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

Technical data

1. Functions

AC/DC current monitoring in 1-phase mains with adjustable thresholds, timing for start-up suppression and tripping delay separately adjustable and the following functions (selectable by means of DIP-switch)

DIP-Switch 1:	AC/DC preselection
DIP-Switch 2:	
W	Monitoring inside (W) the window between I_{min} and I_{max}
R	Monitoringoutside (R) the window between I_{min} and I_{max}
DIP-Switch 3:	
ON	Relay pics up during the start-up suppression time (t2)
OFF	Relay remains in off position during the start-up suppression time (t2)

2. Time ranges

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

3. Indicators

Red LED ON/OFF:	indication of fault of the corresponding threshold
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 VBG4 (PZ1 required), IP rating IP20

Tightening 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 ends
- 2 x 2.5mm² flexibel without multicore cable ends

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 (distance <5mm):	750VA (3A / 250V AC)
Switching capacity (distance >5mm):	1250VA (5A / 220V AC)
Fusing:	5A fast acting
Mechanical life:	20 x 10^6 operations
Electrical life:	1 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)
Rated voltage:	250V AC (according to IEC 664-1)
Rated surge voltage:	2.5kV, overvoltage category II (according to IEC 664-1)

7. Measuring circuit

Input:	
100mA AC/DC	terminals K-I3(+)
1A AC/DC	terminals K-I2(+)
10A AC/DC	terminals K-I1(+)
Overload capacity:	
100mA AC/DC	1A
1A AC/DC	4A
10A AC/DC	15A (distance > 20mm)
Input resistance:	
100mA AC/DC	1Ω
1A AC/DC	100mΩ
10A AC/DC	10mΩ
Switching threshold:	I_{max}: 10% to 100%
Hysterese:	I_{min}: 5% to 50%

8. Control contact Y

Functions:	latch (Y1-Y2 bridged)
Connections:	potential free, terminals Y1-Y2
Loadable:	No
Line length:	max. 5m
Control pulse length:	—

9. Accuracy

Base accuracy:	±7% (of maximum scale value)
Adjustment accuracy:	≤5% (of maximum scale value)
Repetition accuracy:	<1%
Voltage influence:	≤0.02% / 1% supply voltage change
Temperature influence:	≤0.1% / °C

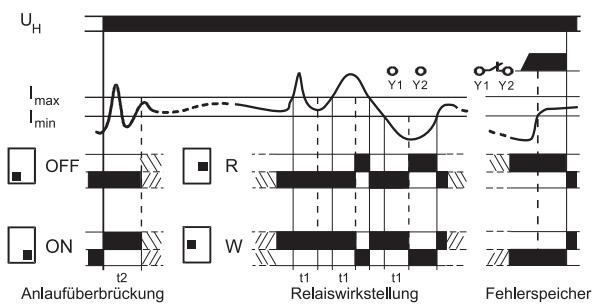
10. Ambient conditions

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)

Functions

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 current during this period do not affect the state of the output relay.

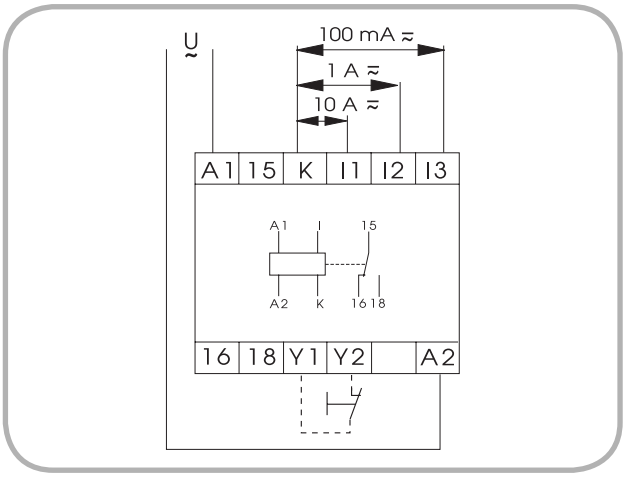
Window function (DIP-switch 2 in position W)
The output relay R switches into on-position (yellow LED illuminated), when the measured current exceeds the value adjusted at the I_{MIN}-regulator (red LED MIN not illuminated). When the measured current exceeds the value adjusted at the I_{MAX}-regulator (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 current falls below the maximum value (red LED MAX not illuminated), the output relay again switches into on-position (yellow LED illuminated). When the measured current falls below the value adjusted at the I_{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 current has fallen below the value adjusted at the I_{MIN}-regulator once, the output relay remains in the off-position, even if the measured current exceeds that value. After resetting the fault latch (opening the bridge Y1-Y2) the output relay switches into on-position. If the measured current has exceeded the value adjusted at the I_{MAX}-regulator once, the output relay remains also in the off-position, even if the measured current 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 current exceeds the value adjusted at the I_{MIN}-regulator (red LED MIN not illuminated). When the measured current exceeds the value adjusted at the I_{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 current 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 current falls below the value adjusted at the I_{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 current has fallen below the value adjusted at the I_{MIN}-regulator once, the output relay remains in the on-position, even if the measured current exceeds that value. After resetting the fault latch (opening the bridge Y1-Y2) the output relay switches into off-position. If the measured current has exceeded the value adjusted at the I_{MAX}-regulator once, the output relay remains also in the on-position, even if the measured current 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



Dimensions