Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Humidity Measuring Instrument with Analogue Output

Capacitive Method of Measurement

KOBOLD

measuring • monitoring • analysing

AFA-G

- Measurement of relative humidity
- Display
- Recommended operating range: 5 ... 95% rH 0 ... 60 °C
- Short response times
- Analogue output (4 ... 20 mA)
- Limit contact optional (open collector)
- For indoors and air ducts
- Capacitive method of measurement
- Display on-site (optional)

A2

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Description

Type KOBOLD AFA-G humidity sensors are suited for measuring relative humidity in air or in other non-aggressive gases. 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%.
Besides providing the output signal of 4...20 mA, the measuring instrument allows the measured value to be read off a red LED display at the measuring point. The display is supplied from the 4...20 mA signal current and thus requires no additional power supply.
The measuring instruments are also available with a programmable switching output. Sensors from the range are delivered with an aluminium sensor unit and a gauze filter. The connection is made with a right-angle plug according to DIN 43650.

Application examples

- Monitoring and control of air conditioning systems, drying plant, humidifiers and dehumidifiers
- Bakery technology
- Warehousing
- Ripening warehouses for food
- Research & Development (e. g. environmental engineering)
- Households
- Greenhouses

Order Details (Example: **AFA-G**)

Model	Description
AFA-G	Humidity measuring instrument with analogue output

Plug-on display/accessories for model **AFA-G**

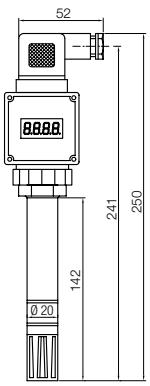
Description	Order number
4-digit LED, plug connector DIN 43650, 2-wire, supply with analogue output	**AUF-1000***
As above, but with additional Open Collector output, PNP, max. 90 mA	**AUF-1001***
Wall mounting set	**AFM**

*For more technical details see brochure »Z2«

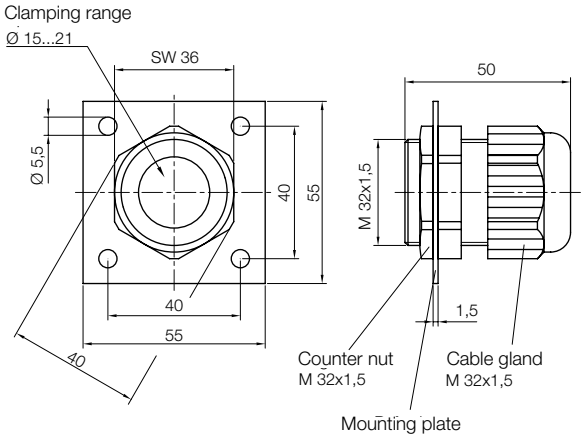
Technical Data

Measuring range:	0...100% rH
Measuring accuracy:	± 2% rH (for range 5...95% rH and 10...40 °C)
Additional measurement error:	< 0.1%/K
Response time:	< 20 s
Ambient temperature:	-40...+80 °C (without display) 0...+60 °C (with display)
Storage temperature:	-40...+80 °C
Protection sensor/electronics:	IP 30/IP 65
Power supply:	12...30 V_{DC}
Analogue output:	4...20 mA
Max. load:	650 Ω (at 24 V_{DC})
Min. air speed:	≥ 1 m/s (at right angles to the sensor)

Dimensions [mm]
with AUF-1000



Connection plate for duct mounting Model AFA-GB



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