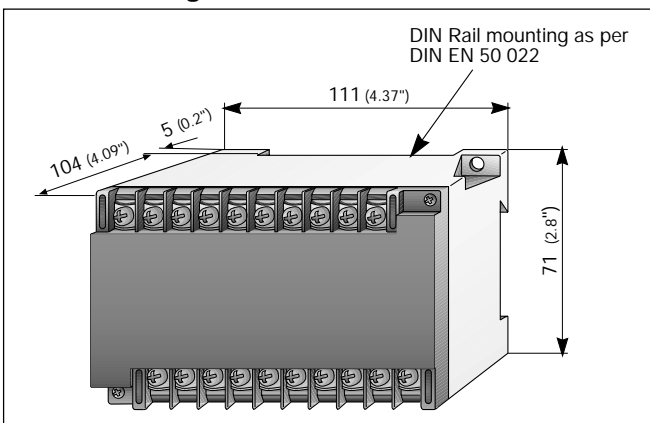


- electronic measurement relay
- no additional supply voltage necessary
- response value and time delay steplessly adjustable
- output relay with two change-over contacts
- incorporates protection for noisy environments
- combined operation- and indication LED

Dimension diagram



Product description

The SUR353Z monitors 3 phase AC systems and indicates low voltage conditions. The device can be used on both, 3 and 4 wire systems.

The device is derived from the system to be monitored.

The response values for under voltage and time delay are adjustable. The evaluation circuitry is galvanically separated from the monitored system. Special filters suppress noise transmissions from the system.

The actual values of the line-to-line voltages will be measured through special transformers inside the unit. The secondary signal will be filtered and then fed into an electronic evaluation circuitry. The measured value will be compared to the preset alarm values for undervoltage.

The output relay with two change-over contacts can be used for indication and interruption purposes. The relay is used in normally closed operation.

The SUR353 device is available with and without time delay:
SUR353 with time delay
SUR353Z without delay

Function

The line-to-line voltages are measured and evaluated electronically. The value is compared to the pre - adjusted response value.

The response value for undervoltage is adjustable. If the actual value drops below the limit, the output relay changes state. A time delay can be set steplessly from 0.5 ... 5 seconds.

If the measured voltages return to normal limits, the relay will automatically reset. A switch hysteresis of about 2% of the response value is to be noticed in this matter.

Notes

The time delay function stays operable in case of a single phase. A total system shut down will disable the time delay function except for the reaction time of the device. If the time delay function is requested, even in case of a system shut down, an energy saving device, type SP100, must be used with the SUR353(Z).

Technical data

Nominal insulation voltage	690 V
Contact circuits	AC 250 V
Insulation group	C
Test voltage	6 kV/ 3

Nominal voltage U_N	3AC50...60Hz 690/500/400/220/100 V
Operating range (U_{N1})	0.5...1.3 x U_N
Max. self-consumption approx.	5 VA

Response value adjustable	
Under voltage	0.95...0.7 U_N
Time delay adjustable	
SUR353Z:	0,5 ... 5 s
SUR353:	200 ms
Switching hysteresis adjustable	2 %

Switch components	
SUR353(Z)	two DPDT
Nominal contact voltage	AC 250 V / DC 300 V
Permanent current	5 A
Break capacity	
at AC 230 V and $\cos. \phi = 0,4$	2 A
at DC 220 V	0.2 A
SUR353(Z)	NC operation (Fail save mode)

Admissible ambient temperature	
when operating	-10°C ... +50°C
when stored	-20°C ... +70°C
Mounting	indifferent

Type of connection	terminal screws with self-lifting clamp-washers
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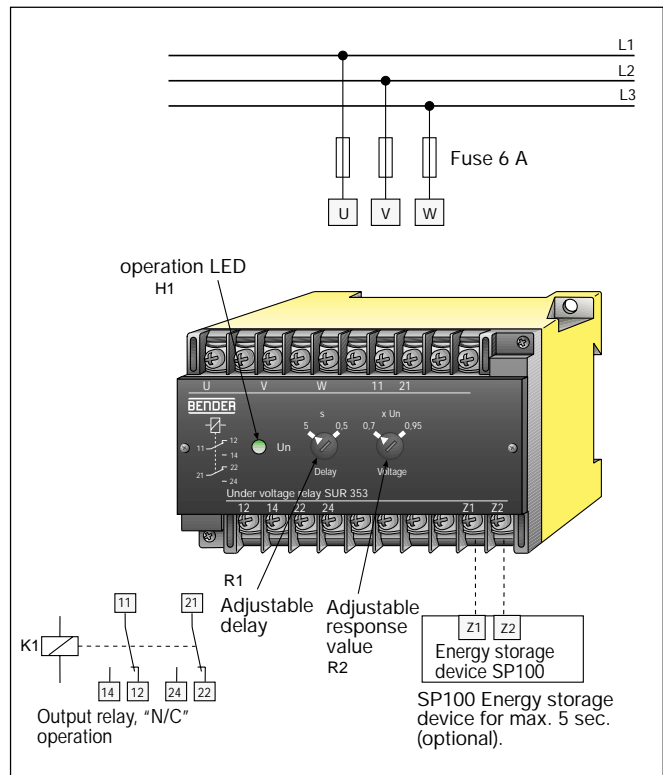
Wire cross section	
single wire	2x (1 ... 1.5 mm ²) 16 AWG
fine braid with end sleeve	2x (0.75 ... 1.5 mm ²) 16 AWG

Protection class according to DIN 40 050	
Internal components	IP 50
Terminals	IP 10
with terminal covers	IP 20

Casing	
Inflammability class according to	UL 94 V - 0
Mounting	DIN Rail or screw mounting*

Weight	approx. 700 g
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Wiring diagram



Legend to wiring diagram SUR353/ 353Z

- K1 Relay output indicates under voltage
- H1 LED, indicates under voltage ($<U_N$)
- R1 Adjustable time delay (only SUR358Z)
- R2 Adjustable under voltage alarm setting

Please note

The time delay will still operate, even if a single phase should shut down. The time delay will not operate if the complete system shuts down. If a time delay should be required during total power outage, it is necessary to add a SP100 energy storage device to the SUR353(Z).

Ordering details

Type	Delay (sec)	Nominal insulation voltage U_N	Art.-No.
SUR353	without	3AC 690V	933 692
		3AC 500V	933 050
		3AC 400V	933 628
		3AC 220V	933 150
		3AC 100V	933 600
SUR353Z	0,5 ... 5	3AC690V	933 611
		3AC500V	933 051
		3AC415V	933 623
		3AC400V	933 667
		3AC230V	933 151
3AC100V	933 601		
SP100			935 700

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