



# VEO

MONITORING RELAY / 3-PHASE VOLTAGE

## V2PF480Y/277VSY01

Art.Nr.: 2100000

## V2PF480Y/277VSY01P

Art.Nr.: 2100010



- ✓ Monitoring of phase sequence and phase loss
- ✓ Monitoring of asymmetry
- ✓ Supply voltage 208-480 V AC
- ✓ Supply circuit = measuring circuit
- ✓ 1 change-over contact
- ✓ Width 22,5 mm

### Control elements

- ✓ Asymmetry

### Status indication

- ✓ LED U: Supply voltage
- ✓ LED R: Relay status



## TECHNICAL DATA

### SUPPLY CIRCUIT (=MEASURING CIRCUIT)

Terminals	L1-L2-L3	
Supply voltage	208/120 ... 480/277 V AC	
Supply voltage tolerance	-10 / +10 %	
Rated frequency	50 / 60 Hz	
Rated frequency tolerance	48 ... 63 Hz	
Rated consumption	3 x 480 V AC	typ. 0,55 W / 0,85 VA
Duty-cycle	100 %	
Backup power time	< 10 ms	
Recovery time	> 500 ms	
Drop-out voltage	≥ 121/70 V AC	

### MEASURING CIRCUIT

Terminals	L1-L2-L3	
Measurand	voltage 3-phase	
Measuring method	rectified value	
Monitoring functions	phase sequence, phase loss, asymmetry	
Measuring range	see supply voltage	
Frequency	see rated frequency	
Input resistance	3 MOhm	
Overload capacity	see supply voltage tolerance	



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### MEASURING CIRCUIT

Thresholds	Max	-
	Min	-
	Asymmetry	5 ... 25 %, OFF
Hysteresis		-

### TIMING CIRCUIT

Start-up delay	fixed	approx. 400 ms
Tripping delay		< 250 ms

### STATUS INDICATION

Supply voltage	LED U (green) on	supply voltage applied
Relay status	LED R (yellow) on	output relay energized

### OUTPUT CIRCUIT

Terminals		11-12-14
Kind of output		Relay
Number of contacts	change-over contact	1
Contact material		AgNi
Rated voltage (IEC 60947-1)		250V
Maximum switching voltage		400V AC
Minimum switching voltage / switching current		12 V / 10 mA
Rated current (IEC 60947-5-1)	AC-1	8 A / 250 V
	AC-15	1,5 A / 240 V (B300)
	DC-12	8 A / 24 V
Endurance	mechanical	30 x 10 <sup>6</sup> switching cycles
	electrical (AC-1)	100 x 10 <sup>3</sup> switching cycles
Rated frequency of operation	with load	6/min
	without load	1200/min
Fuse rating		8 A fast acting

### ACCURACY

Base accuracy		< 5 % (of full scale)
Setting accuracy		< 5 % (of full scale)
Repeat accuracy		< 1 %
Temperature influence		< 0,05 % / °C



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### ACCURACY

Voltage influence	-
Frequency influence	-

### ENVIRONMENTAL CONDITIONS

Ambient temperature	operation	-25 ... +60°C
	storage	-40 ... +70°C
Relative humidity		5 ... 95 %
Vibration	EN 60947-1	2 ... 13,2 Hz: 1 mm; 13,2 ... 100 Hz: 7 m/s <sup>2</sup>
Shock	EN 60947-1	150 m/s <sup>2</sup> 11 ms

### GENERAL DATA

Dimensions	W × H × D	22,5 x 67 x 76 mm
Mounting		DIN rail (EN60715)
Mounting position		any
Housing material		PA 66, self-extinguishing plastic, class V-0
Degree of protection	housing	IP40
	terminals	IP20
Electrical connection	V2PF...01	Screw terminal
Wire size	flexible with wire end ferrule	0,5 ... 2,5 mm <sup>2</sup> (20 AWG ... 13 AWG)
	flexible without wire end ferrule	0,5 ... 4 mm <sup>2</sup> (20 AWG ... 12 AWG)
	rigid	0,5 ... 4 mm <sup>2</sup> (20 AWG ... 12 AWG)
Stripping length		8 mm
Tightening torque		max. 1Nm
Electrical connection	V2PF...01P	Push-in terminal
Wire size	flexible with wire end ferrule	0,25 ... 1,5 mm <sup>2</sup> (24 AWG ... 16 AWG)
	flexible with plastic ferrule	0,25 ... 0,75 mm <sup>2</sup> (24 AWG ... 19 AWG)
	flexible without wire end ferrule	0,2 ... 1,5 mm <sup>2</sup> (24 AWG ... 16 AWG)
	rigid	0,2 ... 1,5 mm <sup>2</sup> (24 AWG ... 16 AWG)
Stripping length		8 mm
MTTF		-
Weight		82 g



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### ISOLATION DATA

Pollution degree (IEC 60947-5-1)		2
Overvoltage category (IEC 60947-5-1)		III
Rated insulation voltage (IEC 60947-1)	supply circuit / output circuit	300 V
Rated impulse withstanding voltage (IEC 60947-1)	supply circuit / output circuit	6 kV
Insulation test voltage (IEC 60947-1)	supply circuit / output circuit	3780 V
Degree of protection	supply circuit / output circuit	protective separation

### STANDARDS

Product standard		IEC 60947-5-1
Interference immunity		IEC 61000-6-2
Interference emmision		IEC 61000-6-4
Approvals		



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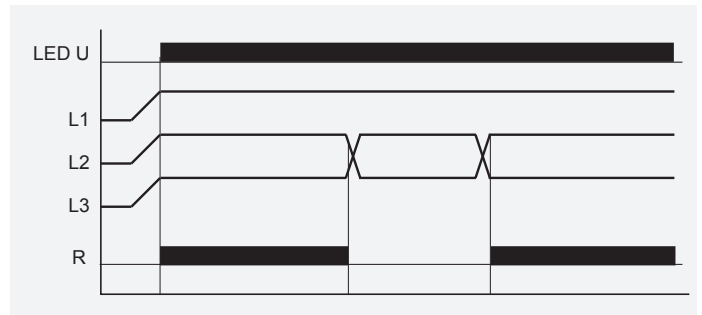


## FUNCTIONS

When all the phases are connected in the correct sequence and the measured asymmetry is less than the set value, the output relay R switches into on-position.

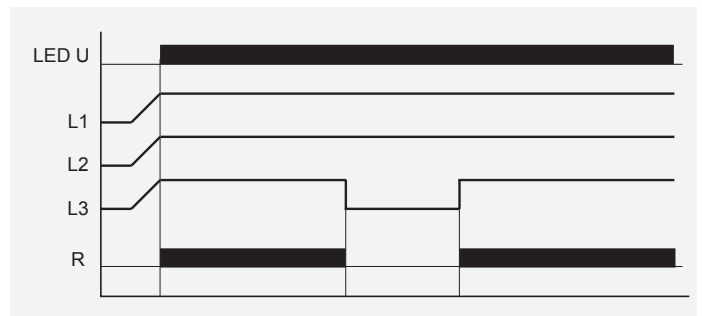
### Phase sequence monitoring

When the phase sequence changes, the output relay R switches into off-position.



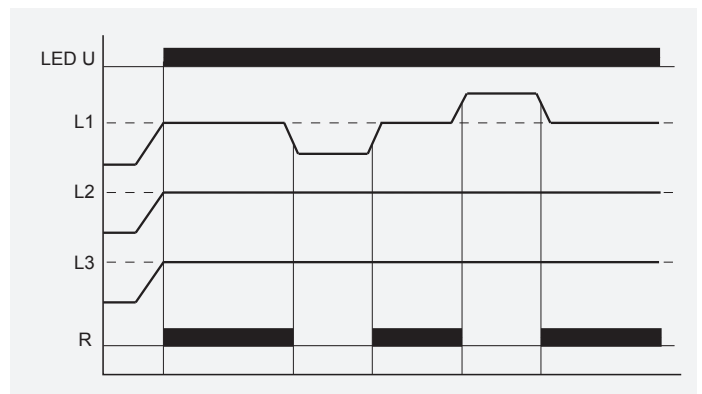
### Phase failure monitoring

When one of the three phases fails, the output relay R switches into off-position.



### Asymmetry monitoring

When the asymmetry exceeds the value at the ASYM-regulator, the output relay R switches into off-position. Reverse voltages of a consumer (e.g. a motor which continues to run on two phases only) do not effect the disconnection.





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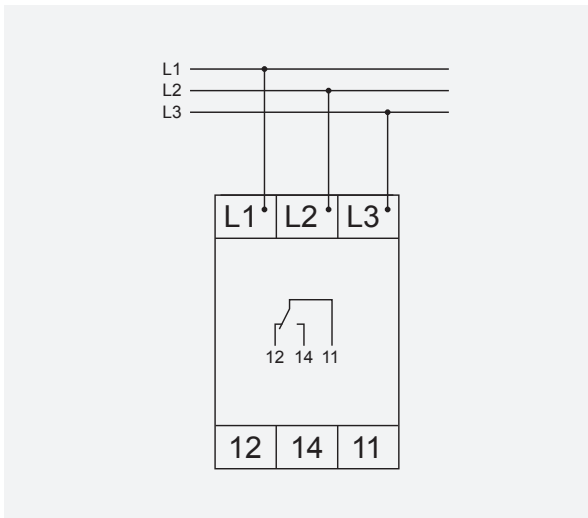
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## CONNECTIONS





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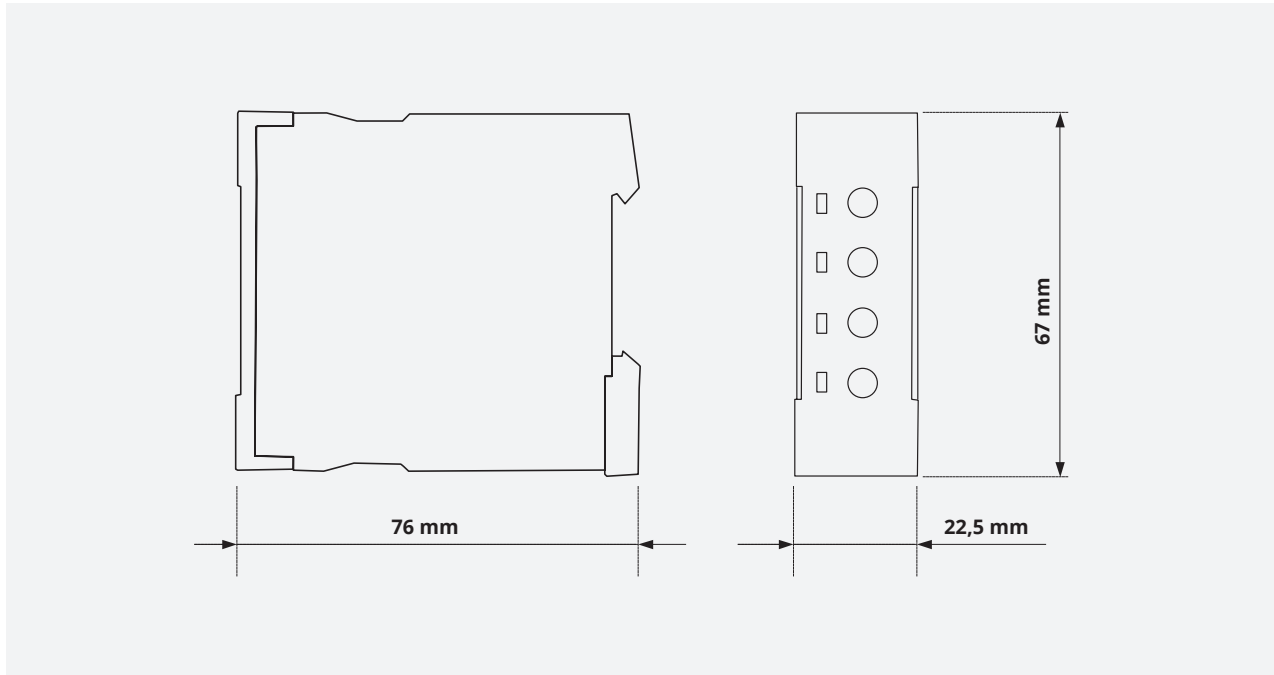
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## DIMENSIONS



## CONTACT



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