



**DATA SHEET**  
**undervoltage measuring relay**  
**RUR 1**  
**for 3-phase networks**  
**Article number 09980717**



**Function**

Undervoltage measuring relays or undervoltage trips are monitoring relays that detect when a minimum supply voltage has been breached and reports this, usually via a relay, to superordinate controls or signalling devices. They are used to switch off electrical devices, machines and systems when voltage is too low and prevent them from automatically switching back on after a power failure. The RUR series monitoring relays make it possible to report undervoltage with a fixed hysteresis. The output relay energises when the measured voltage of all connected outer conductors exceed the fixed switching threshold including the hysteresis. If the voltage of one of the connected outer conductors drops below the switching threshold value, the output relay switches off again. A front LED indicates the current status. The changeover contact allows for flexible use. The RUR 1 has a fixed set switching threshold as per VDE 0108.

**Features**

RUR 1 switching threshold:  $0.85 \times U_n$ , RUR 3 switching threshold: adjustable from 160 V ... 240 V, no external supply voltage necessary, potential-free changeover contact, Module width just 1 unit, protection class IP 20

**Mounting**

quick fastening to mounting rail, any installation position

**Applications**

Automatic control of emergency generators and emergency lighting in all types of buildings and industrial facilities.

**Notes**

Single-phase networks can be monitored by wiring all measuring inputs with an external conductor. When electrical consumers generate reverse voltages higher than the  $U_s$  threshold, the failure of an external conductor can no longer be detected.

**Technical Data**

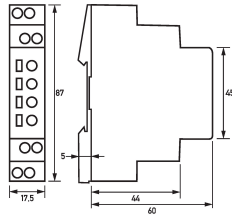
Technical Data	RUR 1
Series	RUR 1
Accuracy textual	$\leq 5\%$ from the mains frequency
Number of (n.o, n.c.,change-over)	0 0 1
Tripping delay	200 ms
Adjustability, delay	fixed
Hysteresis relative	5 %
Temperature impact	1 %
Operating voltage (AC)	230 V, 400 V (161 V ... 440 V)
Operating frequency	48 Hz ... 63 Hz
Internal consumption	max. 5 W
Rated impulse withstand voltage	4 kV
	<b>Display (status output)</b>
Number	1
Type	LED (yellow)
	<b>control input</b>
Rated voltage (AC)	195.5 V

Subject to technical changes

Technical Data	RUR 1
Tolerance of rated voltage	-30 % ... 10 %
Rated impulse withstand voltage	4 kV
Rated frequency	48 Hz ... 63 Hz
	<b>load circuit</b>
Specification	relays
Rated voltage (AC)	250 V
Rated current (AC)	max. 5 A
Rated power	max. 1250 VA
Rated impulse withstand voltage	4 kV
Rated frequency	48 Hz ... 63 Hz
Switching frequency	max. 60 1/min (at 100 VA ohmic load, max. 6/min at 1000 VA ohmic load)
Overtoltage class	III
	<b>screw-type terminal (load circuit)</b>
Cross section solid	1-wire: 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> ; 2-wire: 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Connecting capacity flexible	1-wire: 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Cross section flexible with ferrule	0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Tightening torque	max. 1 Nm
	<b>General data</b>
Recovery time	500 ms
Operating position	optional
Mechanical endurance	min. 200 · 10 <sup>6</sup> switching cycles
Electrical endurance	min. 2 · 10 <sup>6</sup> switching cycles (1000 VA, ohmic load)
Storage temperature	-25 °C ... 70 °C
Ambient temperature	-25 °C ... 55 °C
Permissible humidity	15 % ... 85 %
Shock resistance	15 g / 11 ms Duration
Housing type	distribution board housing
Installation type	Mounting rail (35 mm)
Housing material	thermoplastic
Protection class	IP40
Width	17.5 mm
Height	87 mm
Depth	65 mm
Installation depth	60 mm
Module widths	1
Weight	0.072 kg
Design requirements/Standards	EN 60715, EN 60664-1, EN 60947-5-1, EN 60068-1, EN 60721-3-3, EN 60068-2-6, EN 60068-2-27
Degree of pollution	2

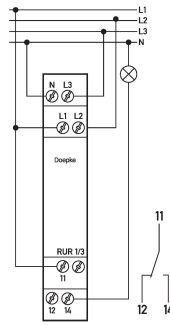
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Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram