

- ▶ Voltage monitoring in 3-phase mains
- ▶ Connection of neutral wire necessary
- ▶ 2 change over contacts
- ▶ Width 35mm
- ▶ Installation design



Technical data

1. Functions

Voltage monitoring in 3-phase mains with adjustable threshold, adjustable tripping delay and asymmetry

Min+Asym	undervoltage monitoring with asymmetry monitoring
Max+Asym	overvoltage monitoring with asymmetry monitoring
Window	monitoring inside the window between U_{min} and U_{max}
Win+Inv	monitoring outside the window between U_{min} and U_{max}
Min	undervoltage monitoring
Max	overvoltage monitoring
Win+Asym	monitoring the window between U_{min} and U_{max} with asymmetry monitoring
Win+Inv+Asym	monitoring outside the window U_{min} and U_{max} with asymmetry monitoring

2. Time ranges

	Adjustment range
Start-up suppression time:	—
Tripping delay:	0.5s 10s

3. Indicators

Green LED ON:	indication of supply voltage output relay in on-position
Green LED flashes:	output relay in off-position
Red LED ON/OFF:	indication of fault of corresponding threshold

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:	(= measuring voltage) 3N~ 400/230V terminals N-L1-L2-L3
Tolerance:	-30% bis +35%
Rated frequency:	48 to 63Hz
Rated consumption:	8VA (1.5W)
Duration of operation:	100%
Reset time:	<1s
Residual ripple for DC:	—
Drop-out voltage:	>40% of the supply voltage

6. Output circuit

2 potential free change over contacts	
Switching capacity (distance < 5mm):	750VA (3A / 250V)
Switching capacity (distance > 5mm):	1250VA (5A / 250V)
Fusing:	5A 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:	(= supply voltage) 3N~ 400/230V terminals N-L1-L2-L3
Overload capacity:	3N~ 550/317V
Input resistance:	—
Switching threshold	
U_{max} :	3N~ 350/202 to 3N~ 520/300V
U_{min} :	3N~ 280/160 to 3N~ 480/277V
Asymmetry:	5% to 20%

8. Accuracy

Base accuracy:	±5% (of maximum scale value)
Adjustment accuracy:	≤5% (of maximum scale value)
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)

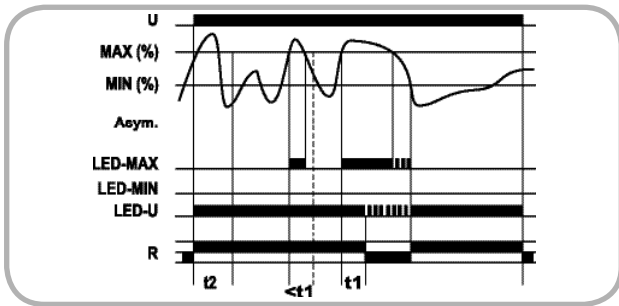
Functions

For all the functions the red LEDs are flashing alternating, when the minimum value for the measured voltage was chosen to be greater than the maximum value.

For all the functions the monitoring of the asymmetry can be activated. When the set value for asymmetry is exceeded, the output relay R switches into off position (green LED and both red LED flash).

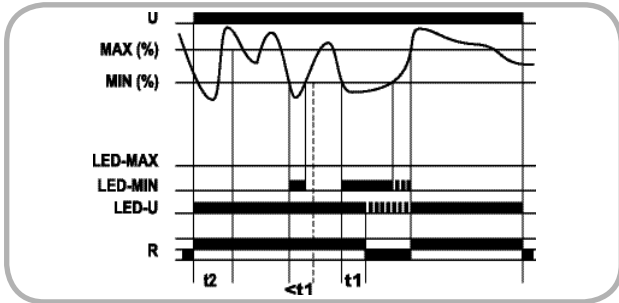
Maximum monitoring (Max, Max+Asym)

When the measured voltage exceeds the value adjusted at the MAX-regulator (red LED MAX illuminated), the set interval of the tripping delay (DELAY) begins. After the interval has expired, the output relay R switches into off-position (green LED flashes). When the measured value for the voltage again falls below the set value, the red LED also begins to flash. The output relay switches into on-position (green LED illuminated), when the measured voltage falls below the value adjusted at the MIN-regulator (red LED MAX not illuminated).



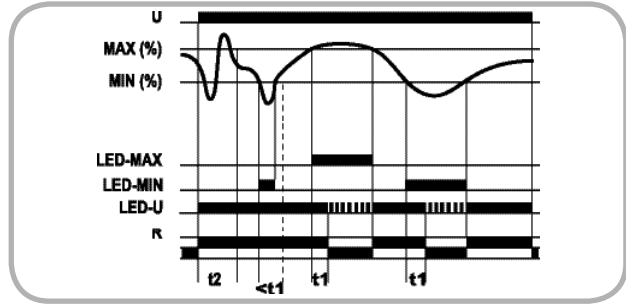
Minimum monitoring (Min, Min+Asym)

When the measured voltage exceeds the value adjusted at the MAX-regulator (red LED MIN not illuminated) the output relay R switches into on-position (green LED illuminated). When the measured voltage falls below the value adjusted at the MIN-regulator (red LED MIN illuminated), the set interval of the tripping delay (DELAY) begins. After the interval has expired the output relay switches into off-position (green LED flashes). When the measured value for the voltage again exceeds the set value, the red LED also begins to flash.



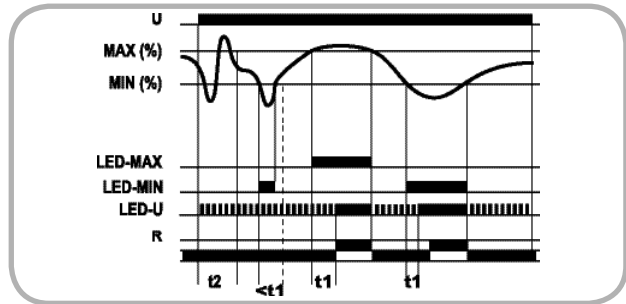
Window function (Window, Win+Asym)

The output relay R switches into on-position (green LED illuminated) when the measured voltage exceeds the value adjusted at the MIN-regulator (red LED MIN not illuminated). When the measured voltage exceeds the value adjusted at the MAX-regulator (red LED MAX illuminated), the set interval of the tripping delay (DELAY) begins. After the interval has expired the output relay switches into off-position (green LED flashes). The output relay again switches into on-position (green LED illuminated) when the measured voltage falls below the value adjusted at the MAX-regulator (red LED MAX not illuminated). When the measured voltage falls below the value adjusted at the MIN-regulator (red LED MIN illuminated), the set interval of the tripping delay (DELAY) begins again. After the interval has expired the output relay switches into off-position (green LED flashes).

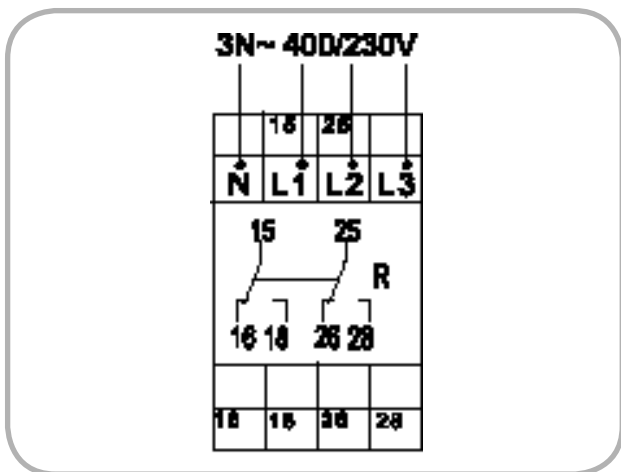


Inverted Window function (Win+Inv, Win+Inv+Asym)

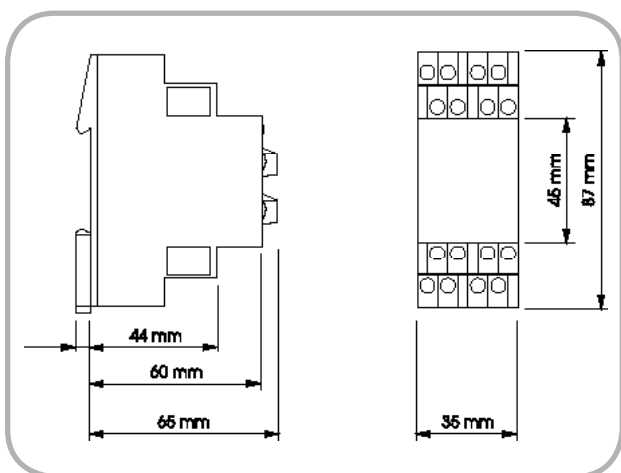
The output relay R switches into off-position (green LED flashes) when the measured voltage exceeds the value adjusted at the MIN-regulator (red LED MIN not illuminated). When the measured voltage exceeds the value adjusted at the MAX-regulator (red LED MAX illuminated), the set interval of the tripping delay (DELAY) begins. After the interval has expired the output relay switches into on-position (green LED illuminated). The output relay again switches into off-position (green LED flashes) when the measured voltage falls below the value adjusted at the MAX-regulator (red LED MAX not illuminated). When the measured voltage falls below the value adjusted at the MIN-regulator (red LED MIN illuminated), the set interval of the tripping delay (DELAY) begins again. After the interval has expired the output relay switches into on-position (green LED illuminated).



Connections



Dimensions



OPH3W

Notes

Subject to alterations and errors