

SUR353Z

Undervoltage relays for 3AC or 3NAC systems without external supply voltage



SUR353Z

Device features

- Undervoltage monitoring for 3AC / 3NAC systems
- Without external supply voltage
- Adjustable response value $0.7 \dots 0.95 \times U_n$
- Nominal system voltages 3AC 100 V, 230 V, 400 V, 415 V, 500 V, 690 V
- Adjustable response delay $0.5 \dots 5$ s
- Alarm LED
- Alarm relay with two potential-free changeover contacts

Approvals



Product description

The relays of the SUR353Z series are designed to monitor the voltage of three-phase AC systems. Neutral conductor connection is not required, hence the relays are suitable for 3AC and 3NAC systems. External supply voltage is not required.

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 exceeds the set response value "Y", the alarm relay de-energizes and the alarm LED "U_n" goes out. If the measured quantity drops below the release value, the alarm relay switches back to its original state. Supply voltage and measuring voltage are galvanically separated.

Note

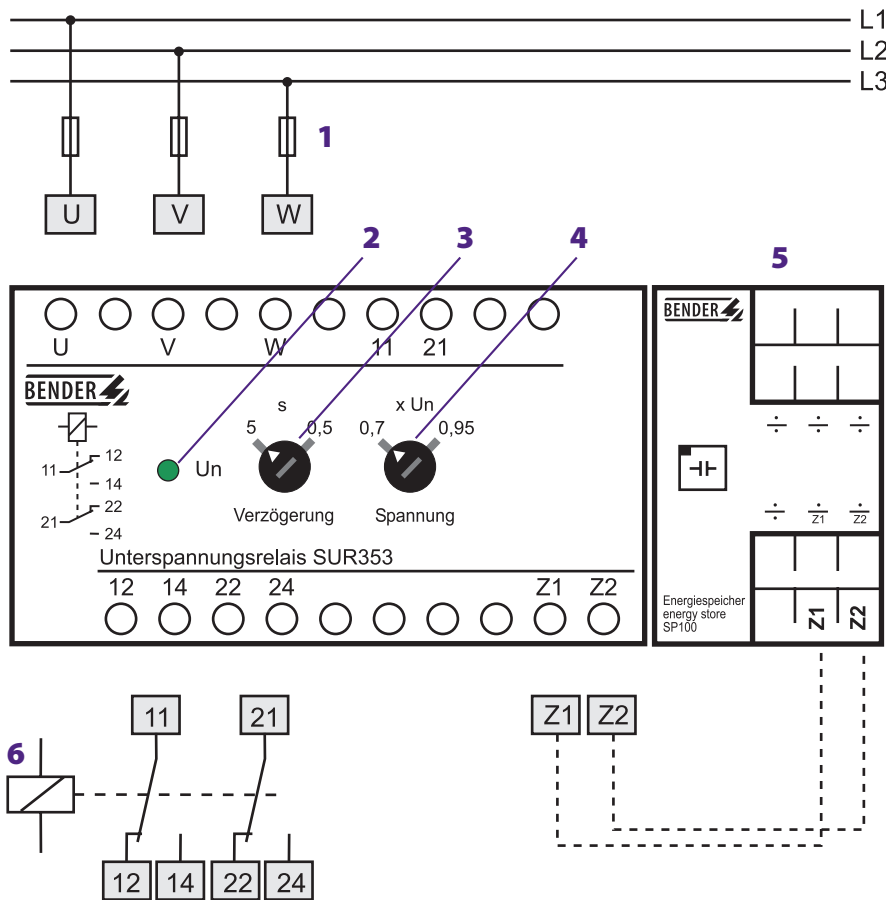
False alarms resulting from operational measurement errors can be suppressed by setting a time delay. In case of complete system failure, the time delay is not effective, except for the device operating time. If the delay function is to be maintained in case of complete system failure, the energy backup SP100 is recommended to be used.

Technical data undervoltage relays SUR353Z

Insulation coordination acc. to IEC 60664-1		Environment / EMC	
Rated insulation voltage	AC 690 V	EMC immunity	acc. to IEC 61000-6-2
Rated impulse voltage/pollution degree	6 kV/3	EMC emission	acc. to IEC 61000-6-4
Supply voltage		Shock resistance IEC 60068-2-27 (during operation)	15 g/11 ms
Supply voltage U _s	none	Bumping IEC 60068-2-29 (during transport)	40 g/6 ms
Power consumption	≤ 5 VA	Vibration resistance IEC 60068-2-6 (during operation)	1 g / 10...150 Hz
Measuring circuit		Vibration resistance IEC 60068-2-6 (during transport)	2 g / 10...150 Hz
Nominal system voltage U _n	see ordering information	Ambient temperature, during operation	-10...+50 °C
Operating range of U _n	0.5...1.3 x U _n	Ambient temperature during storage	-20...+70 °C
Frequency f _n	50/60 Hz	Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)
Response values	0.7...0.95 x U _n	Other	
Response delay t	0.5...5 s	Operating mode	continuous operation
Hysteresis	approx. 2 %	Mounting	any position
Delay on release	approx. 200 ms	Connection	Flat terminals with self-lifting clamp washers
Switching elements		Connection properties	
Number of changeover contacts	1 x 2	single wire	2 x (1...1.5) mm ²
Operating principle	N/C operation	flexible with end ferrules	2 x (0.75...1.5) mm ²
Electrical service life, number of cycles	12000	Degree of protection, internal components (IEC 60529)	IP50
Contact class IEC 60255 Part 0-20	IIB	Degree of protection, terminals/with terminal covers (IEC 60529)	IP10/IP20
Rated contact voltage	AC 250 V/DC 300 V	Screw fixing	refer to dimension diagram
Limited making capacity	AC/DC 5 A	DIN rail mounting acc. to	IEC 60715
Breaking capacity	2 A, AC 230 V, cos phi 0.4 0.2 A, DC 220 V, L/R = 0.04 s	Flammability class	UL94V-0
		Product standard	IEC 60255-6
		Operating manual	BP301006
		Weight	≤ 700 g



Wiring diagram



- 1 - 6 A fuse
- 2 - Alarm LED "U_n", lights under normal conditions and goes out in the event of undervoltage and system failure
- 3 - Adjustable response delay "s"
- 4 - Adjustable response value for undervoltage "xU_n"
- 5 - SP100 energy backup
SP100 energy backup for a duration of max. five seconds. An additional means to delay the time in the event of complete system failure.
- 6 - Alarm relay in N/C operation

3.1

Ordering information

Type	Nominal system voltage U _n	Art. No.
SUR353Z	3AC 100 V	B 933 601
SUR353Z	3AC 230 V	B 933 176
SUR353Z	3AC 400 V	B 933 667
SUR353Z	3AC 415 V	B 933 623
SUR353Z	3AC 500 V	B 933 051
SUR353Z	3AC 690 V	B 933 611
Other voltages on request		
SP100	Energy backup	B 935 700

Dimension diagram X200 Dimensions in mm

