



- Hygrometric method of measurement
- Two-position controller for relative humidity
- Recommended operating range:  
35... 100 % rH,  
0... 60 °C
- Measurement in air ducts or indoors



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**Model:**  
AFS-G1



## Description

The Hygrostat AFS-G1 serves as a two-position controller to regulate relative humidity indoors or in air ducts.

The moisture sensing element in the sensor comprises several strips of plastic fabric each with 90 fibres of 3 µm diameter. These plastic fibres undergo a special process to acquire hygroscopic properties, this means that they absorb and release moisture. The molecular structure of the fibres changes when they absorb water, giving rise to a measurable change in length. The length of the plastic fibres is thus a measure of the relative humidity.

The swelling effect, acting primarily in longitudinal direction, is transferred over a suitable lever system to a microswitch with an extremely small changeover movement.

The measuring element reacts quickly and accurately to the change in humidity. The setpoint is set with the setpoint button so that the microswitch is actuated by the lever system when the humidity setpoint is reached.

The special treatment of the measuring element ensures that its hygroscopic properties remain stable, that is sensitivity is maintained until destroyed by external influence. Regeneration found in conventional instruments is not required, but is also not damaging.

The harp-shaped measuring element is protected by a perforated probe tube and is open to the housing.

The hygrometers are designed for unpressurized systems.

## Application examples

### Control of humidifiers and dehumidifiers:

- Building management systems
- Warehousing of foodstuffs and semi-luxury foods and tobacco
- Refrigerated rooms for fruit and vegetables
- Grain dryers
- Glasshouses for horticultural businesses
- Textile industry
- Paper industry and printing trade
- Film industry
- Hospitals
- Air ducts in air conditioning systems
- Air-conditioning cabinets

## Technical Details

### Physical Details:

Measuring range (full scale range):	30...100% rH
Measuring accuracy:	> 50% rH: ±3.5% rH < 50% rH: ±4.0% rH
Setting range (operating range):	35...100% rH
Measured medium:	air, pressureless, non-aggressive

### Switch contact

Differential gap (microswitch):	approximately 3...6% rH
Max. voltage:	250 V <sub>AC</sub> <i>(Important! 250 V only when it is certain that no condensate forms in the sensing element, as otherwise an arc can occur)</i>

### Switching capacity of the changeover contact

• Resistive load:	15 A, 230 V <sub>AC</sub>
• Inductive load (cosφ = 0.7):	2 A, 230 V <sub>AC</sub>
• Minimum contact rating:	100 mA, 125 V <sub>AC</sub>
Contact material:	silver

### General

Allowed ambient temperature:	-30...+60°C
Allowed operating temperature:	0...60°C
Average temperature coefficient:	-0.2% rH/K (at 20°C and 50% rH)
Allowed air speed:	8 m/s with gauze protection (optional) 15 m/s

Time constant	
T <sub>63</sub> at v = 2 m/s:	120 s
Sensor length:	220 mm
Sensor material:	stainless steel
Mounting:	bore holes in housing base for duct mounting bracket for surface mounting (optional)

Installation position: sensor vertical pointing down, or horizontal

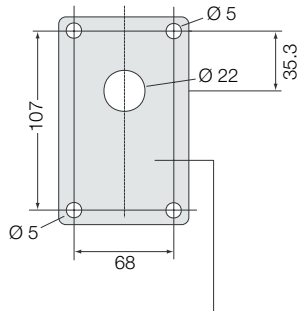
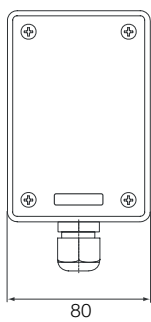
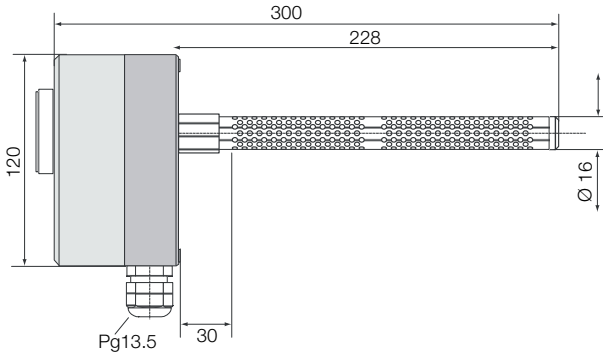
Connection terminals: for conductor cross-sections to 1.5 mm

Cable connection: cable gland Pg 13.5

### Electromagnetic compatibility

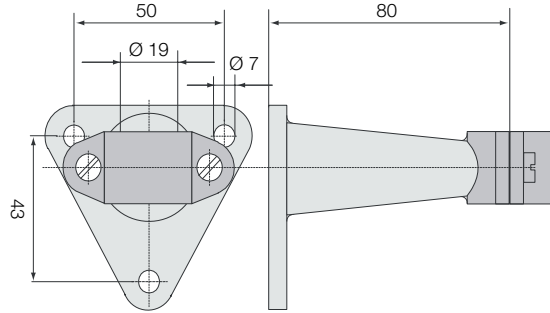
• Noise immunity:	EN 50 082-2
• Emitted interference:	EN 50 081-2
Housing:	ABS (Acrylnitril-Butadien-Styrol)
Protection:	IP 54
Weight:	approximately 0.7 kg

**Dimensions**

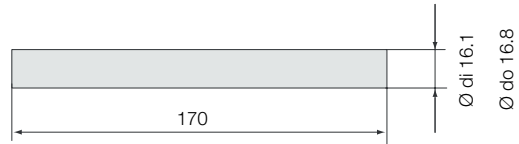


Mounting drawing

**Order Code wall mounting set: AFM**



**Order Code gauze protection: AFG**



**Installation**

The installation position should be chosen so as to prevent condensed water from entering the housing. The preferred installation position is "sensor vertically pointing downwards" or "sensor horizontal".

A grommet in the probe prevents penetration of water in the installation positions described above.

**Installation position**

