

- Measurement of relative humidity and temperature
- also available in high pressure version (to 25 bar) and high-temperature version (to 200°C)
- Operating range: 0-100 % RH, -25 to +125°C
- Short response times
- Analogue outputs (4 - 20 mA) for relative humidity and temperature
- For indoors and air ducts
- Capacitive method of measurement



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**Model:**  
AFK-G



**Description:**

The range AFK-G humidity/temperature sensors are sensors for measuring relative humidity and temperature (optional) in air and other non-aggressive gases for an operating temperature to 200°C. The high pressure variant can be used up to a pressure of 25 bar. The sensors are thus ideally suited for measuring humidity in industrial processes.

The sensors are based on capacitive metrology which is reasonably-priced, maintenance-free and highly accurate. Capacitive humidity sensor elements form the basis of these sensors. An electrode system, a moisture-sensitive polymer layer and a gold layer that is permeable to vapour are situated on a small thin glass or ceramic substrate.

Since the hygroscopic polymer layer can absorb water molecules that alter its dielectric constant, this layered system acts as a moisture-dependant capacitor, whose capacitance is a measure of the surrounding relative humidity.

The change in capacitance is converted to an electrical output signal by electronics normally mounted on the humidity sensor element. Both parts form a capacitive humidity sensor that can be adjusted using humidity references. Accuracy is approximately ± 2% RH.

The transmitters offer a 4 - 20 mA analogue output for relative humidity and a second 4-20 mA output for temperature when specified.

**Application examples:**

- Monitoring air conditioning systems, drying plant, humidifiers and dehumidifiers
- Bakery technology
- Warehousing
- Ripening warehouses for food
- R & D (e.g. environmental engineering)
- Household
- Greenhouses

**Technical details:**

**Humidity**

Measuring range:	0 - 100% RH
Measuring accuracy:	± 2% RH (for range 5 - 95% RH and 10 - 40°C)
Additional measurement error:	0.1%/K (at < 10°C, > 40°C)
Response time (T 90 at 1 m/s):	1 min
Analogue output:	4 - 20 mA
Max load:	1000 Ω

**Temperature**

Measuring element:	Pt 100, category B (according to DIN IEC 751)
Measuring range:	- 25 to +125°C for AFK-G1 (standard variant, duct mounting) - 25 to +125°C for AFK-G3 (high pressure variant) 0 - 200°C for AFK-G2 (high-temperature variant) -20...+80 °C (standard variant)
Measuring accuracy:	± 0.3 K
Additional error:	(< 10°C, > 40°C) ± 0.07%/10 K
Analogue output:	4 - 20 mA
Max load:	1000 Ω
Response time (T 90 at 1 m/s):	1 min

**General**

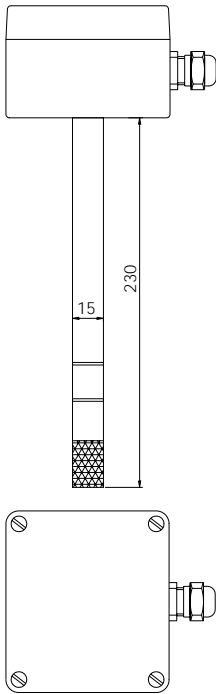
**Ambient temperature:**

Transmitter:	- 40 + 80°C
sensor (standard)	- 40 to +125°C
sensor (high pressure)	- 40 to +125°C
sensor (high temperature)	- 60 to + 200°C
sensor (standard wall fastening)	- 40...+80 °C
Ambient pressure:	atmospheric to 25 bar (high pressure variant)
Operating voltage:	12 - 30 V DC
current consumption:	24 mA per measuring cable
Degree of protection:	
Transmitter:	IP 54
Sensor:	IP 40
Material:	
Transmitter:	diecast aluminium
Sensor:	stainless steel
Electromagnetic compatibility:	
Noise immunity:	EN 50082-2
emitted interference:	EN 55011 Class B

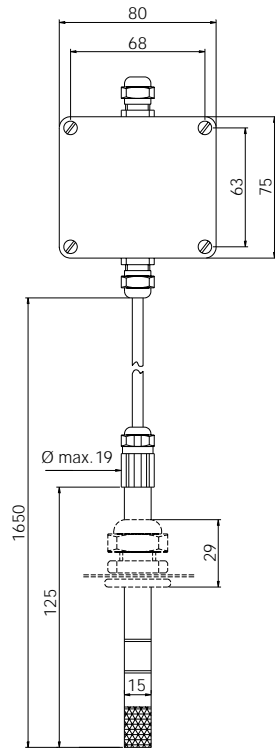


**Dimensions:**

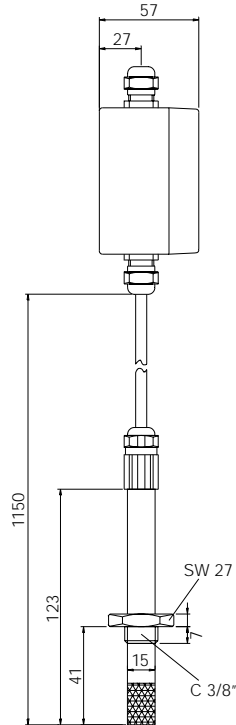
Standard version



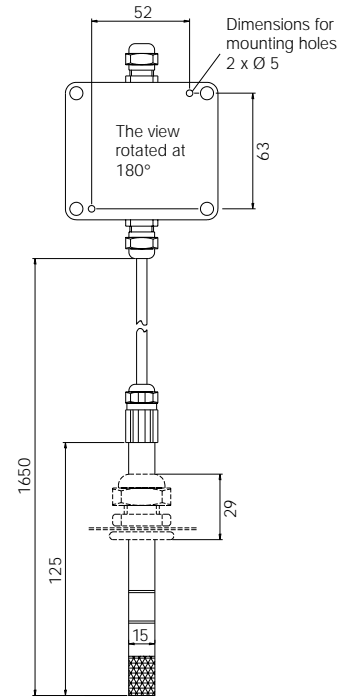
High-temperature version



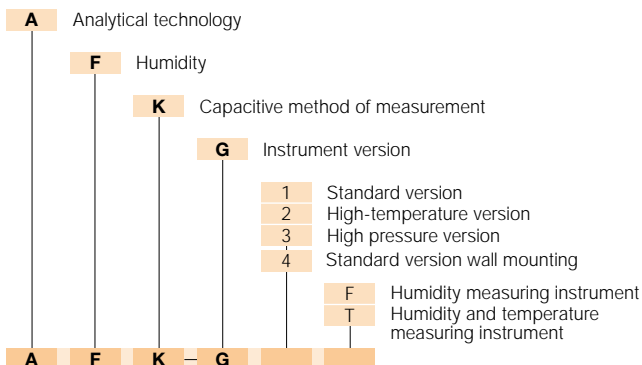
High pressure version



Mounting dimensions



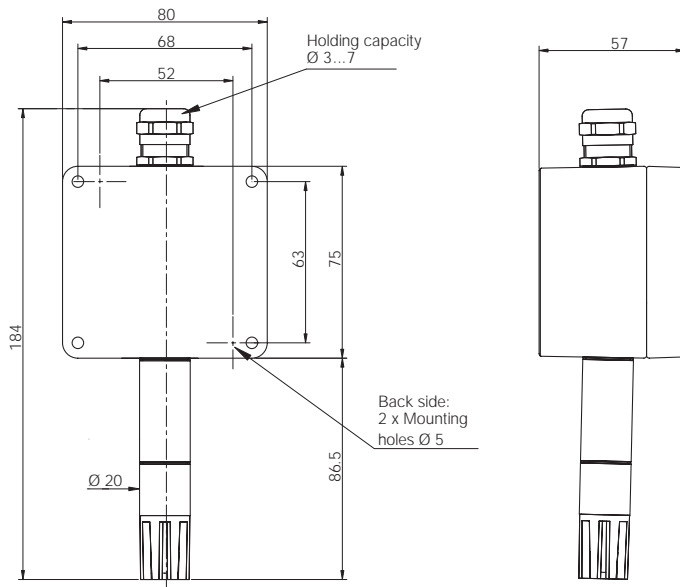
**Type codes**





**Dimensions**

Standard version  
(wall mounting)



Accessories:  
Mounting plate for duct installation  
Model AFK-GB

