

**Operating Instructions
for
Humidity Measuring
Instrument with Display**

Model: AFA-G



1. Contents

| | |
|---|---|
| 1. Contents..... | 2 |
| 2. Note | 3 |
| 3. Instrument Inspection..... | 3 |
| 4. Regulation Use | 3 |
| 5. Operating Principle..... | 4 |
| 6. Mechanical Connection..... | 4 |
| 7. Electrical Connection | 5 |
| 8. Technical Information..... | 6 |
| 9. Order Codes | 6 |
| 10. Dimensions | 6 |
| 11. Disposal | 7 |
| 12. EU Declaration of Conformance | 8 |

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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC-machine guidelines.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

The standard delivery includes:

- Humidity Measuring Instrument Model: AFA-G

4. Regulation Use

Any use of the Humidity Measuring Instrument, model: AFA-G, which exceeds the manufacturer's specifications, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

Type 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 % RH.

The measuring unit generates an output signal of 4-20 mA. Sensors from the series are provided with an aluminium sensor unit and a gauze filter. The connection is made with a right-angle plug according to DIN 43650.

6. Mechanical Connection

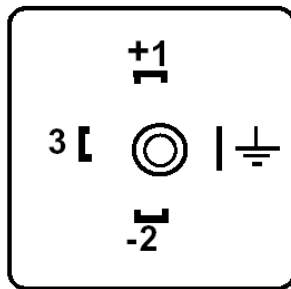
- Install the humidity sensors at a location in the room, plant or equipment where characteristic levels of humidity occur.
- Avoid installing them close to heaters or walls or against outside walls.
- The specified minimum air speeds of 1 m/s, operating voltage and- voltage-related load at current output (see diagram in section 8. Technical Information) should be complied with. Deviations from these values may result in incorrect measurement readings because of excess heating in the electronic module. (Periodically timed operation will help to avoid this).
- Install the sensor horizontally with the sensor element pointing downwards.
- Prevent water penetration.

Note:

- Dew formation and splashed water do not damage the sensor, although they may lead to inaccurate measurements until all the residue has dried off the sensor element and its immediate surroundings.
- Deposits of dust do not generally cause problems either; however, they may affect dynamic performance. We advise you to use a membrane filter if there is an excessive build-up of dust or a sintered high-grade steel filter at high flow speeds. These filters can be rinsed clean if necessary.
- These filters can be ordered separately.
- Never touch the highly sensitive surface of the sensing element.
- We recommend the use of the AFM wall console as an installation aid.

7. Electrical Connection

Connection diagram



- +1 +Operating voltage
- 2 Output humidity
- 3 Switching output (only with AUF-1001)
- ⏏ Shield

8. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

9. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

10. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

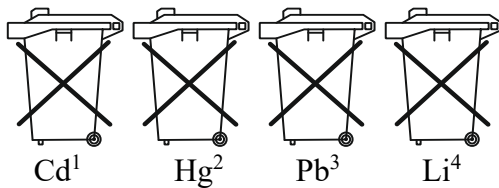
11. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

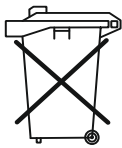
Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



12. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Humidity Measuring Instrument Model: AFA-G

to which this declaration relates is in conformity with the following EU directives stated below:

| | |
|--------------------|--------------------------------|
| 2014/30/EU | EMC Directive |
| 2011/65/EU | RoHS |
| 2015/863/EU | Delegated Directive (RoHS III) |

Also, the following standards are fulfilled:

| | |
|---------------------------|---|
| EN 60730-1:2012 | Automatic electrical controls for household and similar use - Part 1: General requirements |
| EN 60730-2-13:2008 | Automatic electrical controls for household and similar use - Part 2-13: Particular requirements for humidity sensing controls |
| EN 60730-2-9:2011 | Automatic electrical controls for household and similar use - Part 2-9: Particular requirements for temperature sensing controls |
| EN 61326-1:2013 | Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements |
| EN 61326-2-3:2013 | Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning |

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