



- Monitoring relays - GAMMA series
- Overcurrent monitoring
- Supply voltage selectable via power modules
- 1 change-over contact
- Width 22.5mm
- Industrial design



## Technical data

### 1. Functions

a.c./d.c. overcurrent 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 2.5mm<sup>2</sup> with/without multicore cable end  
 1 x 4mm<sup>2</sup> without multicore cable end  
 2 x 0.5 to 1.5mm<sup>2</sup> with/without multicore cable end  
 2 x 2.5mm<sup>2</sup> flexible without multicore cable end

### 5. Input circuit

Supply voltage:	12 to 400V a.c.	terminals A1-A2 (galvanically separated) selectable via power modules TR2
Tolerance:		according to specification of power module
Rated frequency:	24V d.c.	according to specification of power module terminals A1-A2 (galvanically separated) selectable via switching power supply SNT2
Tolerance:		according to specification of switching power supply
Rated frequency:		according to specification of 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 5mm.  
 Switching capacity: 1250VA (5A / 250V a.c.)  
 If the distance between the devices is greater than 5mm.

Fusing:	5A fast acting
Mechanical life:	20 x 10 <sup>6</sup> operations
Electrical life:	2 x 10 <sup>5</sup> 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)
Overvoltage category:	III (in accordance with IEC 60664-1)
Rated surge voltage:	4kV

### 7. Measuring circuit

Measured variable:	d.c. or a.c. Sinus (48 to 63Hz)
Input:	
20mA a.c./d.c.	terminals K-1(+)
1A a.c./d.c.	terminals K-2(+)
5A a.c./d.c.	terminals K-3(+)
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.	2.7mΩ
1A a.c./d.c.	47mΩ
5A a.c./d.c.	10mΩ
Switching threshold:	
Max	10% to 100% of I <sub>N</sub>
Min	5% to 95% of I <sub>N</sub>
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

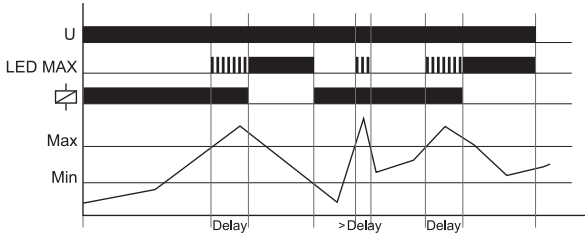
### 9. Ambient conditions

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)

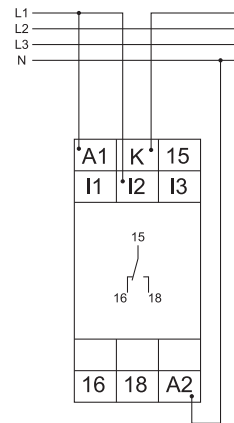
# Functions

## Overcurrent monitoring (OVER)

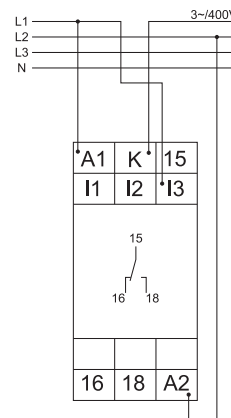
When the measured current exceeds the value adjusted at the MAX-regulator, the set interval of the tripping delay (DELAY) begins (red LED MAX flashes). After the interval has expired (red LED MAX illuminated), the output relay switches into off-position (yellow LED not illuminated). The output relay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

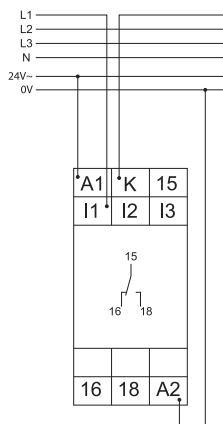


Range 5A with power modul 400V a.c.



# Connections

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



# Dimensions

