

# Voltage Monitoring Relay

## DVS-1000e

features



- True RMS Measurement
- Over Voltage Monitoring
- Under Voltage Monitoring
- Phase Failure Monitoring
- Trip LED Indicator
- Adjustable Over / Under Voltage Settings
- Adjustable Trip Delay
- Auto-reset
- Din-railed Mount

### technical data

Measurement	True RMS Ampere
Rated voltage supply	AC220V, AC230V, AC240V (3 phase 4 wire) AC380V, AC400V, AC415V (3 phase 3 wire)
Rated frequency	50 ~ 60 Hz
U > threshold range	(1.05 ~ 1.30)*Ue
U < threshold range	(0.70 ~ 0.95)*Ue
Voltage hysteresis	3 phase 4 wire: 3.5V ; 3 phase 3 wire: 6V
Trip delay	0.1 ~ 10 sec
Phase failure sensitivity	0.5*Ue
Voltage measurement error	<1% (over the whole range)
Time delay error	±10%, + 0.1sec
Knob setting accuracy	1% of the full scale
Rated insulation voltage	420V
Rated fuse rating	RT36-00 5A
Output Contact	1 C/O contact
Pollution degree	3
Electrical life	10 <sup>5</sup>
Mechanical life	10 <sup>6</sup>
Conventional thermal current	5A
Usage category	AC-15
Contact capacity	Ue/Ie:240V/1.5A, 415V/0.95A
Max. power consumption	2VA
Wiring size	0.5mm <sup>2</sup> ~ 2.5mm <sup>2</sup>
Tightening torque	0.5Nm
Altitude	≤ 2000m
Operating temp.	-5° C ~ +40° C
Relativity humidity	≤50% at 40° C (without condensation)
Storage temp.	-20° C ~ +50° C
Enclosure Protection	IP20
Weight	~ 95g
Mounting	DIN Rail mount or Screw mount
Standard	EN/IEC 60947-5-1

### parameter setting

#### Over Voltage Setting :

250 Vac~310 Vac +1%, (3 phase 4 wire)  
430 Vac~530 Vac +1%, (3 phase 3 wire)

#### Under Voltage Setting :

170 Vac~230 Vac +1%, (3 phase 4 wire)  
290 Vac~390 Vac +1%, (3 phase 3 wire)

#### Delay Time Setting :

0.1 sec~10.0 sec +1%, (Over/Under Voltage)  
2.0 s Fixed, (asymmetry trip)  
< 1.0 sec, (phase failure/phase seq. trip)

### monitoring characteristics

#### Over Voltage Indication :

LED "U>" lit up, LED "Normal" unlit.

#### Under Voltage indication :

LED "U<" lit up, LED "Normal" unlit.

#### Phase Failure Indication :

Both LED "U>" & LED "U<" will lit up (Phs.Fail.),  
LED "Normal" unlit.

### auto-reset activation

#### Over Voltage :

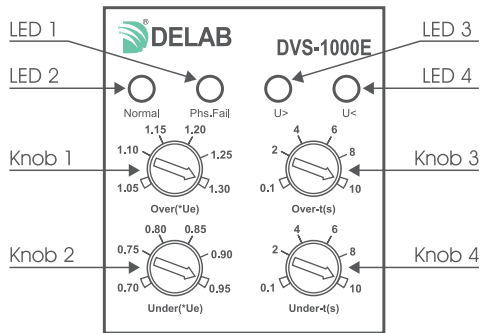
< 6Vac of Ue> (3 phase 3 wire)  
< 3.5Vac of Ue> (3 phase 4 wire)

#### Under Voltage :

> 6Vac of Ue< (3 phase 3 wire)  
> 3.5Vac of Ue< (3 phase 4 wire)

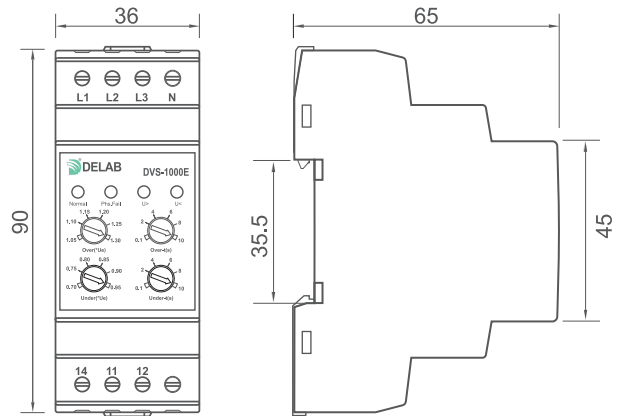
## panel description

- LED 1: Indication for phase failure
- LED 2: Indication for normal state (no faults)
- LED 3: Indication for overvoltage fault
- LED 4: Indication for undervoltage fault



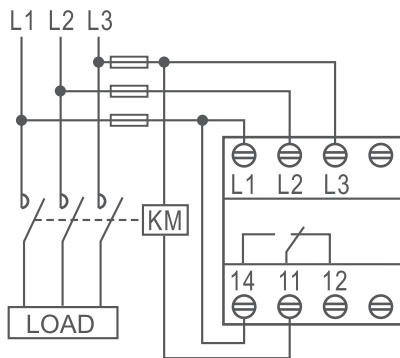
- Knob 1: Adjustment of overvoltage threshold  $U_{max}$
- Knob 2: Adjustment of undervoltage threshold  $U_{min}$
- Knob 3: Adjustment of overvoltage trip delay
- Knob 4: Adjustment of undervoltage trip delay

## casing dimension

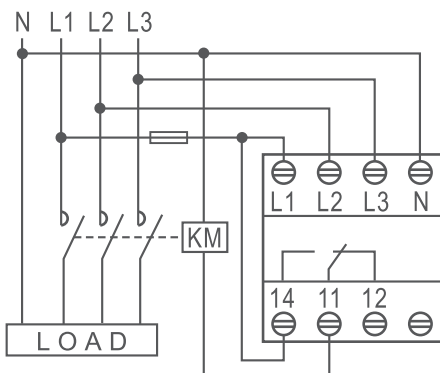


## wiring diagram

### 3 phase 3 wire

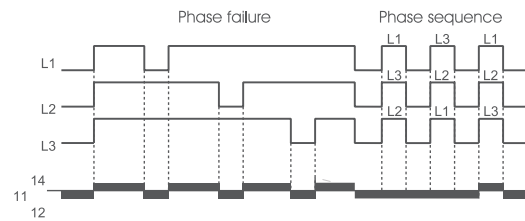


### 3 phase 4 wire

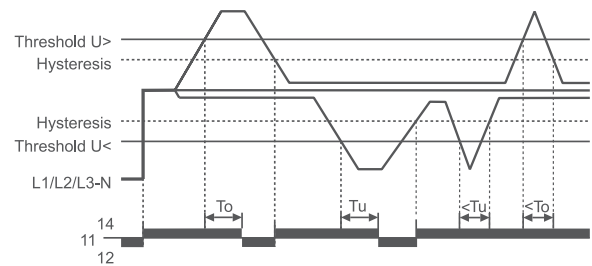


## function diagram

### Phase failure and phase sequence monitoring



### Overvoltage and undervoltage monitoring



- To: Overvoltage trip delay
- Tu: Undervoltage trip delay

## ordering information

Model	Description
DVS -1000e - M220	AC 220V (3 phase 4 wire)
DVS -1000e - M380	AC 380V (3 phase 3 wire)

Note: All measurement in mm.