FSR01

Hygrostat for controlling rel. humidity

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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» APPLICATION

Room humidistat for controlling air humidification and dehumidification (based on relative humidity) in offices and computer rooms. Other areas of application include the storage of foodstuffs and luxury foods, cold storage rooms for fruit and vegetables, greenhouses in horticultural businesses, the textile industry, the paper and printing industry, the film industry and hospitals.

» TYPES AVAILABLE

Room hygrostat

- FSR01
- FSR01-I
  (internal threshold setting)

» SECURITY ADVICE – CAUTION

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.
CAUTION! Risk of electric shock due to live parts inside the appliance. At low voltage (over 50V), touching these can lead to personal injury or death!

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» PRODUCT TESTING AND CERTIFICATION

Declaration of conformity
The declaration of conformity of the products are available on our website
https://www.thermokon.de/direct/en-gb/categories/fsr01

» NOTES ON DISPOSAL

The crossed-out wheelie bin symbol indicates that the product must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: www.thermokon.com

»TECHNICAL DATA

Measuring values	Relative humidity	
Medium	air	
Output switch contact	change over contact, floating dehumidifying, max. 5 A 250 V AC, 1 A Inductive, min. 100 mA* humidifying, max. 2 A 250 V AC, 1 A Inductive, min. 100 mA* *Minimum switching current 100 mA, not relevant when switching high-impedance loads (> 10kOhm) like logic levels	
Measuring range relative humidity	30..100 % rH non-condensing	
Humidity control range	40..90% rH	
Accuracy humidty	±3% rH (typ. at 50% rH) Average temperature coefficient -0,2% / K, typ at 20 °C, 50% rH	
Sensor	plastic fibers	
Enclosure	plasic, white	
Protection	IP30 according to EN 60529	
Cable entry	breaking points bottom, rear entry	
Connection electrical	terminal block, max. 1,5 mm²	
Ambient condition	0..+60 °C | max.95% relative humidity (non-condensing)	
Mounting	surface mounted on flush-mounting box (Ø=60 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately	
Notes	**FSR01** threshold adjustment via potentiometer	**FSR01-I** Internal threshold adjustment

»DESCRIPTION OF THE HYGROSTAT

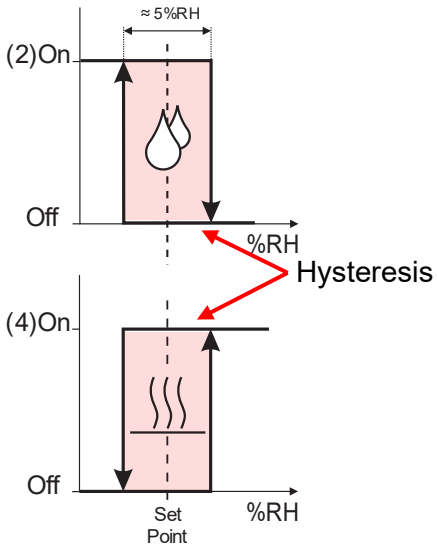
The humidity measuring element consists of several plastic fabric bands each with 90 individual fibres with a diameter of 3 µm each. The fibres are provided with hygroscopic characteristics by a special process. The measuring element adsorbs and desorbs moisture. The effect, swelling predominantly in longitudinal direction, is transmitted via a lever system to a microswitch with a small switching distance. The measuring element responds to the change in air humidity. It is possible to adjust the lever system by setting the adjustment knob so that the microswitch is actuated when the set air humidity is reached.

The fan shaped measuring element is accommodated inside the housing and must be protected against coarse dust, dirt and water. The humidistats are designed for pressureless systems. The installation location must be selected so that condensed water cannot enter the inside of the housing. The installation position preferably with ventilation slots at right-angles to wind direction.

For relative humidity measurements, the temperature must be constant and the air homogeneous.

»TYPICAL SWITCHING DIFFERENTIAL

Humidity setpoint	Switching humidity difference	Tolerance
90% rH	3% rH	±1% rH
80% rH	3% rH	±1% rH
70% rH	4% rh	±1,5% rH
60% rh	4% rH	±1,5% rH
50% rH	5% rH	±1,5% rH



» MOUNTING ADVICES

The device can be mounted on a flat wall surface or on a flush-mounted box. A representative location for the media to be measured should be selected. **The hygrostat should be located in the air flow.**

When mounting on a flush-mounted box, the use of sealed installation boxes is recommended. Sunlight on the device and draughts, e.g. in the installation pipe, must be avoided so that the measurement result is not distorted. If necessary, the end of the installation pipe must be sealed.

(1) De-energize the device for installation!

(2) Open the housing. The base plate and upper part are detachably connected to each other by means of locking lugs.

(3) Mount the base plate on a flat wall surface using dowels and screws.

(4) (For devices with internal setting: Setting the switching point. In the case of the FSR01-I the external adjustment knob is replaced with an adjustment wheel with a scale inside the housing. The adjustment wheel needs to be aligned to the red mark.)

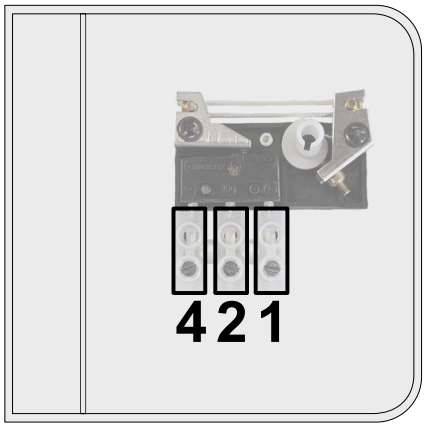
(5) Cover assembly: Hanging in and folding shut

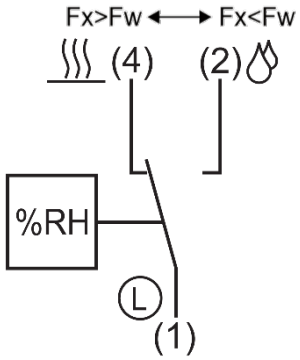
(6) Fitting the rotary knob - after positioning the groove and bar.

» OPENING THE ENCLOSURE

Place the slotted screwdriver at the top of the locking slots and press inwards until the housing pops open.

» TERMINAL CONNECTION PLAN





Fx: rel. humidity of the air (actual value)
Fw: humidity adjusted with the wheel (set point)

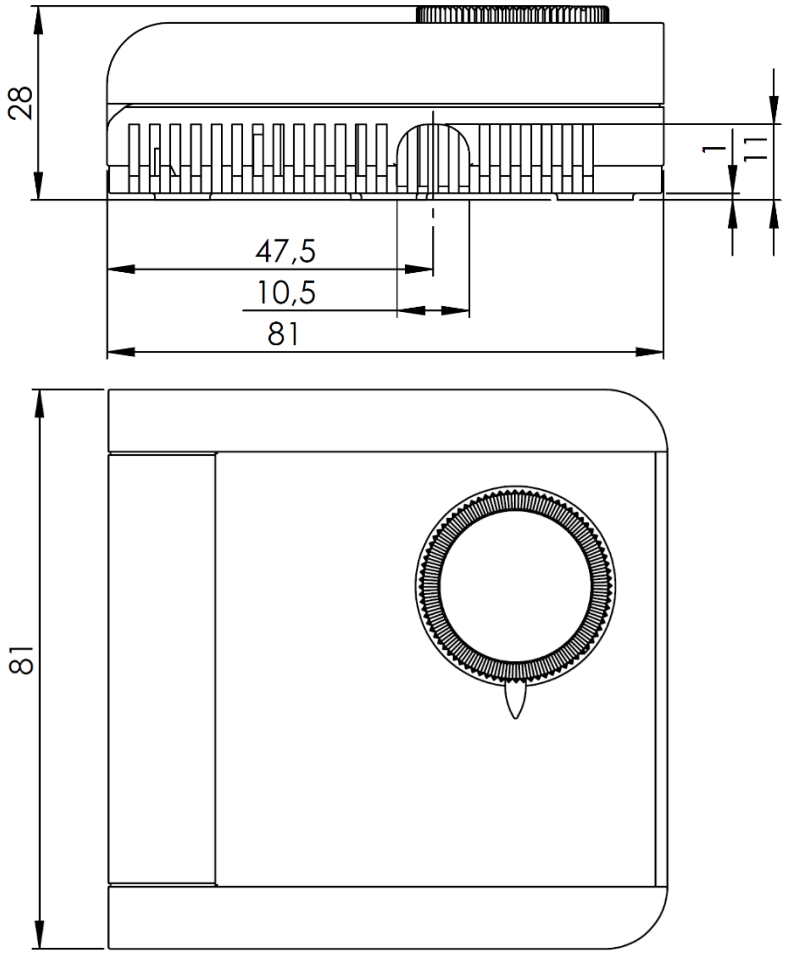
If the rel. humidity Fx (actual value) decreases below set point value Fw, contact 1/4 will open and contact 1/2 will close.

» CLEANING ADVICE

1.	Disconnect the device from the power supply!
2.	Remove the housing cover. Clean the string-shaped measuring element with a soft brush and clear water. **Do not use cleaning agents as they cannot be washed out.** **Water must not be allowed to reach the other components**, in particular the microswitch, the terminals or the circuit board.
3.	Air drying. Do not use warm or hot air (hair dryer).

The measuring element is maintenance-free with pure circulating air.
However, aggressive media and media containing solvents can cause incorrect measurements depending on their type and concentration. Precipitation that forms a water-repellent film over the measuring element is harmful (e.g. resin aerosols, paint aerosols, fumigants, etc.).

»DIMENSIONS (MM)



»ACCESSORIES (OPTIONAL)

Wall plugs and screws (2 pieces each) Item No.: 102209