

Undervoltage relays SUD140

for 3NAC systems



SUD140

Undervoltage relays for 3NAC systems without external supply voltage



Product description

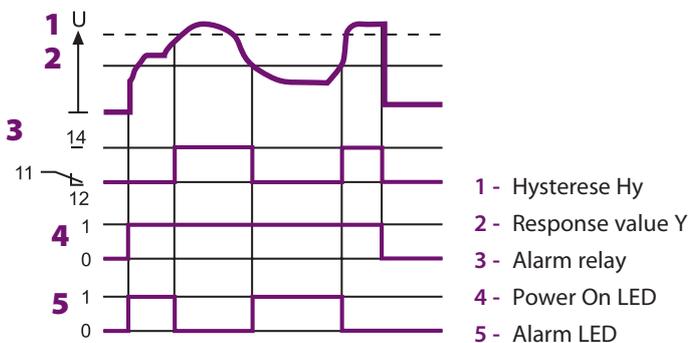
The undervoltage relays of the SUD140 series are designed to monitor three-phase AC systems with N conductor for undervoltage. External supply voltage is not required. The response value is set via a potentiometer.

Typical applications

- Monitoring of the power supply of motors and electrical installations
- Monitoring of loads
- Switching on and switching off at a certain voltage level
- Monitoring of stand-by and emergency supply systems
- Supply voltage monitoring of portable loads

Function

When supply voltage is applied, the alarm relay works in N/C operation (relay energized). When the phase-to-phase voltage of one, two or all conductors drops below the set response value "Y", the alarm relay de-energizes and the alarm LED "UVW<Y" lights up. If the measured quantity exceeds the response value plus hysteresis, the alarm relay switches back to its original state.



Device features

- Undervoltage relays for 3NAC systems
- Without external supply voltage
- 3 device variants, adjustable response values
 - 40...60 V (3NAC 100...115 V)
 - 80...120 V (3NAC 200...220 V)
 - 160...240 V (3NAC 380...440 V)
- LEDs: power On, Alarm
- Alarm relay with two potential-free changeover contacts
- 45 mm enclosure

Note

In case of new installations refer to VMD421H.

Approvals



Standards

The SUD140 series complies with the requirements of the device standards: IEC 60255-6.

Ordering information

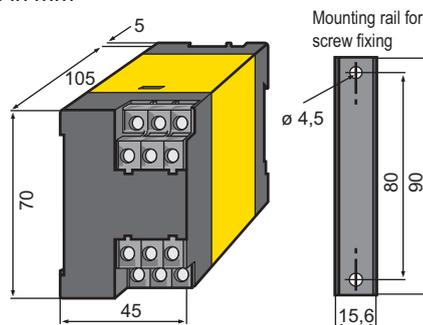
Nominal system voltage U_n	Response value	Type	Art. No.
3NAC 100...115 V	40...60 V	SUD140	B 933 556
3NAC 200...220 V	80...120 V	SUD140	B 933 504
3NAC 380...440 V	160...240 V	SUD140	B 933 505

Accessories

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

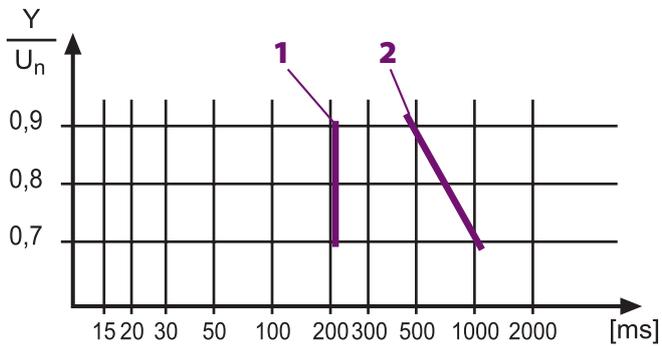
Dimension diagram X140

Dimensions in mm



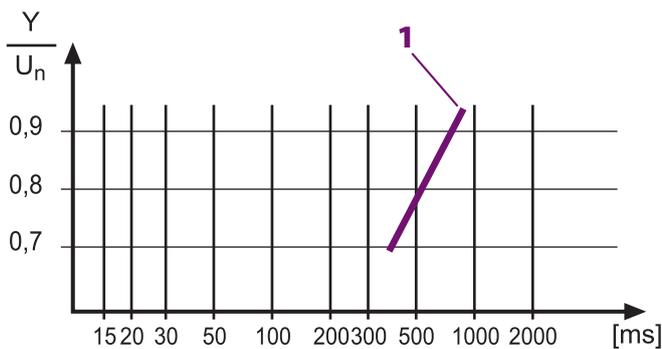


Response delay



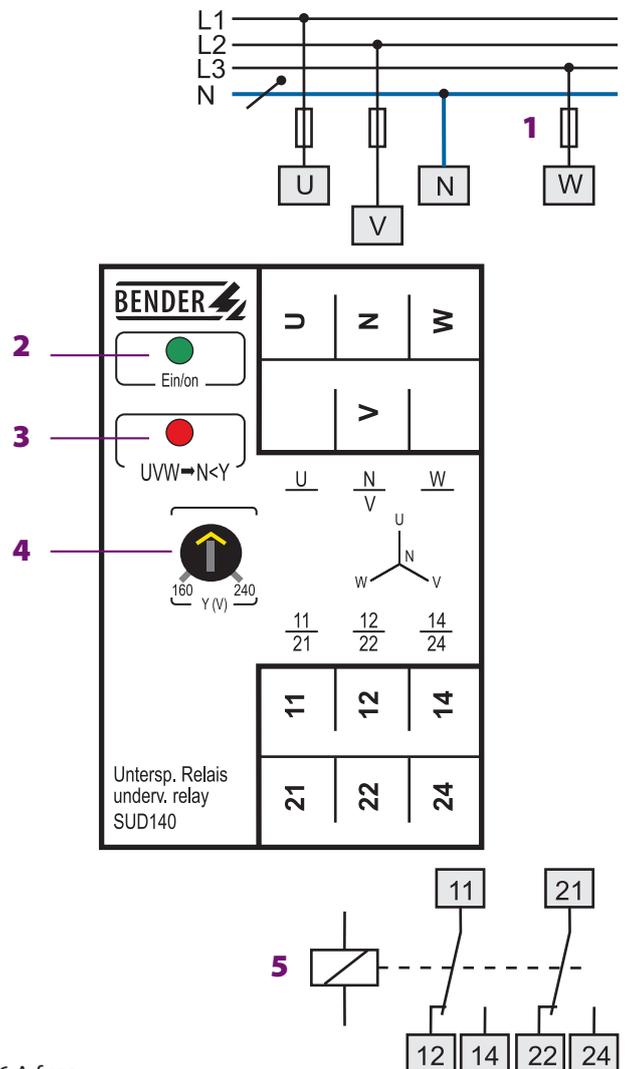
- 1 - Change from U_n to 0 V
- 2 - Change from U_n to $0.5 \times U_n$

Delay on release



- 1 - Change from 0 V to U_n

Wiring diagram



- 1 - 6 A fuse
- 2 - Power On LED "Ein/on"
- 3 - Alarm LED "UVW"
- 4 - Adjustable response value "Y(V)"
- 5 - Alarm relay

Technical data voltage relays SUD140

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 440 V
Rated impulse voltage/pollution degree	2.5 kV/3

Supply voltage

Supply voltage U_s	none
Power consumption	≤ 2.5 VA

Measuring circuit

Nominal system voltage U_n	3NAC 100...115 V
	3NAC 200...220 V
	3NAC 380...440 V

Operating range of U_n	$0 \dots 1.15 \times U_n$
Frequency f_n	50...400 Hz
Response values (L-N)	40...60 V
	80...120 V
	160...240 V

Response time t_{an}	see diagram
Hysteresis	approx. 5 %
Delay on release	see diagram
Repetition accuracy	± 1.5 %
Temperature influence	< 0.05 %/°C
Frequency influence	< 0.1 %/Hz

Switching elements

Number of changeover contacts	1 x 2
Operating principle	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	-15...+50 °C
Ambient temperature (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 ferrules	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 fixing	with mounting rail
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Operating manual	BP301004
Weight	≤ 300 g



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