

## Room Hygrostats

for relative humidity

## QFA81...



QFA81.1



QFA81

**On/off hygrostat with microswitch,  
with humidity sensor,  
with plastic texture sensing strip (good linearity, wide measuring range),  
for the control of humidification equipment,  
for the control of dehumidification equipment,  
for direct wall mounting or mounting on recessed conduit boxes**

### Use

The hygrostats are designed for controlling and monitoring the relative humidity in ventilating and air conditioning plants.

They control the humidity content of the room air within an adjustable range of 30 to 100 % r.h.

They can also be used for monitoring a minimum or maximum humidity level.

### Type summary

Type reference	Setpoint range ( $W_h$ )	Switching differential ( $X_d$ )	Setpoint adjustment
<b>QFA81</b>	30...100 % r.h.	approx. 4 % r.h.	externally
<b>QFA81.1</b>	30...100 % r.h.	approx. 4 % r.h.	internally

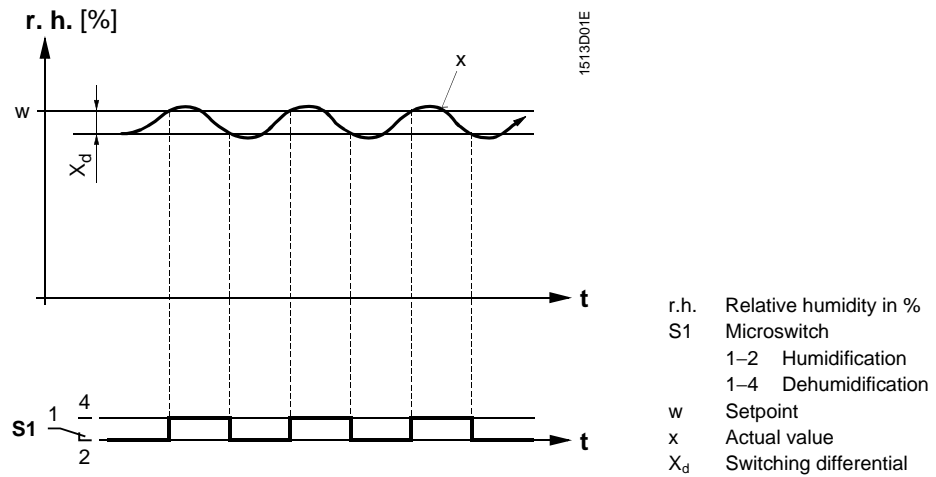
### Ordering

When ordering, please give name and type reference; for example:  
room hygrostat **QFA81**

### Mode of operation

The hygrostat acquires the relative humidity of the room air with its plastic texture sensing strip. The strip actuates a microswitch with a fixed switching differential  $X_d$  and a potential-free contact output (S.P.D.T.), depending on the relative humidity of the air. If the actual humidity deviates from the adjusted setpoint, the hygrostat switches the associated humidification or dehumidification equipment on or off as shown in the following function diagram.

Function diagram



If the relative humidity exceeds the adjusted setpoint, the potential-free contact of the microswitch will change over from 1-2 to 1-4. If the relative humidity falls by the amount of the fixed switching differential  $X_d$ , the contact will return to the position 1-2.

**Mechanical design**

QFA81

The hygostat is designed for wall mounting. It can be fitted to most commercially available recessed conduit boxes. The cables can be introduced from the rear (concealed wiring) or from above (surface-run wires) through knockout openings.

The unit consists of base and cover. Both snap together and can be detached again. The base accommodates a printed circuit board which carries the humidity sensing element (plastic texture strip), the setpoint adjusting element with the spindle, scale, microswitch, and connection terminals.

The cover houses the detachable setpoint knob with the setting scale and a concealed mechanical setpoint limitation facility.

QFA81.1

Same design as the QFA81, but with a cover with no setpoint knob and no setpoint limitation facility. The setpoint can be adjusted only when the cover is removed.

**Setting elements**

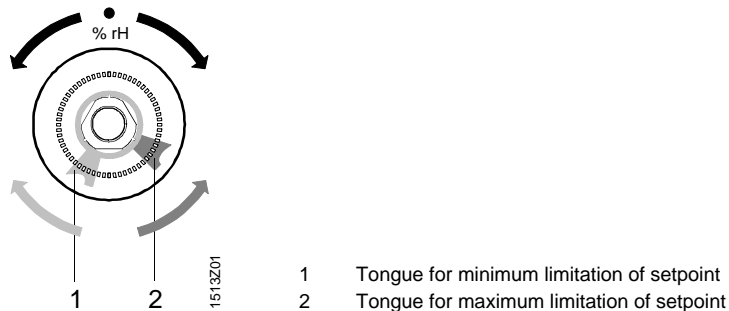
QFA81

*Setpoint knob*

Using the setpoint knob, the setpoint can be adjusted in the range 30...100 % r.h.

*Setpoint limitation*

After removal of the setpoint knob, the setpoint can be mechanically limited to a minimum or maximum value by appropriate setting of the tongues.



QFA81.1

*Setpoint spindle*

The setpoint can only be changed with the spindle after removal of the cover.

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## Mounting notes

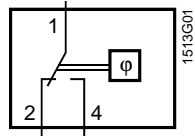
Mounting location	<p>The hygrostat should be mounted on an inner wall approximately 1.5 m above the floor and at least 0.5 m from the next wall.</p> <p>At the location where the unit is mounted, there should be a natural circulation of room air (no draughts, no corners of the room, not behind curtains, not too close to doors and windows, and not on an outer wall). Sources of heat and refrigeration (radiators, computers, TV sets, concealed heating pipes, hot or cold water pipes) must be in an adequate distance.</p> <p>The hygrostat should not be exposed to direct solar radiation.</p>
Mounting instructions	<p>The unit is supplied with mounting instructions.</p>

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## Technical data

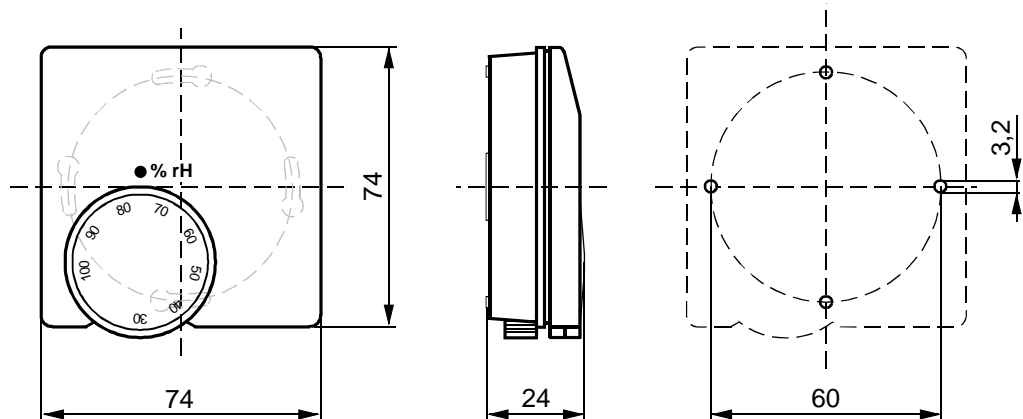
Setpoint range	30...100 % r.h.
Control mode	on/off
Switching differential	approx. 4 % r.h. (fixed)
Type of switch	potential-free microswitch (S.P.D.T.)
Contact rating	
Humidification	
Maximum	5 (0.2) A, AC 250 V
Minimum	100 mA, AC 24 V
Dehumidification	
Maximum	3 (0.2) A, AC 250 V
Minimum	100 mA, AC 24 V
Perm. ambient temperature	
Operation	10...60 °C
Storage	-20...+70 °C
Degree of protection	IP 30 to EN 60 529
Safety class	II to EN 60 730
<b>CE</b> conformity to low voltage directive	73/23/EEC
Radio interference protection	to DIN 55 014
Connection terminals for	0.5 mm dia. min. 2 x 1.5 mm <sup>2</sup> max.
Materials	
Sensing element	plastic texture
Casing	plastic (ABS)
Weight	approx. 0.06 kg

## Internal diagram



- 1-2 Humidification
- 1-4 Dehumidification

## Dimensions



Drilling template for wall mounting