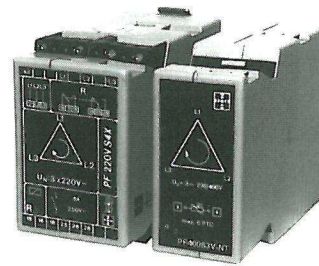


# Monitoring relays series **VOX PF...4X/PF...3V**

2.1

- ❑ three-phase voltage monitoring
- ❑ phase failure monitoring
- ❑ phase sequence monitoring
- ❑ asymmetry monitoring
- ❑ no auxiliary voltage required



## Technical Data:

### Supply voltages:

= measuring voltage, no additional auxiliary voltage required  
 Permissible voltage range 0.85 to 1.1  $U_N$   
 Frequency range 48-63 Hz  
 Duty cycle 100% IEC class 1c

### Environmental conditions:

Permissible ambient temperature - 25°C to + 55°C  
 Class of application HVF to DIN 40040

### Accuracy:

Repetition accuracy under constant condition (as % of full range)  $\leq 1\%$   
 Effect of voltage in the range of 0.85 to 1.1  $U_N \leq 0.5\%$   
 Effect of temperature  $\leq 0.1\% / ^\circ\text{C}$   
 Frequency range 48...63Hz

### Mechanical data/specifications:

Enclosure in self-extinguishing plastic  
 Type of protection IP 40

### Connection

Version X: terminals up to 4 mm<sup>2</sup> with protection against accidental contact

Version V: 11-pin plug-in base

### Dimensions and standards:

3V: 75 x 35 x 117 mm (h x b x d)

4X: 75 x 45 x 117 mm (h x b x d)

X: Mounting on DIN rails to DIN 46277/3 (European standard EN 50 0222) Connection via terminals up to 4 mm<sup>2</sup> with protection against accidental contact. Type of protection IP20  
 Contact protection to VDE 0106 and VBG 4

Terminal arrangement and connection markings to DIN 46 199

V: Mounting and connection via 11-pin screw or soldered fitting.

Fixing via retaining clip BU 351. Pin arrangement and connection markings to IEC 67-1-18a

### Specifications:

VDE 0435: Test voltage 2000 VAC

VDE 0110: Group C 250 VAC

### Output stage:

4X: 2 changeover

3V: 1 changeover

Max. switching voltage: 380 V AC, 250 V DC

Continuous current: max. 8A

Switching capacity: 1500 VA

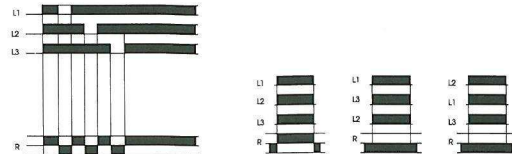
Contact life: 220 V AC, 5 A resistive, approx 3.10<sup>9</sup> switching operations

Mechanical life >30.10<sup>9</sup> switching operations

Contact material: AgNi - thinfilm gold plating

## Phase sequence monitoring

### Function diagram:



### Description of function:

The 3-phase voltage monitoring relay monitors the 3-phase network additionally for deviation of one phase from another in terms of amount and angle. The permitted asymmetry is fixed at 30%.

If the voltage difference of individual phases exceeds the set value, the output relay releases after 0.5 sec.

The relay also detects a short between two phases (when only one fuse fails) and releases after 0.5 sec.

Also the relay reacts to any negative feed from motors when there is phase disruption or phase sequence error.

### Monitoring range:

Input	$U_N$ Voltage effective	Input resistance	Overload permanent kurzzeitig
L1-L2-L3	3~110V	3x470k $\Omega$	600 V <sub>eff</sub>
L1-L2-L3	3~220V		
L1-L2-L3	3~380V		
L1-L2-L3	3~400V		
L1-L2-L3	3~415V		
L1-L2-L3	3~440V		

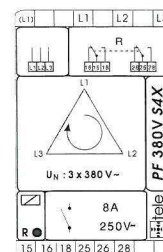
### Time delays:

Start-surge delay: none

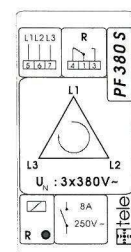
Release delay: fixed approx 0.5 sec

### Front view:

PF... 4X



PF... 3V



### Types:

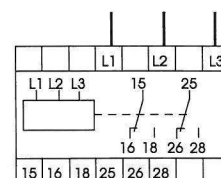
PF110V4X	PF400V4X	PF110V3V	PF400V3V
PF220V4X	PF415V4X	PF220V3V	
PF380V4X	PF440V4X	PF380V3V	

### Accessories:

- Plug-in baseTVE 11
- Plug-in baseTVE 12
- Retaining clip BU 351
- Fascia surround FR 35

### Connection:

PF... 4X



PF... 3V

