



for monitoring line to neutral voltages in 3/N AC systems

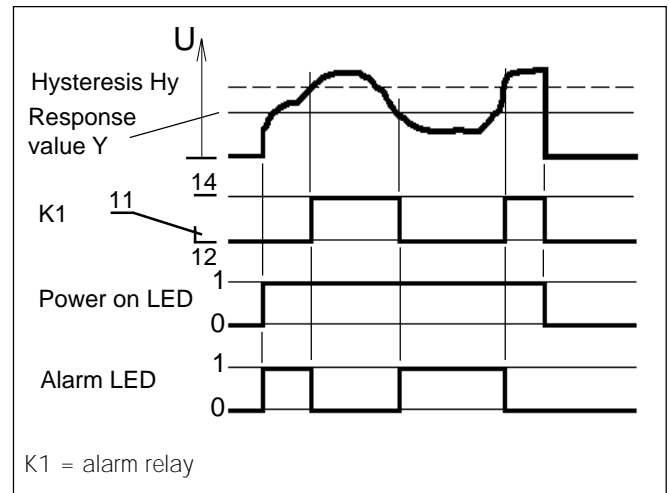


- electronic measuring relay
- no additional supply voltage required
- impulse voltage and electrical disturbance proof according to VDE and IEC
- alarm relay with two change over contacts
- built-in power on LED and alarm LED
- continuously adjustable alarm points
- compact 45 mm casing

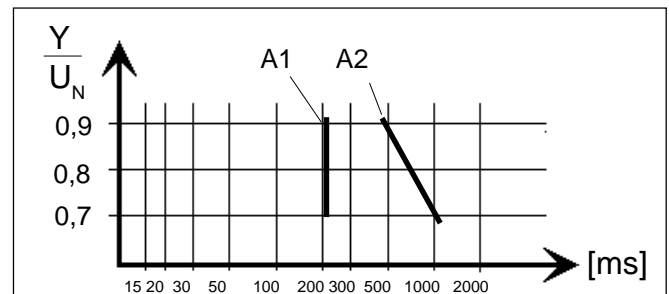
## Function

If one, two or all line to neutral voltages fall below the adjusted response value "Y", the alarm relay releases out and the red alarm LED signals "UVW → N<Y".

If the adjusted response value and additionally the fixed hysteresis "Hy" is exceeded the alarm relay reacts and the red alarm LED extinguishes.

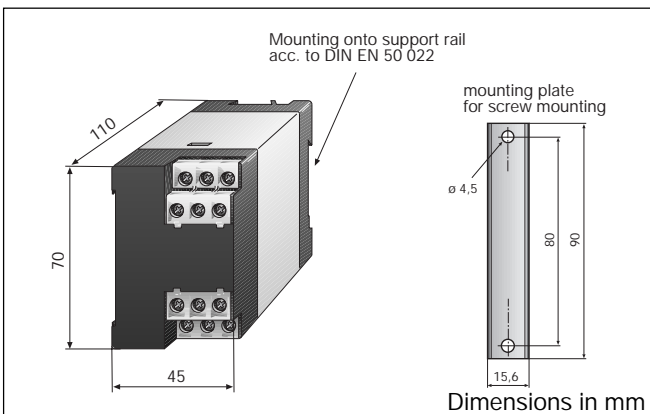


## Delay on response

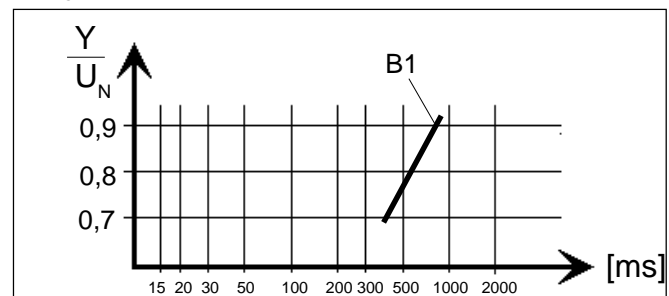


A1 = Changing from Un to 0 V  
A2 = Changing from Un to 0,5 x Un

## Dimension diagram



## Delay on release



B1 = Changing from 0V to Un

## Technical data SUD140

### Insulation coordination acc. to IEC 60664-1:

Rated insulation voltage	AC 440 V
Rated impulse withstand voltage/ contamination level	4 kV/3
Dielectric test acc. to IEC 60255	2.5 kV

### System being monitored

Nominal voltage of the system Un	3 / N AC 40...100 Hz 100/58 ... 120/69 V 200/115 ... 240/132 V 400/230 ... 440/254 V
Operating range	0 ... 1.15 x Un

### Supply voltage

Supplied by the system being monitored	
Self-consumption	2.5 VA

### Response values

Response value steplessly adjustable	40 ... 60 V, 80 ... 120 V or 160 ... 240 V
Repeat accuracy	1.5 %
Temperature influence	< 0.05 % / °C
Frequency influence	< 0.1 % / Hz
Switching hysteresis approx.	5 %

### 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
Limited making capacity	UC 5 A
Limited 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
Operating principle	N/C operation

### Type tests

#### Test of the Electromagnetic Compatibility (EMC):

##### Immunity against electromagnetic

##### Interferences acc. to EN 50081-2:

##### Impulse voltage and electrical disturbance test acc. to IEC 60255:

Impulse voltage test acc. to IEC 60255-5	class III
Electrical disturbance test acc. to IEC 60255-5	class III

##### Emissions acc. to EN 50081-2:

Emissions acc. to EN 55011/CISPR11	class B <sup>1)</sup>
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##### Mechanical tests:

Shock resistance acc. to IEC 6068-2-27	15 g/11 ms
Bumping acc. to IEC 6068-2-29	40 g/6 ms
Vibration strength acc. to IEC 6068-2-6	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 60721	3K5, except condensation and formation of ice

### General data

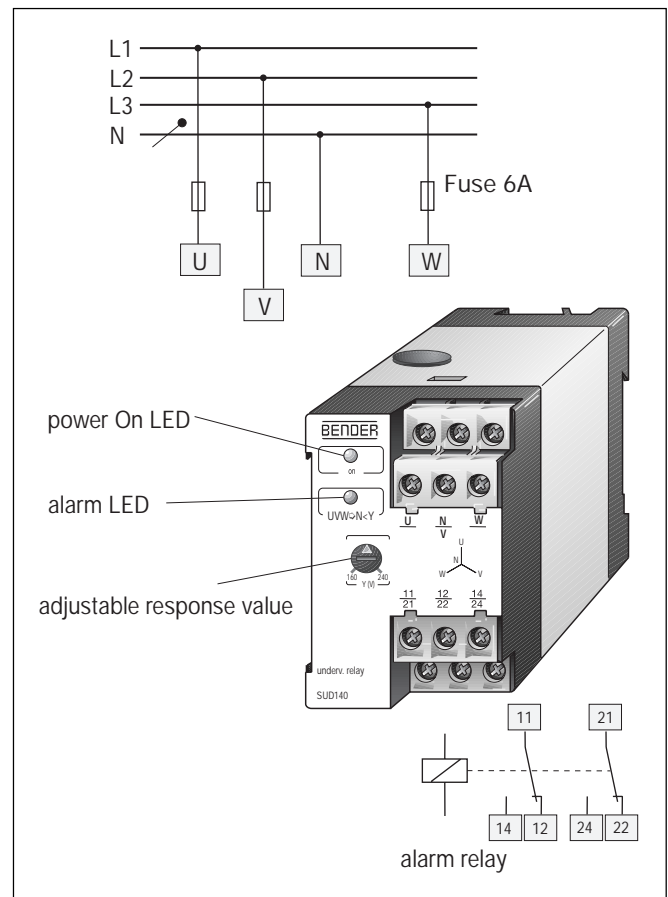
Operation class	continuous operation
Mounting position	any position
Type of connection	terminal screws with self-lifting clamp-washers

Wire cross section	
single wire	2 x (1 ... 1,5 mm <sup>2</sup> ) 16 AWG
fine braid	2 x (0,75 ... 1,5 mm <sup>2</sup> ) 16 AWG
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	300 g

<sup>1)</sup> 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	Rated system voltage	Response value	Art.-No.
SUD140	3 / N AC 40...100 Hz	40 ... 60 V 80 ... 120 V 160 ... 240 V	B 933 556
	100/58...120/69 V		B 933 504
	200/115...240/132 V		B 933 505
	400/230...440/254 V		

Other values on request

## Ordering details for screw mounting

Type	Art. No.
Mounting plate	R 300 102

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