

## SAFETY INSTRUCTIONS

1. The device must be installed by a qualified person,
2. Disconnect all power before working on the device. Don't touch any terminal when the power is ON.
3. Verify correct terminal connection when wiring.
4. Don't dismantle or repair the device whether it operates normally, otherwise no responsibility is assumed by producer and seller.
5. Never use the device at the site which can be invaded by corrode gas, strong sunshine light and rain.
6. Clean the device with a dry cloth.
7. Fail to follow these instructions will result in serious injury or death.

## FEATURES

- Microcontroller based.
- Protection parameters setting by knobs
- 10 rated voltage selectable:  
208-220-230-240-380-400-415-440-460-480V(3phase 3wire)  
120-127-132-138-220-230-240-254-265-277V(3phase 4wire)
- 1C/O- 8A
- LED indication for supply and output state
- 1 module Din-rail mounting

## TECHNICAL DATA

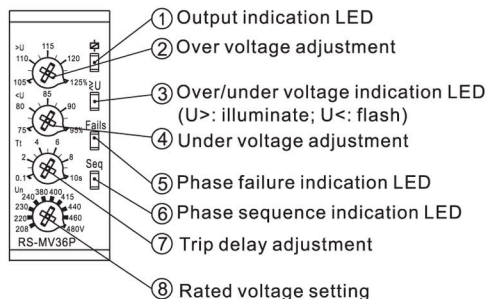
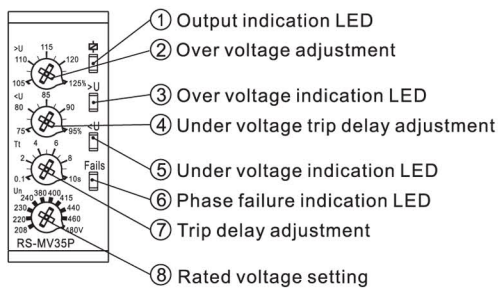
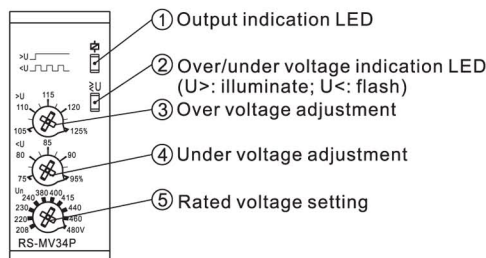
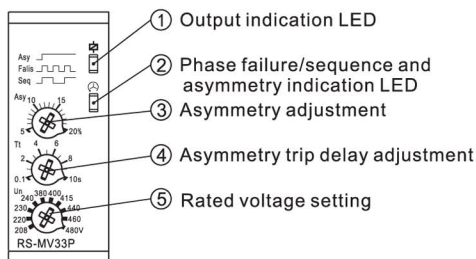
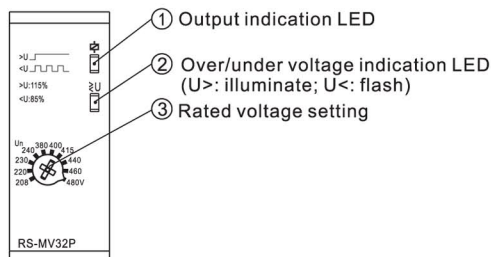
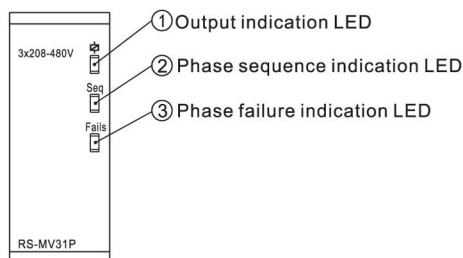
Parameters	3phase 3wire	3phase 4wire
Supply terminals	L1,L2,L3	L1,L2,L3,N
Rated voltage(Un)	208-480V	120-277V
Operation voltage range	165-528V	50-380V
Measurement range	150-552V	45-400V
Frequency	50/60Hz	
U> setting value	Adjustable:(105%-125%)xUn; Fixed:115%xUn	
U< setting value	Adjustable:(75%-95%)xUn; Fixed:85%xUn	
Asymmetry setting	Adjustable: 5%~20%; fixed: 8%	
U> trip delay	Adjustable: 0.1~10s; fixed: 2s	
U< trip delay	Adjustable: 0.1~10s; fixed: 2s	
Asymmetry trip delay	adjustable: 0.1~10s; fixed: 2s	
Hysteresis	2%	
Phase failure trip valeue	70%xUn	
Trip time for incorrect phase sequence and phase failure	<0.5s	
Measurement limit	<156V	<50V
Delay error	±10%+0.1s	
Knob setting error	1% x scale value	
Rated insulation voltage	480V	
Output contacts	1C/O	
Current rating	8A/250V AC1	
Mechanical life	10 <sup>6</sup>	
Electrical life	10 <sup>5</sup>	
Protection degree	IP20	
Pollution degree	3	
Altitude	≤2000m	
Operating temperature	-20°C~55°C	
Permissible relative humidity	≤50% at 40°C(without condensation)	
Storage temperature	-30°C~70°C	
Wire size/Torque	0.5mm ~2.5mm /0.5Nm	
Mounting	TH-35 Rail(EN60715)	

Models	U>	U<	Phase failure	Phase sequence	Asymmetry	Operation voltage selectable
RS-MV31P(N)			●	●		
RS-MV32P(N)	●	●	●	●		●
RS-MV33P(N)			●	●	●	●
RS-MV34P(N)	●	●	●	●		●
RS-MV35P(N)	●	●	●	●		●
RS-MV36P(N)	●	●	●	●	●	●
RS-MV37P(N)	●	●	●	●	●	●

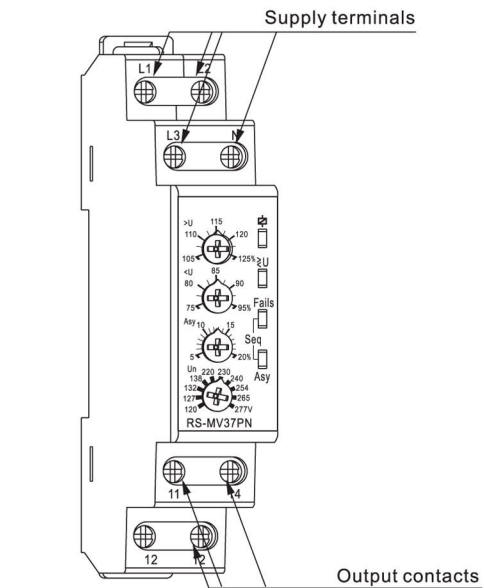
# RS-MVP(N) SERIES VOLTAGE MONITORING RELAY

Please read complete instructions prior to installation and operation of the device.

## APPEARANCE(take 3phase 3wire for example)



- ① Output indication LED
- ② Over voltage adjustment
- ③ Over/under voltage indication LED (U>: illuminate; U<: flash)
- ④ Under voltage adjustment
- ⑤ Phase failure indication LED
- ⑥ Asymmetry indication LED
- ⑦ Asymmetry adjustment
- ⑧ Rated voltage setting



## INSTALLATION

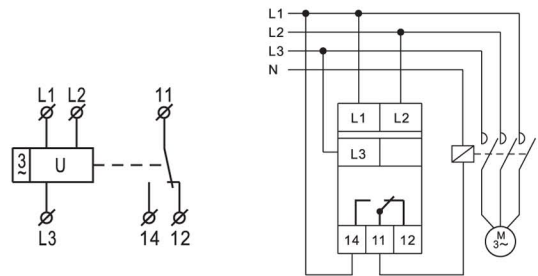
1. Set rated voltage by knob. If change the rated voltage setting after energized, four indication LEDs will flash and setting will not come into effect. It need to re-set after disconnected supply.
2. If faults detected after relay energized, the output relay stays open
3. In the event of a voltage fault, the relay opens at the end of the delay set
4. Measured voltage value  $\leq 70\% \cdot U_n$ , phase failure protective function activates. Min phase failure voltage for 3phase 3wire is 165V.
5. When L1 and L2 (3phase 3wire; L1 and N for 3phase 4wire) are disconnected from supply, indication LEDs don't light up.
6. RS-MV31P: if supply voltage is lower than 165V, output relay opens and indicate phase failure fault. When supply voltage is higher than 175V, the relay will return to normal state.

$$Asy = \frac{U_{max} - U_{min}}{U_n}$$

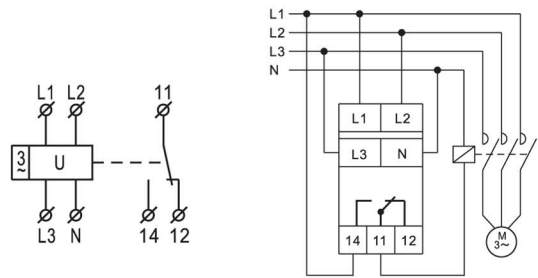
U<sub>max</sub>: Max. phase voltage;  
U<sub>min</sub>: Min phase voltage

## WIRING DIAGRAMS

### ● 3phase 3wire

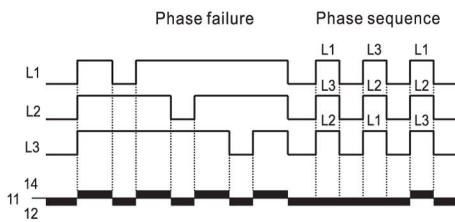


### ● 3phase 4wire

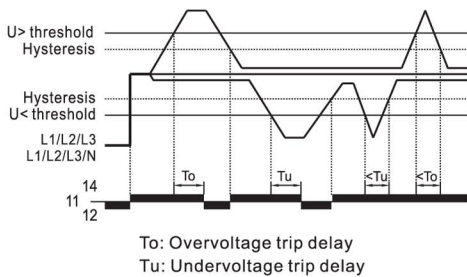


## FUNCTION DIAGRAMS

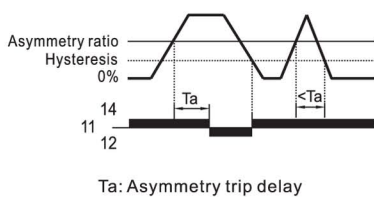
### ● Phase failure and phase sequence



### ● Overvoltage and undervoltage



### ● Asymmetry



## DIMENSIONS

