

- ▶ Industrial design
- ▶ Width 45mm
- ▶ Voltage monitoring in 3-phase mains
- ▶ 2 change over contacts



Technical data

1. Functions

Undervoltage monitoring in 3-phase mains with adjustable thresholds, adjustable tripping delay, monitoring of phase failure and asymmetry with adjustable asymmetry

2. Time ranges

Start-up suppression time:	-	Adjustment range
Tripping delay:	0.5s	5s

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
 Initial torque: max. 1Nm
 Terminal capacity:
 1 x 0.5 to 2.5mm² with/without multicore cable end
 1 x 4mm² without multicore cable end
 2 x 0.5 to 1.5mm² with/without multicore cable end
 2 x 2.5mm² flexible without multicore cable end

5. Input circuit

Supply voltage:	12 to 440V AC	terminals A1-A2 (galvanically separated) selectable via transformer modules TR3
Tolerance:	-15% to +10%	
Rated frequency:	48 to 63Hz	
Rated consumption:	4VA (3W)	
Duration of operation:	100%	
Reset time:	500ms	
Residual ripple for DC:	-	
Drop-out voltage:	>30% of the supply voltage	

6. Output circuit

2 potential free change over contacts

Switching capacity:	1500VA (6A / 250V)
Fusing:	6A fast acting
Mechanical life:	20 x 10 ⁶ operations
Electrical life:	2 x 10 ⁵ 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)
Insulation voltage:	250V AC (according to IEC 664-1)
Surge voltage:	4kV, overvoltage category III (according to IEC 664-1)

7. Measuring circuit

Input:	3~ 110V	terminals L1-L2-L3	(PH110V4X)
	3~ 220V	terminals L1-L2-L3	(PH220V4X)
	3~ 400V	terminals L1-L2-L3	(PH400V4X)
	3~ 440V	terminals L1-L2-L3	(PH440V4X)

Overload capacity:

3~ 110V	3~ 165V	(PH110V4X)
3~ 220V	3~ 330V	(PH220V4X)
3~ 400V	3~ 600V	(PH400V4X)
3~ 440V	3~ 600V	(PH440V4X)

Input resistance:

3~ 110V	470kΩ	(PH110V4X)
3~ 220V	470kΩ	(PH220V4X)
3~ 400V	470kΩ	(PH400V4X)
3~ 440V	470kΩ	(PH440V4X)

Switching threshold

U _{max} :	80% to 100%
U _{min} :	80% to 100%

Asymmetry:

5% to 25%

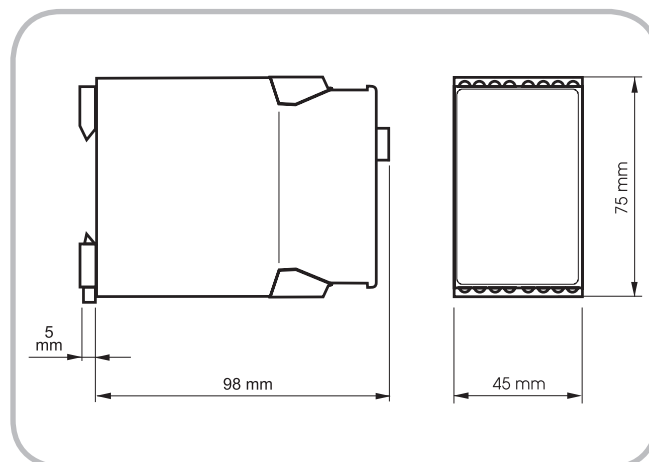
8. Accuracy

Base accuracy:	-
Adjustment accuracy:	≤5% (of maximum scale value)
Repetition accuracy:	≤1%
Voltage influence:	≤0.5%
Temperature influence:	≤0.1% / °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:	3 (according to IEC 664-1)

10. Dimensions



Functions

Undervoltage monitoring in 3-phase mains with adjustable thresholds, adjustable tripping delay, monitoring of phase failure and asymmetry with adjustable asymmetry

The supply voltage U must be constantly applied to the device (green LED illuminated).

Undervoltage monitoring

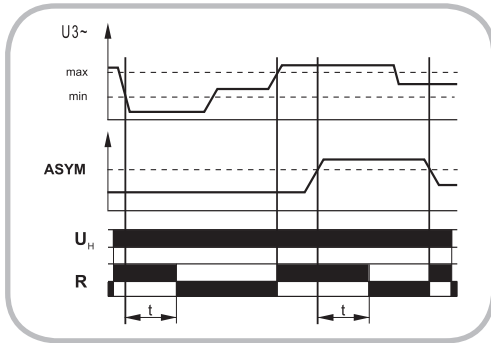
The output relay R switches into on-position (yellow LED illuminated) when the measured voltages of all the connected phases exceed the value adjusted at the MAX-regulator. When the measured voltage falls below the value adjusted at the MIN-regulator, the set interval of the tripping delay (t) begins. After the interval has expired, the output relay switches into off-position (yellow LED not illuminated).

Phase failure monitoring

When one of the three phases fails, the set interval of the tripping delay (t) begins. After the interval has expired, the output relay R switches into off-position (yellow LED not illuminated). Reverse voltages of a consumer (e.g. a motor which continues to run on two phases only) do not effect the disconnection.

Asymmetry monitoring

When one of the phase voltages deviates from the mean value of all the three phase voltages by more than the value set at the ASYM-regulator, the set interval of the tripping delay (t) begins. After the interval has expired, the output relay R switches into off-position (yellow LED not illuminated).



Connections

