Undervoltage relays SUR353Z

for 3AC or 3NAC systems

TDB301006en/07.2011

SUR353Z

Device features

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

Approvals

AE25

Product description

The SUR353Z series relay is designed to monitor the voltage of three-phase AC systems. Neutral conductor connection is not required, hence the relay is 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 energised). When the phase-to-phase voltage of one, two or all conductors exceeds the set response value "Y", the alarm relay de-energises and the alarm LED "U_n" goes out after the response delay has elapsed. 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.

Standards

The SUR353Z series complies with the requirements of the device standards: IEC 60255-6.

Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 690 V
Rated impulse voltage/pollution degree	6 kV/3

Supply voltage

Supply voltage U_S	not required
Power consumption	≤ 5 VA

Measuring circuit

Nominal system voltage U_n	see ordering information
Operating range of U_n	0.5…1.3 x U_n
Rated frequency f_n	50/60 Hz
Response values	0.7…0.95 x U_n
Response delay t	0.5…5 s
Hysteresis	approx. 2 %
Delay on release	approx. 200 ms

Switching elements

Number of changeover contacts	1 x 2
Operating principle	N/C operation
Electrical endurance, number of cycles	12000
Contact class	IIB
Rated contact voltage	AC 250 V/DC 300 V
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 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10…150 Hz
Vibration resistance IEC 60068-2-6 (device not in operation)	2 g/10…150 Hz
Ambient temperature, during operation	-10…+50 °C
Ambient temperature, during storage	-20…+70 °C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

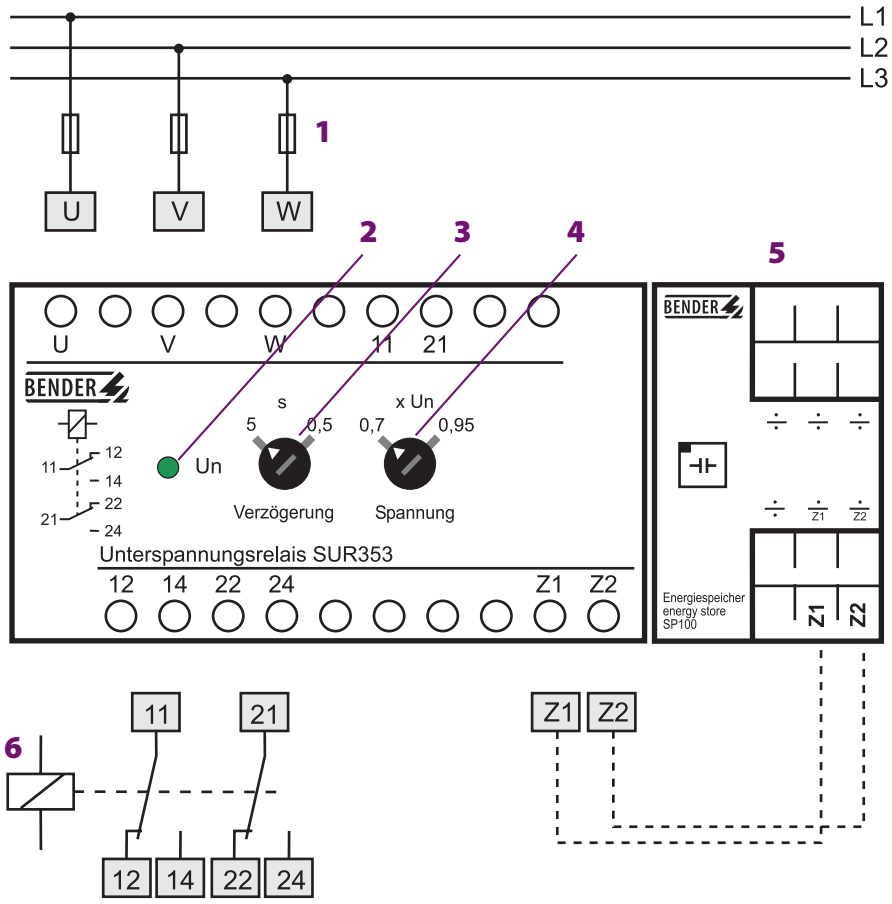
Connection

Connection	flat terminals with self-lifting clamp washers
Connection properties	
single wire	2 x (1…1.5) mm²
flexible with end ferrule	2 x (0.75…1.5) mm²

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 mounting	refer to dimension diagram
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
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
4 - Adjustable response value for undervoltage
5 - SP100 energy backup
An additional means to delay the time for approximately 5 s in the event of complete system failure
6 - Alarm relay in N/C operation

Ordering information

Nominal system voltage U_n	Typ	Art.-Nr.
3AC 100 V	SUR353Z	B 933 601
3AC 230 V	SUR353Z	B 933 176
3AC 400 V	SUR353Z	B 933 667
3AC 415 V	SUR353Z	B 933 623
3AC 500 V	SUR353Z	B 933 051
3AC 690 V	SUR353Z	B 933 611

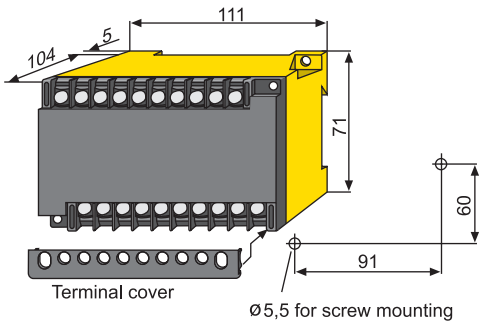
Other voltages on request

Suitable system components

Type designation	Type	Art. No.
Energy backup	SP100	B 935 700

Dimension diagram X200

Dimensions in mm



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