

# RPN-1A..-A230

## monitoring relays



RPN-1A16-A230



- **Multifunctions monitoring relays (6 versions of relays, AC current monitoring in 1-phase network, with adjustable thresholds ①)**
- Minimum and maximum value monitoring • Windowfunction
- Fault latch mode • Tripping delay
- Cadmium - free contacts 1 CO • AC input voltages
- Cover - modular, width 17,5 mm
- Direct mounting on 35 mm rail mount acc. to EN 60715
- Compliance with standard EN 50178
- Recognitions, certifications, directives: RoHS, **CE ENEC**

### Output circuit - contact data

Number and type of contacts		1 CO	
Contact material		AgSnO <sub>2</sub>	
Max. switching voltage	AC	300 V	
Rated load	AC1	12 A / 250 V AC	
	DC1	12 A / 24 V DC	
	DC1	0,3 A / 250 V DC	
Rated current		12 A / 250 V AC	
Max. breaking capacity	AC1	4 000 VA	
Min. breaking capacity		1 W 10 mA	
Contact resistance		≤ 100 mΩ	
Max. operating frequency			
	• at rated load	AC1	600 cycles/hour
<b>Input circuit</b>			
Supply voltage	AC	230 V	
Rated voltage	50/60 Hz AC	230 V terminals (N)-L	
Must release voltage		AC: ≥ 0,1 U <sub>n</sub>	
Operating range of supply voltage		0,85...1,15 U <sub>n</sub>	
Rated power consumption		0,6 W	
Range of supply frequency	AC	48...63 Hz	
<b>Measuring circuit ②</b>			
• measured value		electrical current AC, RMS value, 50 Hz AC sinus, 48...63 Hz	
• measuring range		RPN-1A05   RPN-1A1   RPN-1A2   RPN-1A5   RPN-1A8   RPN-1A16	
		0,5 A   1 A   2 A   5 A   8 A   16 A	
• overload capacity		2 A   4 A   8 A   6,5 A   11 A   20 A	
• measuring terminals		Lk-N	
• measuring range		0,05...1,0 I <sub>n</sub>	
• input resistance		< 5 mΩ	
• switching thresholds		MIN: 0,05...0,95 I <sub>n</sub> MAX: 0,1...1,0 I <sub>n</sub>	
<b>Insulation according to EN 60664-1</b>			
Insulation rated voltage		250 V AC	
Rated surge voltage		4 000 V 1,2 / 50 μs	
Overvoltage category		III	
Insulation pollution degree		2	
Flammability class		V-0 UL 94	
Dielectric strength			
	• input - output		4 000 V AC type of insulation: basic
	• contact clearance		1 000 V AC type of clearance: micro-disconnection

① Codes of versions - see "Ordering codes", page 5.

② The measuring circuit is not galvanically insulated from the relay supply circuit.

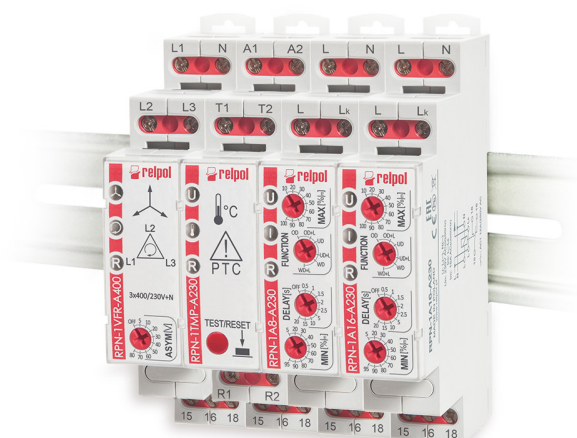
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## monitoring relays

### General data

Electrical life	• resistive AC1	> 0,5 x 10 <sup>5</sup>	12 A, 250 V AC
Mechanical life (cycles)		> 3 x 10 <sup>7</sup>	
Dimensions (L x W x H)		90 Ⓜ x 17,5 x 64,6 mm	
Weight		72 g	
Ambient temperature	• storage	-40...+70 °C	
(non-condensation and/or icing)	• operating	-20...+60 °C	
Cover protection category		IP 20	EN 60529
Relative humidity		up to 85%	
Shock resistance		15 g	
Vibration resistance		0,35 mm DA	10...55 Hz
<b>Measuring circuit data Ⓜ</b>			
Functions		OD (OVER D), OD+L (OVER D + LATCH), UD (UNDER D), UD+L (UNDER D + LATCH), WD (WIN D), WD+L (WIN D + LATCH)	
Current ranges		MIN - smooth adjustment: 5...95% MAX - smooth adjustment: 10...100%	
Time ranges of tripping delay		step adjustment: OFF - permanent switching off; 0,5 s; 1 s; 1,5 s; 2 s; 2,5 s; 5 s; 10 s; 15 s; 20 s	
Current setting accuracy		threshold limits: ± 10% Ⓦ	
Accuracy of delay time settings		threshold limits: ± 5% Ⓧ	
Values affecting the timing adjustment	• temperature	± 0,05% / °C	
	• supply voltage	± 0,01% / V	
Recovery time		≤ 200 ms	
LED indicator Ⓨ		green LED U - indication of supply voltage U, tripping delay, fault latch red LED I - indication of error yellow LED R - output relay status	

Ⓜ The measuring circuit is not galvanically insulated from the relay supply circuit. Ⓦ Length with 35 mm rail catches: 98,8 mm. Ⓧ From a measured value in the range of 0,2...1,0 In. Ⓨ Calculated from the final range values, for the setting direction from minimum to maximum. Ⓩ LED indication - see "Additional functions", page 4.





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## monitoring relays

### Additional functions

**LEDs:** green U, red I - are lit permanently or flashes at 500 ms and 250 ms period where it is lit for 50% of the time, and off for 50% of the time. Yellow R is lit permanently.

- it is possible to change the function during operation of the relay, which results in triggering operation with a new setting. It is not necessary to switch the supply off and on again for the relay to start operating with a new setting.

**Adjustment of the set values:**

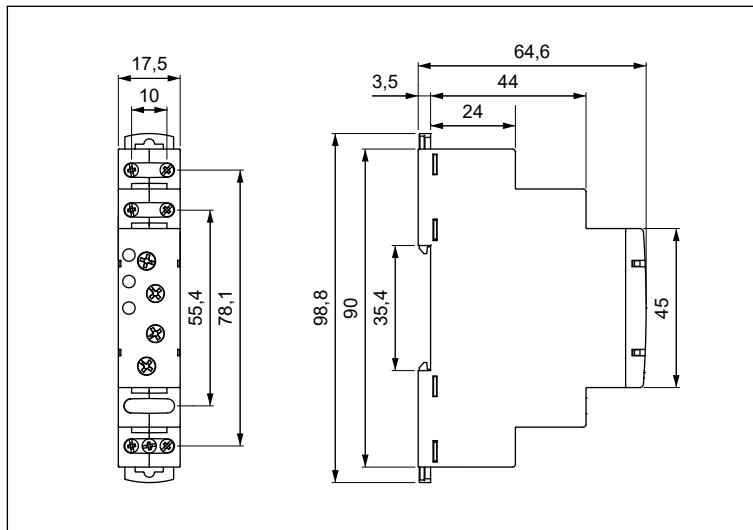
- the values of range of current and tripping delay are read in the course of the relay's operation. The set values may be modified at any moment,

**Supply:** the relay may be supplied with AC voltage 48...63 Hz of 195,5...264,5 V.

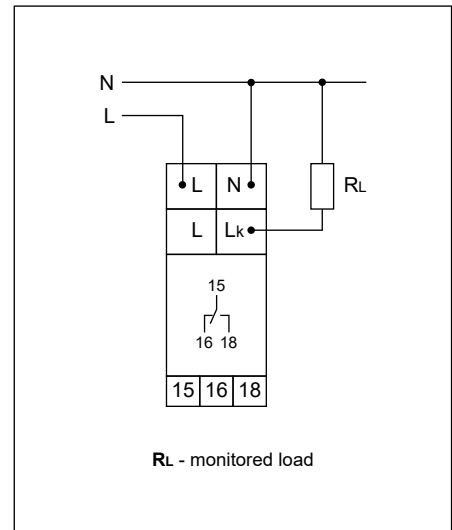
LED indication	U	I	R
green does not light up	power supply turned off	-	-
green lights up all the time	correct power supply	-	-
green slow flashes	measurement of the tripping delay time	-	-
green fast flashes	necessary error memory reset (power off and on)	-	-
red does not light up	-	function performed correctly	-
red lights up all the time	-	setting error ⑦ or function error	-
red slow flashes	-	there has been an excess of less than MIN	-
red fast flashes	-	there has been an excess above MAX	-
yellow does not light up	-	-	contact R disconnected
yellow lights up all the time	-	-	contact R connected

⑦ Measured current outside the range of MIN and MAX threshold limits - required correction of settings.

### Dimensions



### Connection diagram



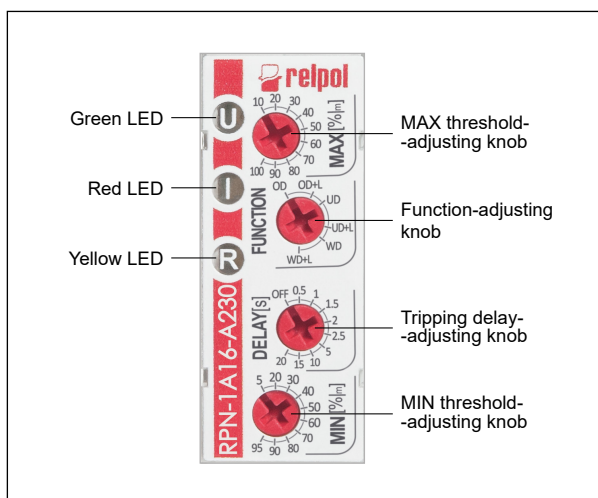
**PRECAUTIONS:**

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.

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### Front panel description

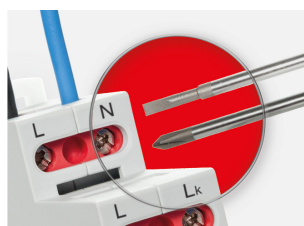


### Mounting

Relays **RPN-1A..-A230** are designed for direct mounting on 35 mm rail mount acc. to EN 60715. Operational position - any. **Connections:** max. cross section of the cables: 1 x 2,5 mm<sup>2</sup> (1 x 14 AWG), stripping length: 6,5 mm, max. tightening moment for the terminal: 0,5 Nm.

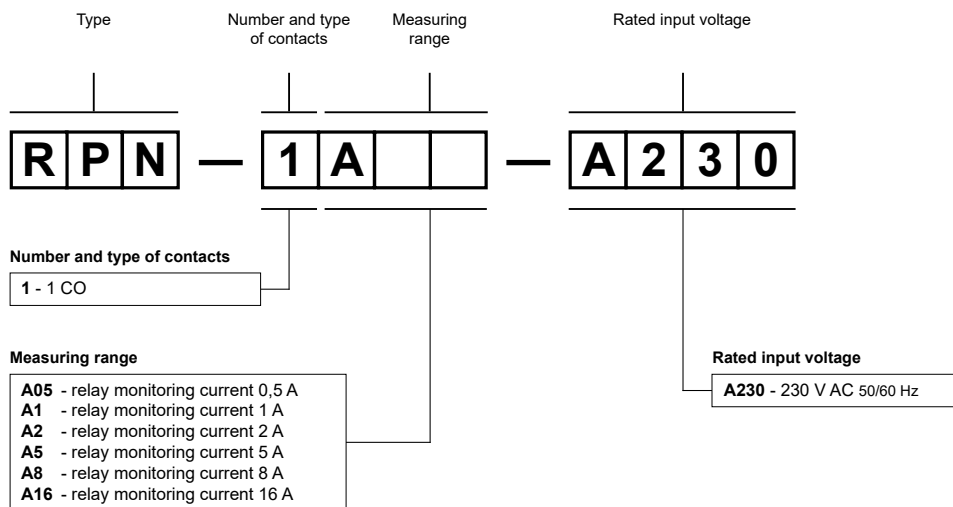


**Two catches:**  
easy mounting on 35 mm rail, firm hold (top and bottom).



**Mounting wires in clamps:**  
universal screw (cross-recessed or slotted head).

### Ordering codes



Examples of ordering codes:

**RPN-1A05-A230** monitoring relay **RPN-1A05-A230**, multifunction (relay perform 6 functions), cover - modular, width 17,5 mm, one changeover contact, contact material AgSnO<sub>2</sub>, rated input voltage 230 V AC 50/60 Hz, monitored current max. 0,5 A / 230 V AC

**RPN-1A16-A230** monitoring relay **RPN-1A16-A230**, multifunction (relay perform 6 functions), cover - modular, width 17,5 mm, one changeover contact, contact material AgSnO<sub>2</sub>, rated input voltage 230 V AC 50/60 Hz, monitored current max. 16 A / 230 V AC