

# 3-Phase voltage relay SVR-3 & SPR-415

## Instruction Manual



### General

#### ■ Applications

- Control for connection of moving equipment(site equipment, agricultural equipment,refrigerated trucks).
- Control for protection of persons and equipment against the consequences of reverse running.
- Normal/emergency power supply switching.
- Protection against the risk of a driving load(phase failure).

#### ■ Function Features

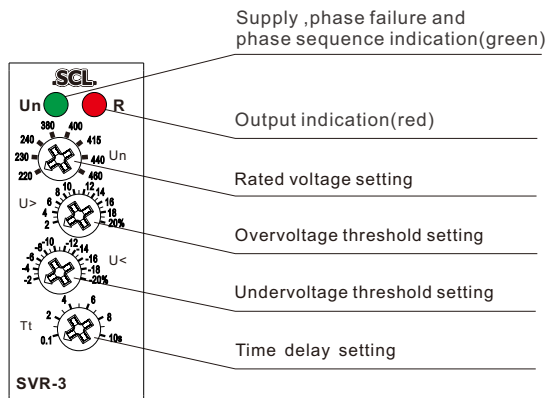
- Controls its own supply voltage(True RMS measurement).
- Set 8-level rated operating voltage through knob.
- Measuring frequency range:45Hz-65Hz.
- Voltage measurement accuracy<1%.
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

Table1

Function code	Over-voltage	Under-voltage	Asymmetry	Delay time	Phase sequence	Phase failure
SPR-415					●	●
SVR-3	2%...20%	-20%...2%	8%	0.1s...10s	●	●

Note:●the function is available

### Panel Diagram



Note:

$$Asy = \frac{U_{max} - U_{min}}{U_{avr}} \times 100\%$$

$$U_{avr} = \frac{U_1 + U_2 + U_3}{3}$$

$$U_{max} = \text{Max}(U_1, U_2, U_3)$$

$$U_{min} = \text{Min}(U_1, U_2, U_3)$$

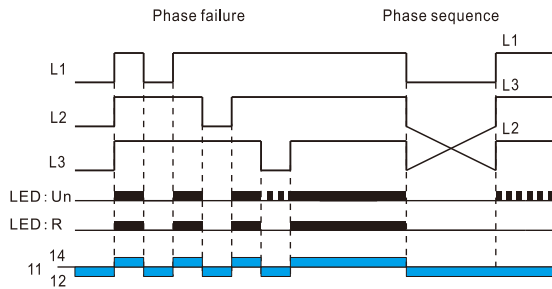
### Technical parameters

Technical parameters	
Function	Monitoring 3-phase voltage
Monitoring terminals	L1-L2-L3
Supply terminals	L1-L2
Voltage range	220-230-240-380-400 -415-440-460(P-P)
Rated supply frequency	45Hz-65Hz
Measuring range	176V-552V/415V
Threshold adjustment voltage	2%-20% of Un selected
Adjustment of asymmetry threshold	5%-15%
Hysteresis	2%
Phase failure value	70% of Un selected Min=165V
Time delay	Adjustable 0.1s-10s, 10%
Measurement error	≤1%
Run up delay at power up	0.5s time delay
Konb setting accuracy	10% of scale value
Supply indication	green LED
Output indication	red LED
Reset time	1s
Output	1×SPDT
Current rating	10A/ AC1
Switching voltage	250VAC/24VDC
Min.breaking capacity DC	500mW
Temperature coefficient	0.05%/°C, at=20°C(0.05%°F , at=68°F)
Mechanical life	1×10 <sup>7</sup>
Electrical life(AC1)	1×10 <sup>5</sup>

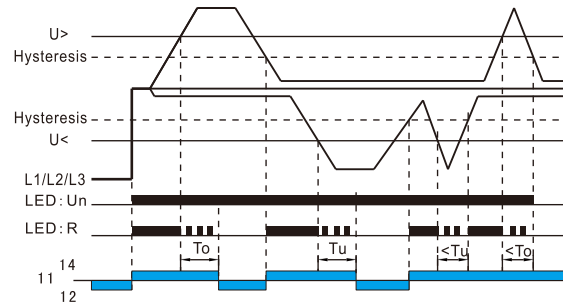
Operating temperature	-20°C to +55°C ( -4°F to 131°F )
Storage temperature	-35°C to +75°C ( -22°F to 158°F )
Mounting/DIN rail	Din rail EN/IEC 60715
Protection degree	IP40 for front panel/IP20 terminals
Operating position	any
Overvoltage category	III.
Pollution degree	2
Max. cable size(mm <sup>2</sup> )	solid wire max.1×2. 5or2×1. 5/with sleeve max.1×2. 5(AWG 12)
Dimensions	90×18×64mm
Weight	64g
Standards	EN 60255-1,IEC60947-5-1

## Functions Diagram

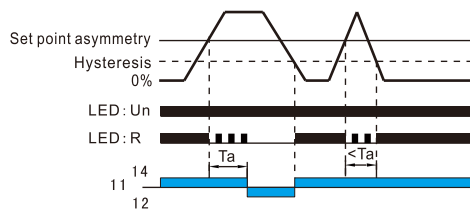
### ●Phase failure and phase sequence function diagram



### ●Overvoltage and undervoltage function diagram



### ●Asymmetry function diagram

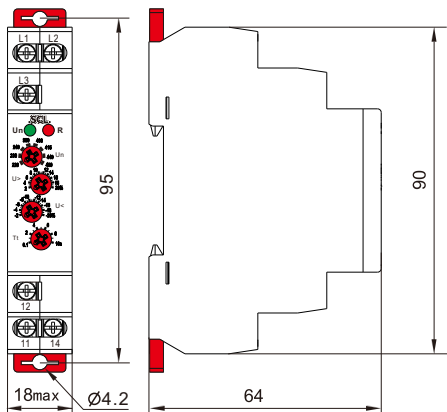


To:Overvoltage threshold tripping delay.  
Tu:Undervoltage threshold tripping delay.  
Ta:Asymmetry threshold tripping delay.

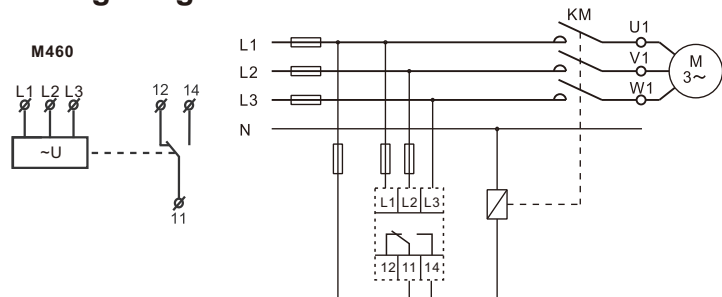
#### NOTE:

1. In case of phase fault at power supply terminals (L1 and L2), the function LED would not make indication.
2. If the Un switch position is changed while the device is operating, all the LEDs flash, but the product continues to operate normally with the voltage selected at the time of energisation preceding the change of position. The LED's return to their normal state if the switch is returned to the original position selected prior to the last energisation.

## Dimensions(mm)



## Wiring Diagram



**Disposal of Electrical Waste**  
All electrical waste should be disposed of in compliance with current WEEE regulations.



**Caution**  
The products must be installed by qualified electricians. All and any electrical connections of the time relay shall comply with the appropriate safety standards.