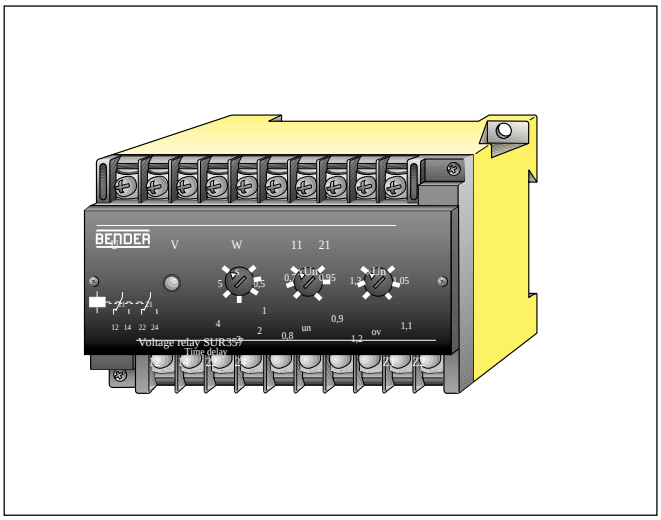
Over or Under Voltage relay

SUR357
SUR358

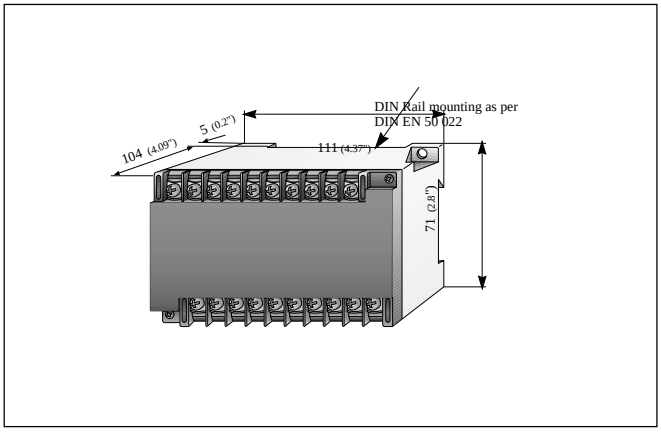
MONITOR

- Under and over voltage relay for 3 phase systems up to 660VAC



- Combined over and undervoltage monitoring for up to 660VAC in 3 phase systems
- For 3 and 4 wire systems
- No external supply voltage required
- 2 LED's for over and undervoltage alarm indication
- On -LED
- Adjustable alarm settings
- Adjustable response time delay 0.5...5sec
- Two DPDT relays for over and under voltage alarm indication

Dimensions



Devices & Function

SUR357 Combined over and under voltage relay, one indicating LED, one alarm relay and two adjustable set points for over and undervoltage indication.

SUR357Z Same as SUR357, with additional adjustable response time delay.

SUR385-9 Two under voltage settings, two indicating LED's for under voltage 1 and 2, two separate alarm relays, under voltage 1 relay in N.D. condition, under voltage relay 2 in N.E. condition, two dials for under alarm set points.

SUR358Z Same as SUR358, with additional adjustable response time delay.

Operational Information

The voltage relays SUR357(Z) and SUR358(Z) monitor 3 phase systems for under and over voltage conditions. They can be connected to both, three and four wire systems.
The supply and measuring circuitries are galvanically isolated from the system to be monitored. Special filters suppress incoming noise and voltage peaks from the system.
The actual values of the line-to-line voltages will me measured through measuring transformers inside the unit. The secondary signal will be filtered and fed into an electronic evaluation circuitry. The actual value will be compared to the preset values for under and over voltage.

SUR357(Z) - In case of an increase or decrease of the preset values, the two alarm relays (DPDT) will change state. Please note that the relays are in a fail safe state.

SUR358(Z) - In case of an increase or decrease of the preset values, one of the two alarm relays (DPDT) will change state . The incoming signal will be filtered, evaluated and then be fed to either the under - or the over voltage alarm relay.
Under voltage alarm - relay K2(DPDT) changes state - fail safe mode N.E. mode.
Under voltage alarm - relay K1 (DPDT) changes state - N.D. mode
Red alarm LED's will simultaneously indicate an increase or decrease of the voltage by signaling either <UN or >UN.

The units reset automatically and with no time delay as soon as the measured values return back to their nominal levels. Please note that there will be a preset hysteresis of 2%.

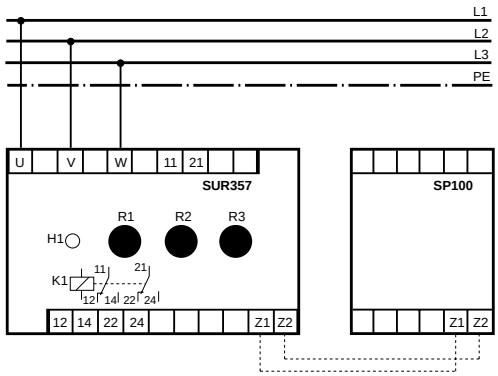
Please note
The terminal strips on the SUR...series incorporate a terminal strip cover. The cover should be used to prevent accidental contacts with hot leads.

Technical data

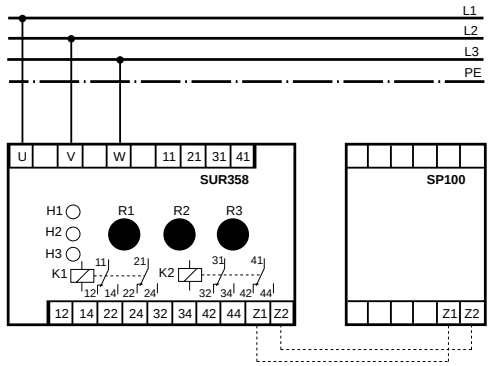
Nominal insulation voltage	660 V
Contact circuits	AC 250 V
Insulation group	C
Measuring circuitry	360V
Test voltage	2500 V
Nominal voltage U_N	3AC50...60Hz 660/500/440/380/220/ 100V
Tolerance	0.5..1.3 X U_N
Max. self-consumption approx.	6 VA
Response value adjustable	
Under voltage	0.6...0.95U_N
Under voltage 2	0.8 ... 1.0U_N
Switching hysteresis adjustable	2 ... 10 %
Response delay adjustable	0.5 ... 5 sec
Switch components	
SUR357(Z)	two DPDT
SUR358(Z) K1/K2	two DPDT each
Switch capacity max.	1100 VA
Nominal contact voltage	230 V
Permanent current	5 A
Break capacity	
at AC 230 V and cos. phi = 0,4	3.8 A
at DC 110 V and L/R = 0	0.38 A
SUR357(Z)	NO operation
SUR358(Z) Under voltage	NO operation
Over voltage	NC operation (Fail safe mode)
Admissible ambient temperature	
when operating	-15°C ... +50°C
when stored	-20°C ... +70°C
Mounting	indifferent
Type of connection	terminal screws with self-lifting clamp-washers
Wire cross section	
single wire	2x (1 ... 1.5 mm²) 16 AWG
fine braid with end sleeve	2x (0.75 ... 1.5 mm²) 16 AWG
Protection class according to DIN 40 050	
Internal components	IP 50
Terminals	IP 10
with terminal covers	IP 20
Casing	
Behavior in fire according to	UL 94 V - 0
Fixing	DIN Rail or screw mounting*
Weight	approx. 250 g

Ordering Guide			
Type	Time delay (sec)	Nominal voltage U_N	Art.-Nr.
SUR357	None	3AC660V	933 002
		3AC500V	933 052
		3AC380V	933 103
		3AC220V	933 152
		3AC100V	933 602
SUR357Z	0,5 ... 5	3AC660V	933 003
		3AC500V	933 053
		3AC380V	933 104
		3AC220V	933 153
		3AC100V	933 603
SUR358	None	3AC660V	933 004
		3AC500V	933 054
		3AC440V	933 617
		3AC380V	933 105
		3AC220V	933 154
		3AC100V	933 604
SUR358Z	0,5 ... 5	3AC660V	933 005
		3AC500V	933 055
		3AC380V	933 106
		3AC220V	933 155
		3AC100V	933 605
SP100			935 700

Wiring diagram



SUR357 ... series



SUR358 ... series

Legend to wiring diagram SUR357/ 358Z

K1 Relay output indicates undervoltage, N.D, condition

K2 Relay output indicates over voltage, N.E. condition (Fail safe)

H1 LED, indicates over voltage (>U_N).

H2 LED, indicates normal operation (U_N).

H3 LED, indicates undervoltage (<U_N).

R1 Adjustable time delay (only SUR358Z).

R2 Adjustable undervoltage alarm setting.

R3 Adjustable over 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 SUR357(Z) or SUR358(Z).

BENDER Industrial Products
700 Fox Chase, Coatesville PA 19320
Tel. (800) 356-4266 - Fax. (610) 383-7100
www.benderrelay.com