



Monitoring relays - GAMMA series

Undercurrent monitoring

Supply voltage selectable via power modules / switching power supply

1 change-over contact

Width 22.5mm

Industrial design



Technical data

1. Functions

a.c. / d.c. undercurrent monitoring in 1-phase mains with adjustable threshold and hysteresis and adjustable tripping delay.

2. Time ranges

	Adjustment range
Start-up suppression time:	-
Tripping delay:	0.2s 10s

3. Indicators

Green LED ON:	indication of supply voltage
Yellow LED ON/OFF:	indication of relay output
Red LED ON/OFF:	indication of failure of the corresponding threshold
Red LED flashes:	indication of tripping delay of the corresponding threshold

4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40
 Mounted on DIN-Rail TS 35 according to EN 60715
 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 2.5mm² 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:	terminals A1-A2 (galvanically separated) selectable via power modules TR2 or via switching power supply SNT2
12 to 400V a.c.	
24V d.c.	
Tolerance:	according to specification of power module / switching power supply
Rated frequency:	according to specification of power module / switching power supply
Rated consumption:	2VA (1.5W)
Duration of operation:	100%
Reset time:	500ms
Residual ripple for d.c.	-
Drop-out voltage:	>30% of the supply voltage
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

6. Output circuit

1 potential free change-over contact
 Rated voltage: 250V a.c.
 Switching capacity: 750VA (3A / 250V a.c.)
 If the distance between the devices is less than 5 mm.
 Switching capacity: 1250VA (5A / 250V a.c.)
 If the distance between the devices is greater than 5 mm.
 Fusing: 5A fast acting
 Mechanical life: 20 x 10⁶ operations
 Electrical life: 2 x 10⁵ operations at 1000VA resistive load

Switching frequency:

max. 60/min at 100VA resistive load
 max. 6/min at 1000VA resistive load (in accordance with IEC 60947-5-1)
 III (in accordance with IEC 60664-1)
 4kV

Overvoltage category:

Rated surge voltage:

7. Measuring circuit

Measured variable:	d.c. or a.c. Sinus (48 to 63Hz)
Input:	
20mA a.c./d.c.	terminals K-11(+)
1A a.c./d.c.	terminals K-12(+)
5A a.c./d.c.	terminals K-13(+)
Overload capacity:	
20mA a.c./d.c.	250mA
1A a.c./d.c.	3A
5A a.c./d.c.	10A
Input resistance:	
20mA a.c./d.c.	2.7Ω
1A a.c./d.c.	47mΩ
5A a.c./d.c.	10mΩ
Switching threshold:	
Max	10% to 100% of I _N
Min	5% to 95% of I _N
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

8. Accuracy

Base accuracy:	≤3% (of maximum scale value)
Frequency response:	-10% to +5% (48 to 63Hz)
Adjustment accuracy:	≤5% (of maximum scale value)
Repetition accuracy:	≤2%
Voltage influence:	-
Temperature influence:	≤0.05% / °C

9. Ambient conditions

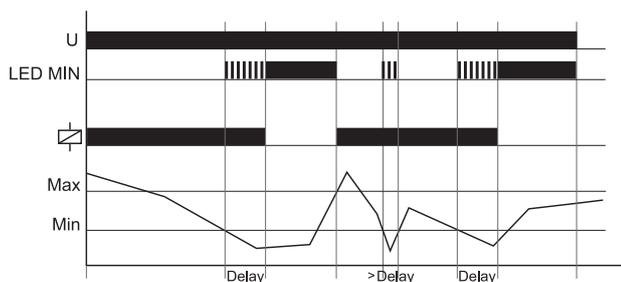
Ambient temperature:	-25 to +55°C (in accordance with IEC 60068-1) -25 to +40°C (in accordance with UL 508)
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	15% to 85% (in accordance with IEC 60721-3-3 class 3K3)
Pollution degree:	3 (in accordance with IEC 60664-1)
Vibration resistance:	10 to 55Hz 0.35mm (in accordance with IEC 60068-2-6)
Shock resistance:	15g 11ms (in accordance with IEC 60068-2-27)

Functions

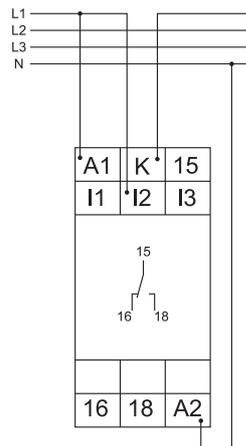
Undercurrent monitoring (UNDER)

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

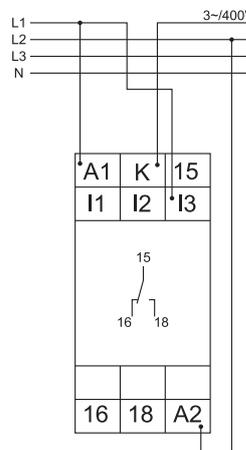
The LEDs MIN and MAX are flashing alternating, when the minimum value for the measured current was chosen to be greater than the maximum value.



Range 1A with power modul 230V a.c.

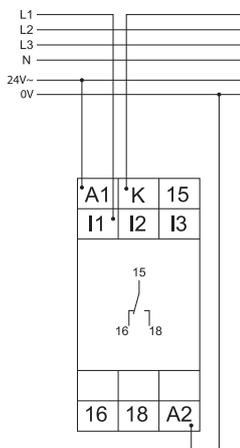


Range 5A with power modul 400V a.c.



Connections

Range 20mA with power modul 24V a.c.



Dimensions

