

# Duct humidity transmitter high 4-20 mA

**Article number: 803710 2022**

Our channel humidity transmitter High with 4-20 mA current output offers a robust plastic housing with quick-release screws. The device reliably measures humidity and optionally temperature, with four switchable temperature measuring ranges available. The relative humidity is precisely measured by a digital humidity sensor housed in a durable plastic sintered filter. The transmitter can be calibrated and enables fine adjustment for maximum accuracy. Installation is simple and is carried out directly in the ventilation duct using the mounting flange included in the scope of delivery.



| Supply and output |                         |
|-------------------|-------------------------|
| Output            | 4 - 20 mA               |
| Power consumption | < 1,1 VA / 24 V DC      |
| Voltage supply    | 15 - 36 V DC            |
| Connection type   | See connection diagrams |

| General information |  |
|---------------------|--|
| Load                | $R_a \text{ (Ohm)} = (U_b - 14 \text{ V}) / 0,02 \text{ A}$            |
| Sensors             | Digital humidity sensor, optionally with integrated temperature sensor |
| Process connection  | by means of plastic mounting flange and mounting brackets              |

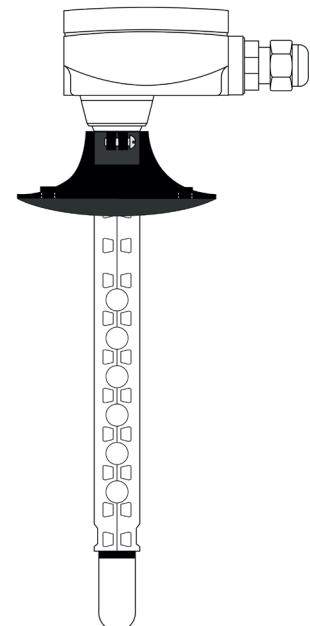
| Humidity                   |   |
|----------------------------|---|
| Measuring element humidity | Digital humidity sensor (low hysteresis, high long-term stability)  |
| Measuring range humidity   | 0 % RH to 100 % RH  |
| Output humidity            | 4-20 mA   |
| Accuracy humidity          | $\pm 2.0 \%$ (20 % RH to 80 % RH) at +25 °C, otherwise $\pm 3.0 \%$ |
| Long-term stability        | $\pm 1 \%$ / year   |

| Temperature                   |  |
|-------------------------------|--|
| Measuring element Temperature | Pt1000, DIN EN 60751, Class B  |
| Measuring range temperature   | Factory configuration: 0 °C to 50 °C<br>multi-range switching with 4 switchable measuring ranges |
| Output temperature            | 4 - 20 mA  |
| Accuracy temperature          | typically $\pm 0.2 \text{ K}$ at +25 °C  |

| Ambient conditions       |                               |
|--------------------------|-------------------------------|
| Storage temperature      | -35 °C to +85 °C              |
| Operating temperature    | -30 °C to +70 °C              |
| Permissible air humidity | < 95 % RH, non-condensing air |

| Certifications / Standards |   |
|----------------------------|---|
| Protection class           | III (according to EN 60 730)  |
| Protection type            | IP 65 according to EN 60 529  |
| Standards                  | CE conformity<br>electromagnetic compatibility according to EN 61326<br>according to EMC Directive 2014/ 30/ EU |

**Configurable options**  
M - Measured variable



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| Housing                 |   |
|-------------------------|---|
| Material                | Plastic, UV-resistant<br>Material polyamide, 30 % glass bead reinforced               |
| Dimensions (L/W/H) (mm) | 72 x 64 x 37,8  |
| Color                   | Traffic white (similar to RAL9016)  |
| Screw connection        | Cable gland, Plastic,<br>M16x1,5, Strain relief,<br>replaceable, max. 10,4 mm Ø Inner |
| Electrical connection   | 0.14 - 1.5 mm <sup>2</sup> , via screw terminals on circuit board                     |
| Closure                 | with quick release screws   |

| Probe shaft |           | Sensor protection (Included in delivery) |                         |
|-------------|-----------|--|-------------------------|
| Material    | Polyamide | Material                                 | Plastic sintered filter |
| Ø (mm)      | 20        | Material                                 | replaceable             |
| Length (mm) | 55        | Material                                 | Plastic                 |
|             |           | Ø (mm)                                   | 16                      |
|             |           | Length (mm)                              | 32                      |

| Your order code |                   |      |   |
|-----------------|-------------------|------|---|
| Article number  | Measured variable | code | Measured variable                             |
| 803710 2022     | ---               | M1   | % RH (Relative humidity)                      |
|                 |                   | M2   | °C + % RH (Temperature and relative humidity) |

| Delivery and Packing |   |
|----------------------|---|
| Delivery             | Transmitter, Plastic flange MF-20-K, Operating instructions |
| Packing              | individually packed in cardboard box                        |

**Plastic flange MF-20-K (Included in delivery)**

|           |                          |
|-----------|--------------------------|
| Material  | Plastic                  |
| Mounting  | 2 x Ø 5,2 mm drill holes |
| Hole (mm) | Ø 20                     |

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**Testo Sensor GmbH**

+49 7653 96597-71

Testo-Straße 1  
D-79853 Lenzkirch

webshop@testo-sensor.de

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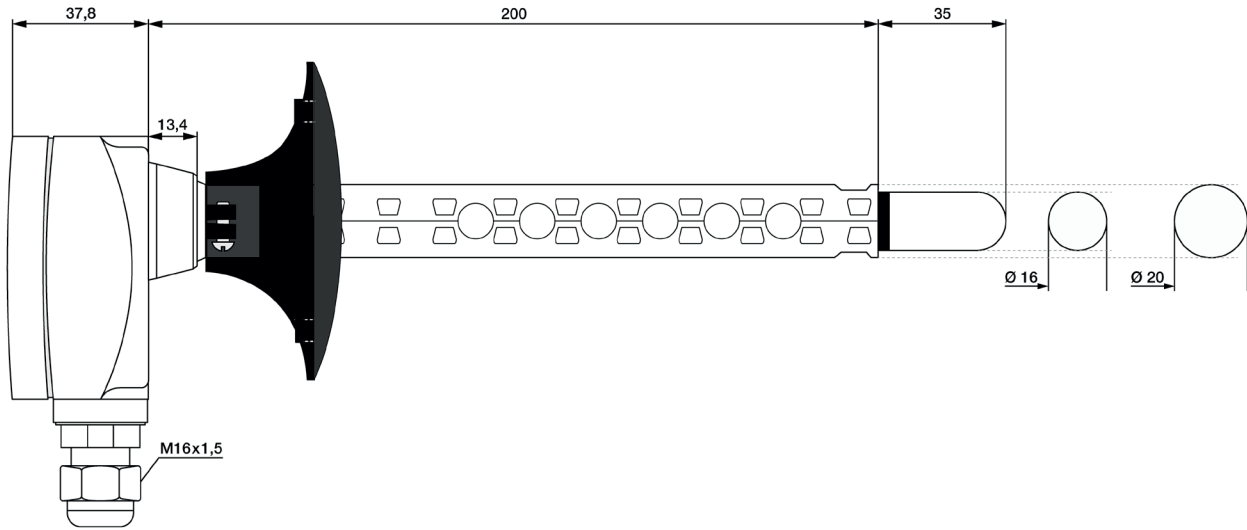
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**Technical drawing**

**Configurable options**  
M - Measured variable

All dimensions in mm

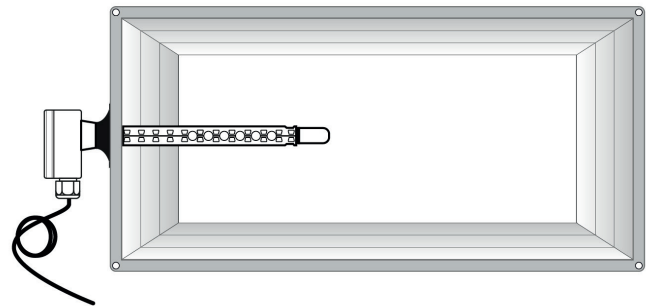


**Important assembly instructions**

Installation using the mounting flange (included in the scope of delivery): Please ensure that the Ø of the mounting flange matches the Ø of the protection sleeve.

To minimize measurement errors due to heat dissipation, place the probe shaft in the middle of the duct and make sure that the probe can be easily removed if necessary.

The device should only be used in pollutant-free, non-condensing air (< 95 % RH). The sintered filter protects the humidity sensor in outdoor and duct probes from dust, which can falsify the measurement result. Maintenance in the event of contamination is therefore important. Avoid touching the humidity element to prevent incorrect measurements.



**Circuit diagrams and assignment (Please also read the operating instructions before connecting the transmitter)**

| Default configuration                                 | Set scaling via DIP switch   | Wiring diagram | Assignment % RH |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |
|---|--|----------------|-----------------|--|-------|-------|---------------|----|----|--------------|-----|-----|--------------|-----|----|------------|----|-----|------------|--|--|
| <p>Werkseinstellungen:<br/>Skalierung: 0 .. 50 °C</p> | <p>Messbereichumschaltung via DIP-Schalter<br/>Changing measuring range via DIP switches</p> <table border="1"> <tr> <td>on</td> <td>on</td> <td></td> </tr> <tr> <td>DIP 1</td> <td>DIP 2</td> <td>Scaling Range</td> </tr> <tr> <td>on</td> <td>on</td> <td>-35 .. +75°C</td> </tr> <tr> <td>off</td> <td>off</td> <td>-35 .. +35°C</td> </tr> <tr> <td>off</td> <td>on</td> <td>0 .. +50°C</td> </tr> <tr> <td>on</td> <td>off</td> <td>0 .. +80°C</td> </tr> </table> <p>Temperature table in OI</p> | on             | on              |  | DIP 1 | DIP 2 | Scaling Range | on | on | -35 .. +75°C | off | off | -35 .. +35°C | off | on | 0 .. +50°C | on | off | 0 .. +80°C | <p>DIP-Schalter Messbereichumschaltung<br/>DIP switches Measuring range changeover</p> | <p>1 = +UB 24V DC<br/>2 = Output Humidity 4-20mA<br/>3 = free<br/>4 = UB GND</p> <p><b>Assignment °C + % RH</b></p> <p>1 = +UB 24V DC<br/>2 = Output Humidity 4-20mA<br/>3 = Output temperature 4 -20mA<br/>4 = UB GND</p> |
| on  | on   |                |                 |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |
| DIP 1   | DIP 2  | Scaling Range  |                 |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |
| on  | on   | -35 .. +75°C   |                 |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |
| off   | off  | -35 .. +35°C   |                 |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |
| off   | on   | 0 .. +50°C     |                 |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |
| on  | off  | 0 .. +80°C     |                 |  |       |       |               |    |    |              |     |     |              |     |    |            |    |     |            |  |  |

The humidity path must be connected for the current version! Please refer to the operating instructions for the correct connection.

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D-79853 Lenzkirch

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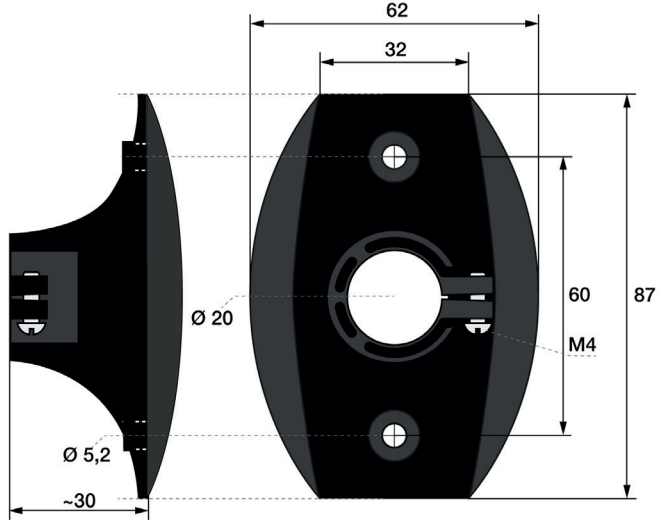
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# Accessoires: Mounting flange

**Plastic flange MF-20-K**





| Your order code |                          |
|-----------------|--------------------------|
| Article number  | 809500 8000              |
| Material        | Plastic                  |
| Mounting        | 2 x Ø 5,2 mm drill holes |
| Hole (mm)       | Ø 20                     |


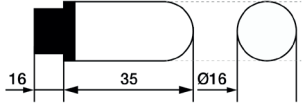


# Accessoires: Sintered filter

**Metal sintered filter**

| Article image   | Your order code       | Technical drawing   |
|---|-----------------------|---|
|  | <b>Article number</b> | <b>809990 0005</b>  |
|   | Material              | Stainless steel 1.4404   316L   |
|   | Length (mm)           | 32  |
|   | Ø outside (mm)        | 16  |
|   |                       |  |

**Plastic sintered filter**

| Article image   | Your order code       | Technical drawing   |
|---|-----------------------|---|
|  | <b>Article number</b> | <b>809990 0006</b>  |
|   | Material              | Plastic   |
|   | Length (mm)           | 35  |
|   | Ø outside (mm)        | 16  |
|   |                       |  |

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