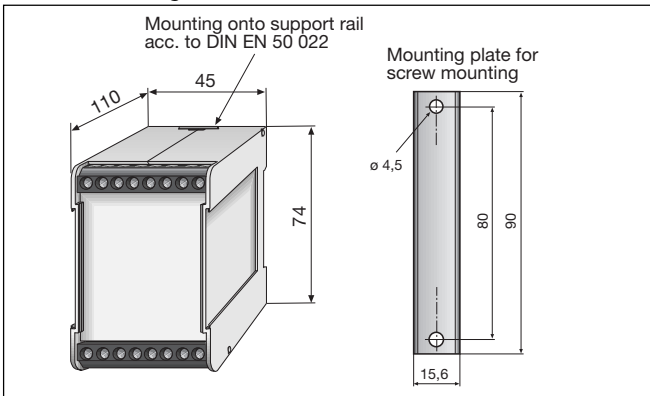


- electronic measuring relay for AC and DC voltages
- signals overvoltage or undervoltage
- additional supply voltage is not required
- impulse voltage and electrical disturbance proof acc. to VDE and IEC
- alarm relay with two change-over contacts
- built-in power on and alarm LEDs
- compact 45 mm housing
- steplessly adjustable: response value, response time, hysteresis
- built-in energy storage
- protective separation between supply voltage and alarm relay contacts acc. to EN 50178
- optocoupler output (SUA145-1)

Dimension diagram



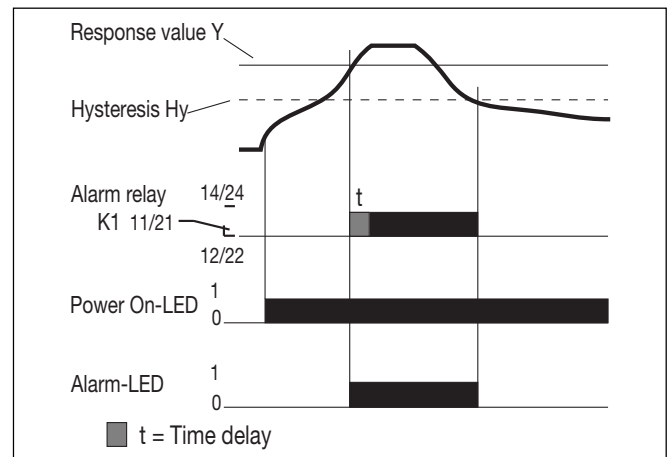
Function

1. Use as an overvoltage relay

The alarm relay K1 operates in N/O operation and the alarm LED „U>Y“ does not light up.

If the set response value „Y“ is exceeded, the yellow alarm LED „U>Y“ lights up and the alarm relay K1 operates after the expiry of the set response time delay „t“. Option with optocoupler (SUA145-1): optocoupler is in conducting state (terminals 31/34).

If the actual value falls below the set response value including the hysteresis „Hys“, the alarm relay releases and the yellow alarm LED is extinguished after the expiry of the delay on release of about 450 ms.

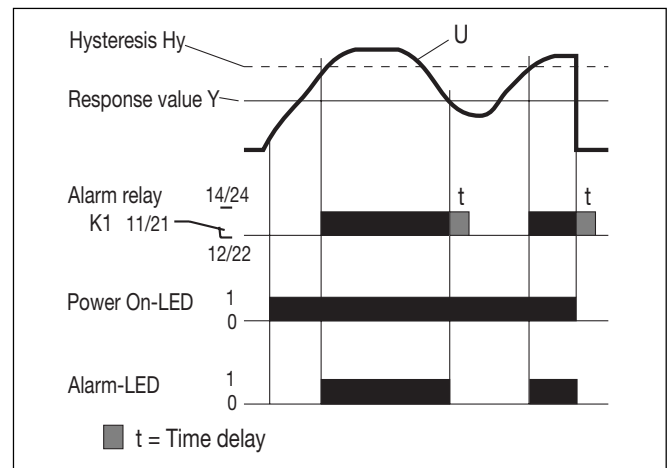


2. Use as an undervoltage relay

The alarm relay K1 operates in N/C operation and the alarm LED „U>Y“ lights up.

If the actual value falls below the set response value „Y“, the yellow alarm LED „U>Y“ is extinguished and the alarm relay K1 releases after the expiry of the set delay on response „t“. Option with optocoupler (SUA145-1): optocoupler is in blocking state (terminals 31/34).

If the set response value is exceeded including the hysteresis „Hys“, the alarm relay operates out and the yellow alarm LED illuminates after expiry of the delay on release of about 450 ms.



Technical data SUA145

Insulation coordination acc. to DIN VDE 0110, T1:

| | |
|---|---------|
| Insulation | AC 300V |
| Rated insulation voltage | AC 320V |
| Rated impulse withstand voltage/contamination level | 4 kV/3 |
| Dielectric test acc. to IEC 60255 | 2 kV |
| Protective separation of the nominal voltage of the system and the alarm relay contacts | |

Monitored System

| | |
|------------------------------|----------------------|
| Nominal system voltage U_N | DC or AC 40...400 Hz |
| Operating range | response range |
| 10...35 V | 10 ... 30 V |
| 20...275 V | 20 ... 60 V (opto) |
| 50...275 V | 50 ... 150 V |
| 120...350 V | 120 ... 300 V |
| Power consumption max. | 3.5 VA |

Response values

| | |
|--|----------------------------------|
| Response value | see Order details |
| Repeat accuracy | 1.5 % |
| Influence of ambient temperature | <0.11% / °C |
| Switching hysteresis (steplessly adjustable) | 2...10 % |
| Delay on response, (steplessly adjustable) | 0.1...10 sec. |
| Built-in energy storage | |
| 10...30 V | min. 1 sec. |
| 20...60 V (opto) | min. 1.5 sec. |
| 50...150 V, 120...300 V | min. 6 sec. |
| Delay on release | ca. 450 ms |
| Recovery time | ca. 1.5 sec. |
| Charging time for energy storage | ca. 60 sec. |
| Operating mode (for undervoltage operation) | N/C operation |
| Operating mode (for overvoltage operation) | N/O operation |
| Pre-set by factory | Undervoltage relay, AC-operation |

Contact circuit

| | |
|---|--|
| Switching components | 2 change over contacts |
| Contact class acc. to DIN IEC 60255 Teil 0-20 | II B |
| Rated contact voltage | AC 250 V/DC 300 V |
| Admissible number of operations | 12000 cycles |
| Making capacity | UC 5 A |
| Breaking capacity | |
| at AC 230 V and $\cos \phi = 0.4$ | AC 2 A |
| at DC 220 V and $L/R = 0.04$ s | DC 0.2 A |
| Optocoupler | U_{max} : AC 140 V / DC 200 V U_{low} (30 mA): <0.5 V |

Type tests

Test of the Electromagnetic Compatibility (EMC)

Interferences acc. prEN 50082-2

Emissions acc. to EN 50081-1

(only for industrial use)

Mechanical tests

| | |
|---|----------------------------|
| Shock resistance acc. to IEC 6068-2-27 | 15g / 11 ms |
| Bumping acc. to IEC 6068-2-29 | 40g / 6 ms |
| Vibration strength acc. to IEC 6068-2-6 | 10...150 Hz / 0.15 mm - 2g |

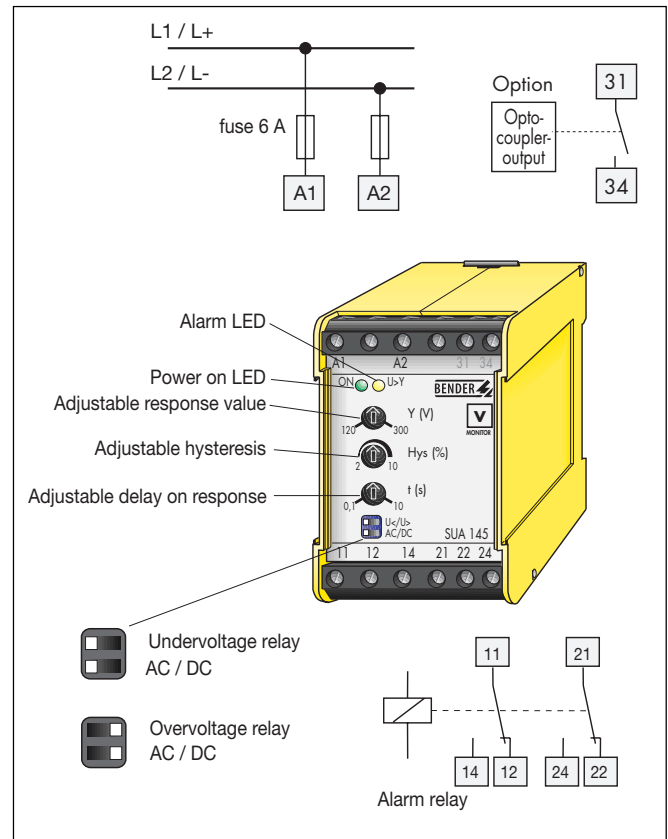
Environmental conditions

| | |
|---------------------------------------|---|
| Ambient temperature, during operation | -15°C...+55°C |
| Storage temperature range | -40°C...+70°C |
| Climatic class acc. to IEC 60721 | 3K5, except condensation and formation of ice |

General data

| | |
|-----------------------------------|--|
| Operation class | continuous operation |
| Mounting | any position |
| Type of connection | Terminal block |
| Wire cross section | |
| single wire | 0.2 ... 4 mm ² |
| fine braid | 0.2 ... 2.5 mm ² (AWG 24 - 12) |
| Rapid mounting | according to DIN EN 50 022 or screw mounting |
| Protection class acc. to EN 60529 | |
| Internal components | IP 30 |
| Terminals/with terminal covers | IP 20 |
| Type of casing | XM45 |
| Flammability class | UL94V-0 |
| Weight approx. | 210 g |

Wiring diagram



Safety instructions

Please check for correct mains voltage !

Electrical equipment is to be installed or assembled only by qualified electricians. The relevant safety precautions must be observed.

The power supply connection is to be provided with protective devices in accordance with IEC 364-4-473 to protect against short-circuit (a 6 A fuse is recommended).

In addition to this data sheet, you will find enclosed the "Important safety instructions for BENDER products" which form a constituent part of the device documentation.

Ordering details

| Type | Response value UC | Art. No. |
|----------|-------------------|-------------|
| SUA145 | 10 - 30 V | B 9301 5508 |
| | 20 - 60 V | B 9301 5509 |
| | 50 - 150 V | B 9301 5510 |
| | 120 - 300 V | B 9301 5511 |
| SUA145-1 | 20 - 60 V Opto | B 9301 5507 |

Ordering details for screw mounting:

| Type | Art. No. |
|----------------|----------|
| Mounting plate | 300102 |