

# UNDERVOLTAGE RELAY

- Monitoring of .....: **Alternating voltage**
- Message of .....: **Voltage drop**
- with adjustable hysteresis and time delay
- without auxiliary voltage



## Function description

The RUWH-M relay is used to monitor voltage drops in alternating current grids. It provides 2 floating changeover contacts as a message output.

If the alternating voltage is above the trigger value, then the green LED is illuminated and the output contacts 4 - 6 and 10 - 12 are closed. If the alternating voltage is below the trigger value, then the display changes from the green to the red LED. If the drop takes longer than the set delay time, then the output contacts 2 - 4 and 8 - 10 will be closed. The time delay is also effective in case of a total voltage failure.

The contacts switch immediately if the trigger value plus the set hysteresis have been exceeded. The trigger value, the hysteresis and the time delay are continuously adjustable.

The contact position in the circuit diagram is valid for undervoltage and for the condition without voltage. It is recommended to connect the relay for a few seconds to the nominal voltage before the relay is installed to guarantee the correct starting position of the contacts before the voltage is connected.

Housing: Plastic housing type KS 1-01 with locking bracket, matching the plug base "U" for fastening on a mounting plate or plug base "K" with adapter for rail installation, screw connections max 2x4 mm<sup>2</sup>.

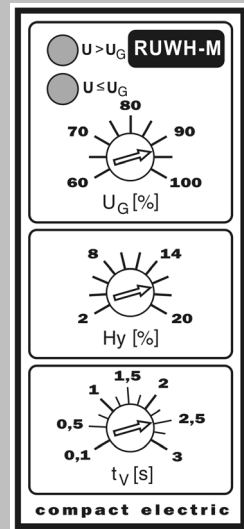
## Technical data

(Special specifications on request)

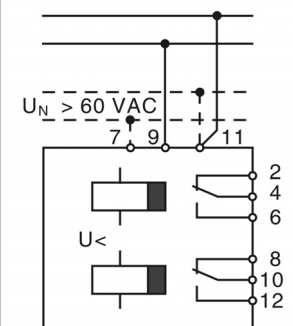
- Nominal voltage  $U_N$  ..... : 110 V AC, 230 V AC
- Adjustment range  $U_G$  ..... : 60 - 100%  $U_N$
- Hysteresis ..... : 2% - 20% of the trigger value
- Time delay  $t_v$  ..... : 0.1 - 3 s oder 1 - 10 s,
- Nominal consumption ..... : app. 2 VA
- Time to return to standby after power loss ..... :  $\leq 0.3$  s
- Frequency ranges ..... : 45 - 60 Hz (16 <sup>2</sup>/<sub>3</sub> Hz possible)
- Operating ambient temperature : 0 - +60 °C

When ordering, please list **nominal voltage, time delay and frequency range**.

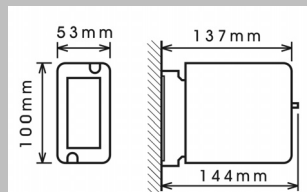
# RUWH-M



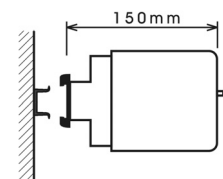
front view



wiring diagram



Socket Type U



Socket Type K

dimensions

# UNDERVOLTAGE RELAY

# RUWH-M

## Output contacts (2 changeover contacts)

Nominal/max. switching voltage .....	250 V / 380 V AC
Nominal/max. switching current .....	8 A / 8 A AC
Nominal switching capacity .....	2000 VA (cos $\varphi$ = 1)
Switching capacity .....	250 V / 8 A AC (cos $\varphi$ = 1)
	250 V / 4 A AC (cos $\varphi$ = 0.4)
	250 V / 0.4 A DC (6 * 10 <sup>3</sup> switching cycles)
	30 V / 5 A DC (6 * 10 <sup>3</sup> switching cycles)
Electrical service life .....	10 <sup>5</sup> switching cycles
Mechanical service life .....	10 <sup>6</sup> switching cycles
Contact material .....	Gold on silver alloy

Test voltage in accordance  
with IEC 255-5 .....

Alternating voltage	2,5 kV <sub>eff</sub> / 1 min
Surge voltage	5 kV 1.2/50 $\mu$ s

Mechanical stability .....

IEC 255-21-1 class 1
IEC 255-21-2 class 1
IEC 255-21-3

Usage position .....

any
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## Interference resistance

EN50082-2 (Industry)  
IEC 255-22-1 1 MHz Interference test class III (2,5 kV)  
IEC 255-22-2 (IEC801-2) ESD Interference resistance class III (8 kV)  
IEC 801-3 HF Interference resistance 10 V/m  
IEC 255-22-4 (IEC801-4) Burst class III, 2 kV 5/50 ns 5 kHz 15 ms

## Maximum EMC influence at nominal operating conditions

Switching point displacement .....	$\leq$ 3%
Trigger time displacement .....	$\leq$ 10%

## Interference emission

EN50082-1 (small industry)

Protection class .....	IP 40
Housing material .....	Polycarbonate
Burning behavior .....	UL 94 V-0, self extinguishing
Weight .....	0.3 kg

## Installation information

- 1) A distance of at least 1.5 cm to other devices and metallic surfaces must be adhered to at the side to guarantee the listed EMC interference resistance.
- 2) The relay can be secured against pulling off the pedestal using the two locking brackets of the housing. For locking, the brackets must be pressed at the outside notch (with a screwdriver) until they latch into the pedestal. The brackets will be unlocked by pressing the inner notch.

Subject to technical changes

