HR-S

Room humidistat

HR-S is an electro-mechanichal room humidistat for controlling humidification and/or dehumidification in HVAC systems.

✓ 1-step
✓ Protection class IP30
✓ High reliability and accuracy
✓ Changeover contact

Function

The humidistat uses a synthetic element as sensor medium. The synthetic element stretches as the humidity increases and shrinks as the humidity decreases. These changes are transmitted to a microswitch.

Synthetic element

We have developed a new synthetic element that gives a high accuracy at a low cost.

Typical applications

Can be used to control a humidifier or a dehumidifier or for on/off controll of a fan. Can also be used to alarm when the humidity exceeds or falls below a pre-set level.

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Technical data

1 Electrical

Operating mode	Changeover contact
Switching capacity at AC voltage	Rated voltage: 24…250 VAC Rated current: 0.1 … 5 A with resistive load for dehumidification 0.1 … 2 A with resistive load for humidification [1] 0.1 … 1 A with inductive load (power factor > 0.8)
Switching capacity at DC voltage	Rated voltage: 24…48 VDC Rated power: ≤ 20 W
Service life	> 6,000 switching cycles
Connection	Three-pole terminal with wire protection [2]
Connection wire cross-section	Solid wire up to 2.5 mm² Stranded wire up to 1.5 mm²
Function Humidify	Terminal 1 and terminal 2 closed
Function Dehumidify	Terminal 1 and terminal 3 closed

[1] Reason for the limitation to 2 A: Heating due to electrical load has an unfavourable effect in the "Dehumidify" function.

[2] Terminals with wire protection are used for the series.

2 Measuring Element

Measuring element, material	Polyga® measuring element (synthetic fiber)
Temperature influence, relative to 23 °C	≤ ±0.2 % RH/K
Long-term drift	≤ ±1 % RH per year

3 Ambient Conditions

Permissible temperature for storage and transport	-30…+60 °C
Permissible operating temperature	0...60 °C
Permissible ambient humidity	≤95% RH @ Ub ≥ 48 V
Installation altitude	≤ 4,000 m above sea level
Medium	Clean air, atmospheric pressure

4 Dynamic values

Permissible air velocity	v = 0.2...8 m/s
Response time [3]	t50 = 2.5 min @ v = 2 m/s
Heating due to electrical load [3]	≥ 1.5 K/kW @ v = 0.2 m/s

[3] The value depends on the housing.

5 Switching / Control Behavior

Scale setting range	30…100 % RH
Control range	40...90 % RH
Factory calibration	at 48 % RH / 23 °C
Switching differential (typical)	5% RH (±1% RH) @ Setpoint = 50% RH 3% RH (±1% RH) @ Setpoint = 80% RH

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Tolerance of average switching point (typical)	±4% RH
Hysteresis (typical)	3% RH

6 Other

Changeover contact	Max. breaking capacity: Resistive load, dehumidifying 5 A 250 V AC, resistive load, humidifying 2 A 250 V AC, inductive load (power factor >0,8) 1 A 250 V AC. Min. switching current 100 mA [4]
Mounting	Wall mounting
Protection class	IP30
Dimensions (mm)	86 x 86 x 30 mm

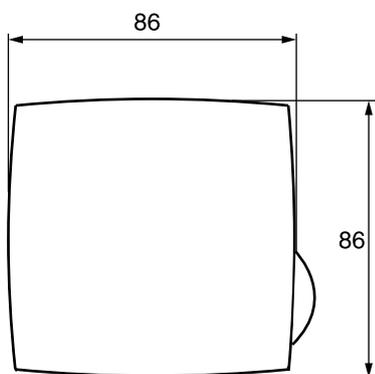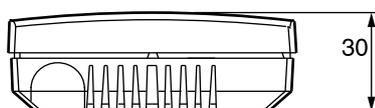[4] Not relevant when switching high resistance loads (>10 kOhm) e.g. logic levels

CE

This product carries the CE-mark. More information is available at www.regincontrols.com.

Material

Material, housing	Polycarbonate (PC)
Colour, housing	RAL9010

Dimensions
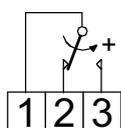

[mm]

Wiring

Humidification: Closing contact between terminals 1 and 2

Dehumidification: Closing contact between terminals 1 and 3

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Documentation

All documentation can be downloaded from www.regincontrols.com.

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