



NEW
product

- AC/DC voltage monitoring in 1-phase mains ❶
- Frequency of supply voltage (16,6...400 Hz)
- Timing adjustment for start-up suppression time and tripping delay ❷
- Fault latch mode
- Relay supply via the supply transformer of TR2 type ❸ - see page 58
- 2 changeover contacts: 2 C/O
- Rated load: 5 A / 250 V AC at cat. AC1
- Installation design: width 22,5 mm
- Recognitions, certifications, directives: **CE**

Type of relay

MR-GU1M2P-TR2

Output circuit

Number and type of contacts		2 C/O - changeover
Rated load	AC1	5 A / 250 V AC
Max. breaking capacity	AC1	1 250 VA
Max. operating frequency		3 600 cycles/hour
• at 100 VA resistive load		360 cycles/hour
• at 1 000 VA resistive load		PN-EN 60947-5-1

Input circuit

Supply voltage U		12...400 V AC; terminals A1-A2 (galvanically separated) ❶
Drop-out voltage		AC: $\geq 0,3 U_n$
Operating range of supply voltage		as per the specification of TR2 supply transformer
Rated power consumption		2,0 VA / 1,5 W
Rated frequency		as per the specification of TR2 supply transformer
Duty cycle		100%
Measuring circuit	<ul style="list-style-type: none"> • fusing • terminals • measuring variable • measuring input • overload capacity • input resistance • swithcing threshold U_s 	max. 20 A UL 508 30 V AC/DC: E-F1 60 V AC/DC: E-F2 300 V AC/DC: E-F3 DC or AC sinus, 16,6...400 Hz (frequency response: -10...+5%) 30-60-300 V AC/DC 30 V AC/DC: 100 V_{eff} 60 V AC/DC: 150 V_{eff} 300 V AC/DC: 440 V_{eff} 60 V AC/DC: 47 k Ω 60 V AC/DC: 100 k Ω 300 V AC/DC: 470 k Ω max.: $0,1 < U_n < 1,0$ min.: $0,05 < U_n < 0,95$

Insulation

Rated surge voltage		4 000 V AC
Overvoltage category		III PN-EN 60664-1
Insulation pollution degree		3 PN-EN 60664-1

General data

Electrical life	• resistive AC1	$\geq 2 \times 10^5$ 1 000 VA
Mechanical life (cycles)		$\geq 2 \times 10^7$
Dimensions (L x W x H)		90 x 22,5 x 103 mm
Weight		100 g
Ambient temperature	<ul style="list-style-type: none"> • storage, transport • operating 	-25...+70 °C -25...+55 °C PN-EN 60068-1 -25...+40 °C UL 508
Housing protection category		IP40
Relative humidity		15...85% PN-EN 60721-3-3 class 3K3
Shock resistance		15 g 11 ms PN-EN 60068-2-27
Vibration resistance		0,35 mm DA 10...55 Hz PN-EN 60068-2-6

Measuring circuit data

Functions		OVER, OVER+LATCH, UNDER, UNDER+LATCH, WIN, WIN+LATCH ❺ timing adjustment for start-up suppression time and tripping delay ❷
Time intervals (timing adjustment)		start-up suppression time (0...10 s) tripping delay (0,1...10 s)
Base accuracy		$\pm 5\%$ (calculate from final range value)
Setting accuracy		$\pm 5\%$ (calculate from final range value)
Repeatability		$\pm 2\%$
Wpływ napięcia		$\pm 0,5\%$
Temperature influence		$\pm 0,1\% / ^\circ\text{C}$
Recovery time		500 ms
LED indicator		green LED ON - indication of supply voltage green LED flashes - indication of start-up suppression time red LED ON/OFF - indication of failure ❸ red LED flashes - indication of tripping delay ❸ yellow LED ON/OFF - indication of output relay

❶ With adjustable thresholds.

❷ Separately adjustable.

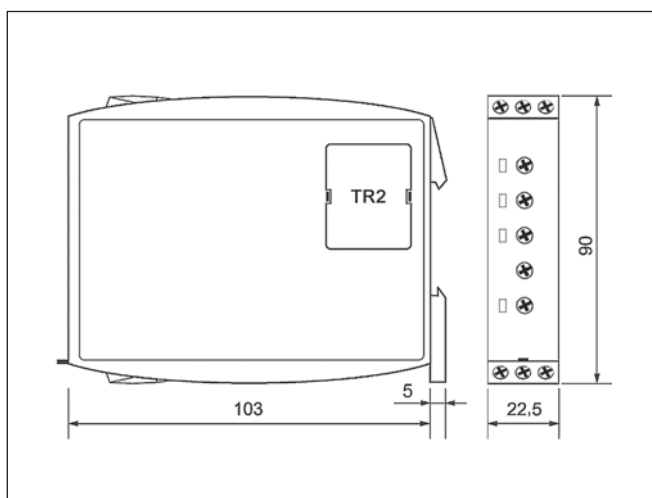
❸ TR2 transformers shall be ordered separately.

❹ Selectable via supply transformers TR2.

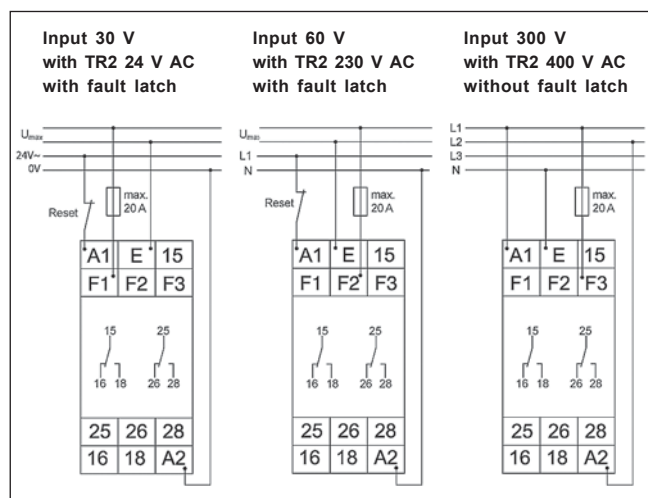
❺ Selectable by means of rotary switch.

❻ Of the corresponding threshold.

Dimensions



Connections diagrams



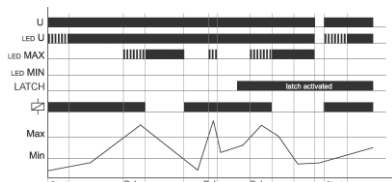
Mounting, mechanical design

Relays **MR-GU1M2P-TR2** are designed for direct mounting on 35 mm DIN rail mount, EN 50022. Mounting position: any. Self-extinguishing plastic housing, IP 40. Shockproof terminal connection according to VBG 4 (PZ1 required), IP 20. Maximum screw torque: 1,0 Nm. Terminal capacity: 1 x 0,5 do 2,5 mm² with/without multicore cable end, 1 x 4 mm² without multicore cable end, 2 x 0,5 do 1,5 mm² with/without multicore cable end, 2 x 2,5 mm² flexible without multicore cable end.

Functions

When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval of the start-up suppression (START) begins (green LED U flashes). Changes of the measured voltage during this period do not affect the state of the output relay R . After the interval has expired the green LED is illuminated steadily. For all the functions the LEDs MIN and MAX are flashing alternating, when the minimum value for the measured voltage was chosen to be greater than the maximum value.

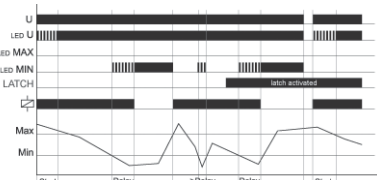
OVER, OVER+LATCH - overvoltage monitoring, overvoltage monitoring with fault latch



When the measured voltage 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 R switches into off-position (yellow LED not illuminated). The output relay R again switches into on-position (yellow LED illuminated), when the measured voltage falls below the value adjusted at the MIN-regulator (red LED MAX not illuminated). If the fault latch is activated (OVER+LATCH) and the measured voltage remains above the MAX-value longer than the set interval of the tripping delay, the output relay R remains in the off-position even if the measured voltage falls below the value adjusted at the MIN-regulator. After resetting the failure (interrupting and re-applying the supply

voltage), the output relay R again switches into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).

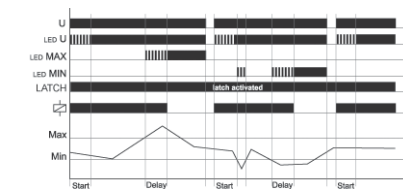
UNDER, UNDER+LATCH - undervoltage monitoring, undervoltage monitoring with fault latch



When the measured voltage 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 R switches into off-position (yellow LED not illuminated). The output relay R again switches into on-position (yellow LED illuminated), when the measured voltage exceeds the value adjusted at the MAX-regulator.

If the fault latch is activated (UNDER+LATCH) and the measured voltage remains below the MIN-value longer than the set interval of the tripping delay, the output relay R remains in the off-position even if the measured voltage exceeds the value adjusted at the MAX-regulator. After resetting the failure (interrupting and re-applying the supply voltage), the output relay R switches into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).

WIN, WIN+LATCH - voltage monitoring in windowfunction between MIN and MAX values, voltage monitoring in windowfunction between MIN and MAX values with fault latch



When the measured voltage 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 R switches into off-position (yellow LED not illuminated). The output relay R again switches into on-position (yellow 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, the set interval of the tripping delay (Delay) begins again (red LED MIN flashes). After the interval has expired (red LED MIN illuminated), the output relay R switches into off-position (yellow LED not illuminated). If the fault latch is activated (WIN+LATCH) and the measured voltage remains below the MIN-value longer than the set interval of the tripping delay, the output relay R remains in the off-position even if the measured voltage exceeds the value adjusted at the MIN-regulator. If the measured voltage remains above the MAX-value longer than the set interval of the tripping delay, the output relay R remains in the off-position even if the measured voltage falls below the value adjusted at the MAX-regulator. After resetting the failure (interrupting and re-applying the supply voltage), the output relay R switches into on-position and a new measuring cycle begins with the set interval of the start-up suppression (START).