

- ▶ Industrial design
- ▶ Width 45mm
- ▶ AC/DC voltage monitoring in 1-phase mains
- ▶ Fault latch
- ▶ Position of output relay presettable
- ▶ 1 change over contact



Technical data

1. Functions

AC/DC voltage monitoring in 1-phase mains with adjustable thresholds, timing for start-up suppression and tripping delay separately adjustable

W monitoring inside the window between U_{min} and U_{max}
 R monitoring outside the window between U_{min} and U_{max}

2. Time ranges

	Adjustment range	
Start-up suppression time:	0.1s	10s
Tripping delay:	0.1s	10s

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 TR2

Tolerance: -15% to +10%
 Rated frequency: 48 to 63Hz
 Rated consumption: 2VA (1.5W)
 Duration of operation: 100%
 Reset time: 500ms
 Residual ripple for DC: -
 Drop-out voltage: >30% of the supply voltage

6. Output circuit

1 potential free change over contact
 Switching capacity: 1250VA (5A / 250V AC)
 Fusing: 5A fast acting
 Mechanical life: 20 x 10⁶ operations
 Electrical life: 1 x 10⁵ 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:	24V AC/DC	terminals E1-F1(+)
	115V AC/DC	terminals E1-F2(+)
	230V AC/DC	terminals E1-F3(+)
	440V AC/DC	terminals E2-F3(+)
Overload capacity:	24V AC/DC	60V
	115V AC/DC	160V
	230V AC/DC	320V
	440V AC/DC	620V
Input resistance:	24V AC/DC	36kΩ
	115V AC/DC	230kΩ
	230V AC/DC	470kΩ
	440V AC/DC	950kΩ
Switching threshold:	U_{max} :	-20% to +30%
	U_{min} :	-30% to +20%

8. Control contact Y

Function: fault latch (Y1-Y2 bridged)
 Connections: potential free, terminals Y1-Y2
 Loadable: no
 Line length: max. 5m
 Control pulse length: -

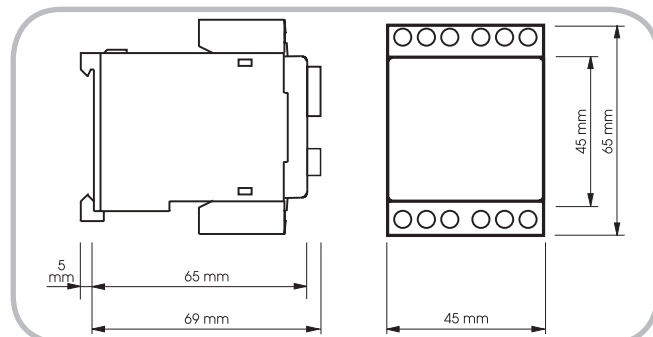
9. Accuracy

Base accuracy: ±5% (of maximum scale value)
 Adjustment accuracy: ≤5% (of maximum scale value)
 Repeat accuracy: <1%
 Voltage influence: ≤0.02% / 1% supply voltage change
 Temperature influence: ≤0.02% / °C

10. 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)

11. Dimensions



Functions

AC/DC voltage monitoring in 1-phase mains with adjustable thresholds, timing for start-up suppression and tripping delay separately adjustable

When the supply voltage U is applied (green LED illuminated), the set interval of the start-up suppression (t_2) begins. Irrespective of the relay position under normal operation, the relay position for the duration of the start-up suppression can be selected with the DIP-switch 3: Relay switches into on-position (on) or remains in off-position (off). Changes of the measured voltage during this period do not affect the state of the output relay.

Window function (DIP-switch 2 in position W)

The output relay R switches into on-position (yellow LED illuminated), when the measured voltage exceeds the value adjusted at the U_{MIN} -regulator (red LED MIN not illuminated). When the measured voltage exceeds the value adjusted at the U_{MAX} -regulator (red LED MAX illuminated), the set interval of the tripping delay (t_1) begins. After the interval has expired the output relay switches into off-position (yellow LED not illuminated). When the measured voltage falls below the maximum value (red LED MAX not illuminated), the output relay again switches into on-position (yellow LED illuminated). When the measured voltage falls below the value adjusted at the U_{MIN} -regulator (red LED MIN illuminated), the set interval of the tripping delay begins. After the interval has expired the output relay switches into off-position (yellow LED not illuminated).

If the fault latch is activated (bridge Y1-Y2) and the measured voltage has fallen below the value adjusted at the U_{MIN} -regulator once, the output relay remains in the off-position, even if the measured voltage exceeds that value. After resetting the fault latch (opening the bridge Y1-Y2) the output relay switches into on-position. If the measured voltage has exceeded the value adjusted at the U_{MAX} -regulator once, the output relay remains also in the off-position, even if the measured voltage falls below that value. After resetting the fault latch the output relay switches into on-position.

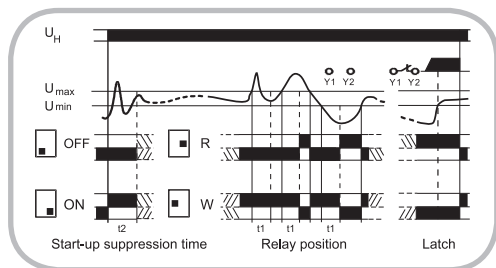
If instead of opening the bridge Y1-Y2 the supply voltage is disconnected and re-applied the measuring cycle begins again with the set interval of the start-up suppression (t_2).

Inverted Window function (DIP-switch 2 in position R)

The output relay R switches into off-position (yellow LED not illuminated), when the measured voltage exceeds the value adjusted at the U_{MIN} -regulator (red LED MIN not illuminated). When the measured voltage exceeds the value adjusted at the U_{MAX} -regulator (red LED MAX illuminated), the set interval of the tripping delay (t_1) begins. After the interval has expired the output relay switches into on-position (yellow LED illuminated). When the measured voltage falls below the maximum value (red LED MAX not illuminated), the output relay again switches into off-position (yellow LED not illuminated). When the measured voltage falls below the value adjusted at the U_{MIN} -regulator (red LED MIN illuminated), the set interval of the tripping delay begins. After the interval has expired the output relay switches into on-position (yellow LED illuminated).

If the fault latch is activated (bridge Y1-Y2) and the measured voltage has fallen below the value adjusted at the U_{MIN} -regulator once, the output relay remains in the on-position, even if the measured voltage exceeds that value. After resetting the fault latch (opening the bridge Y1-Y2) the output relay switches into off-position. If the measured voltage has exceeded the value adjusted at the U_{MAX} -regulator once, the output relay remains also in the on-position, even if the measured voltage falls below that value. After resetting the fault latch the output relay switches into off-position.

If instead of opening the bridge Y1-Y2 the supply voltage is disconnected and re-applied the measuring cycle begins again with the set interval of the start-up suppression (t_2).



Connections

