



The **RK-HGR1** indoor hygrostat is a device designed to monitor and regulate relative air humidity (RH). It is adapted for direct mounting on an interior wall or on a standard installation box with a pitch of 60mm.

The total adjustment range is 10 ÷ 90%RH, for finer adjustment divided into 2 adjustment ranges by a potentiometer, 10 ÷ 50 and 50 ÷ 90%RH. The desired value is set on the potentiometer with a small flat screwdriver.

The hysteresis of the output relay switching is selectable 5 or 10%RH. The device has a selectable humidification and dehumidification function.

The output is a potential-free output contact of the relay 6A / AC1, normally open. The supply voltage is 230VAC, 24VAC or 24VDC, depending on the type.

List of available types

230V/50Hz RK- HGR1/230	24V/50Hz RK- HGR1/24AC	24VDC RK- HGR1/24DC
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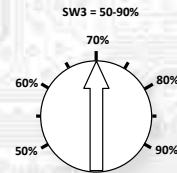
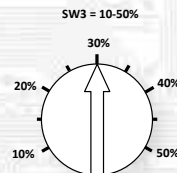
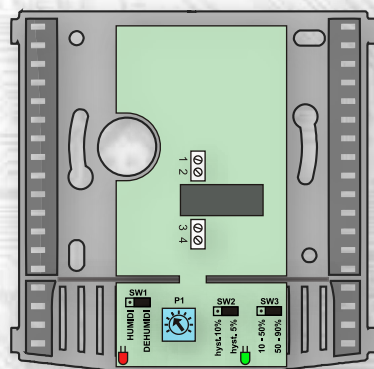
Basic technical parameters

Supply voltage	RK- HGR1/230 = 230V/50Hz ±10% RK- HGR1/24AC = 24V/50Hz ±10% RK- HGR1/24DC = 24VDC ±10%
Power consumption	max. 0,5VA
RH comparison level setting range	selectable by jumper 10÷50% / 50÷90%
Accuracy of relative humidity (+25°C)	± 5 % (20 ÷ 80 %RH)
Type of used sensor T+RH	SHT31
Range of working temperature / RH	-10 ÷ 50°C / 10 ÷ 95 %RH no condensation see: Working conditions of sensor SHT31
Range of recommended storage temp./RH	10 ÷ 50 °C / 20 ÷ 60 %RH
Protection type	IP40 (EN 60529)
Terminal board	COB (wires 2,5 mm ²)
Dimensions	103 x 100 x 25 mm
Regulation type	Two-state
Hysteresis	Optional 5% / 10%
Relay output....voltage/current	250 VAC / 6 A (cos φ = 1) 24 VDC / 6 A (cos φ = 1)
Max. relay switching power	2000 VA / 192 W
Min. service life (number of cycles)	20 x 10 ⁶
Galvanic separation of relay	yes < 250V
External fuse	16 A

Working conditions of the sensor SHT31:

The sensor steadily works within the recommended measurement range that is 5 ÷ 60 °C and 20 ÷ 80 % RH. The long-term exposition to the high humidity, namely >80% RH causes the gradually increasing reading deviation of RH (+3% RH after 60 hours >80% RH). After returning back to normal range the RH measurement gets slowly back to calibrated values.

Layout of connecting terminals and connectors (fig. 1)



10 - 50%
50 - 90%

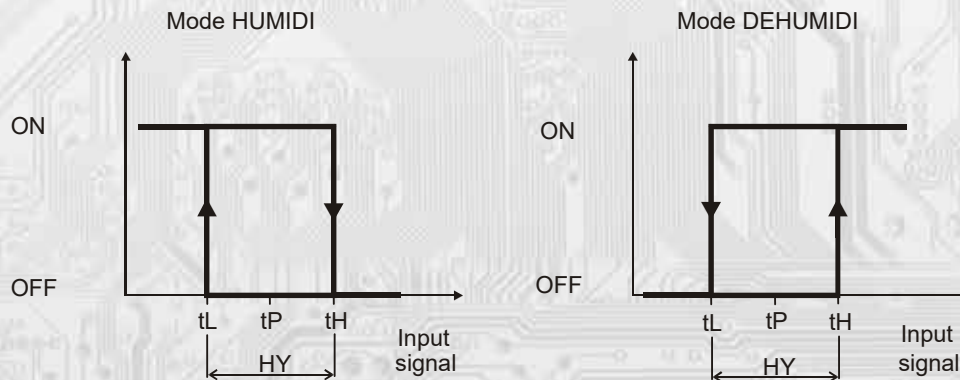
10 - 50%
50 - 90%

- Terminal 1..... Supply voltage, (RK-HGR1/24DC... positive pole)
- Terminal 2..... Supply voltage, (RK-HGR1/24DC... negative pole)
- Terminal 3..... Relay output contact
- Terminal 4..... Relay output contact

- SW1..... Humidification (HUMIDI) or dehumidification (DEHUMIDI) function selection
- SW2..... 5% or 10% hysteresis selection
- SW3..... Selection of adjustment range by trimmer P1 10+50% or 50+90%

- LED green..... Indication of connected supply voltage
- LED red..... Indication of closed relay

Function of relay (fig.2):



Upper and lower switching value:

$$tL = tP - (HY / 2) \quad tH = tP + (HY / 2) \quad \text{where: } tL \dots \text{lower switching value}$$

$$tH \dots \text{upper switching value}$$

$$tP \dots \text{comparison value set by trimmer P1}$$

$$HY \dots \text{set hysteresis (5% or 10% according SW3)}$$

For example... for : $tP = 60\%$, $HY = 10\%$ will $tL = 55\%$ and $tH = 65\%$

Assembly and connection:

The devices are intended for direct mounting on the wall or on the KU68 installation box. First, the lid is removed, which makes the terminal block and mounting holes accessible. The base is screwed to the interior wall or to a standard installation box with a spacing of 60mm using two screws.

The electrical connection of the lead wire of the recommended cross-section and diameter is made on the terminal block (Fig. 1). By attaching the perforated cover, the sensor is ready for operation.