- Voltage monitoring in 3-phase mains
- Monitoring of phase sequence and phase failure
- Monitoring of asymmetry
- Connection of neutral wire optional
- Supply voltage = measuring voltage
- 2 change over contacts
- Width 35 mm
- Installation design



# Technical data

#### **▶** 1. Functions

Monitoring of phase sequence, phase failure and asymmetry with adjustable asymmetrie, connection of neutral wire optional.

#### 2. Time ranges

Adjustment range Tripping delay: fixed, approx. 100ms

## 3. Indicators

Green LED ON: indication of supply voltage Yellow LED ON/OFF: indication of relay output

## 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40 Mounted on DIN-rail TS 35 according to EN 50022

Mounting position: any

Shockproof terminal connection according to VBG 4 (PZ1 required),

IP rating IP20

Tightening torque: max. 1Nm

Terminal capacity:

1 x 0.5 to 2.5mm<sup>2</sup> with/without multicore cable end

1 x 4mm<sup>2</sup> without multicore cable end

2 x 0.5 to 1.5mm<sup>2</sup> with/without multicore cable end 2 x 2.5mm<sup>2</sup> flexible without multicore cable end

## 5. Input circuit

Tolerance:

Supply voltage: (=measured voltage) Terminals: (N)-L1-L2-L3

Rated voltage Un: see table ordering information or

printing on the unit -30% to +30% of Un

Rated consumption: 11VA (1,2W) AC 48 to 63Hz Rated frequency: Duty cycle: 100%

Reset time: 500ms Hold-up time:

Drop out voltage: >20% of the supply voltage III (according to IEC 60664-1) Overvoltage category:

Rated surge voltage: 6kV

#### 6. Output circuit

2 potential free change over contacts Rated voltage: 250V AC

Switching capacity: 1250VA (5A / 250V AC) 5A fast acting Fusing: Mechanical life: 20 x 10<sup>6</sup> operations Electrical life: 2 x 10<sup>5</sup> operations

at 1000VA resistive load Switching frequency: max. 60/min at 100VA resistive load max. 6/min at 1000VA resistive load

(according to IEC 947-5-1) III. (according to IEC 60664-1)

Overvoltage category:

Rated surge voltage: 6kV

## 7. Measuring circuit

Measuring variable: 3(N)~, sinus, 48 to 63Hz Measuring input: (=supply voltage) (N)-L1-L2-L3 Terminals: Overload capacity: determined by tolerance

specified for supply voltage Input resistance:

Asymmetry: see table ordering information Overvoltage category: III (according to IEC 60664-1) Rated surge voltage: 6kV

#### 8. Accuracy

±5% Base accuracy: Adjustment accuracy: ≤5% Repetition accuracy: +2% Voltage influence:

Temperature influence: ≤0.05% / °C

## 9. Ambient conditions

Ambient temperature: -25 to +55°C (according to IEC 68-1)

Storage temperature: -25 to +70°C Transport temperature: -25 to +70°C Relative humidity: 15% to 85%

(according to IEC 721-3-3 class 3K3)

Pollution degree: 2 if built in 3

(according to IEC 664-1) Vibration resistance: 10 to 55 Hz 0.35mm

(according to IEC 68-2-6)

Shock resistance: 15g 11ms

(according to IEC 68-2-27)

## 10. Weight

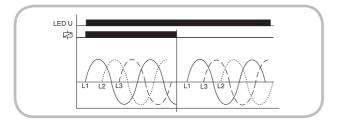
Single packing: 110g

# Subject to alterations and errors

# Functions

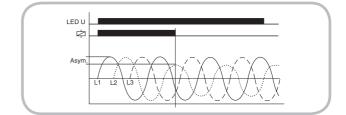
#### Phase sequence monitoring

When all the phases are connected in the correct sequence and the measured asymmetry is less than the fixed value, the output relay switches into on-position (yellow LED illuminated). When the phase sequence changes, the output relay switches into off-position (yellow LED not illuminated).



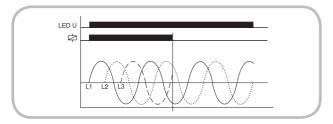
#### Asymmetry monitoring

The output relay R switches into off-position (yellow LED not illuminated) when the asymmetrie exceeds the value set at the ASYM-regulator. Reverse voltages of a consumer (e.g. a motor which continues to run on two phases only) do not effect the disconnection.

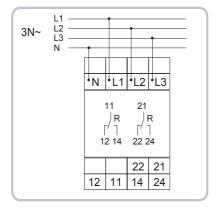


## Phase failure monitoring

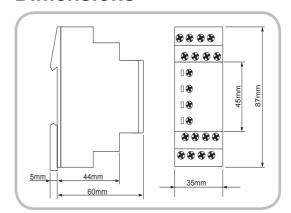
The output relay switches into off-position (yellow LED not illuminated), when one of the three phases fails.



# Connections



# Dimensions



# Ordering informations

Types	Nominal voltage Un	Threshold voltage Us	LEDs	Part. Nr. (PQ 1)
E3PF400VSY02	3(N)~400/230V	Asymmetrie 5%25%	U, Rel.	1341300