Accurate humidity / temperature measurement over a wide working range, fitted in a small-sized housing and high flexibility have been the main goals for the development of the EE08 series.

Low power consumption and short start-up time support efficient energy management for battery operated systems. For this application an additional version (V10) with supply voltage 4.5-15 V DC has been developed.

Calibration data and other relevant functions like linearization or temperature compensation are stored in the probe. This feature, together with the optional connector, allows for easy replacement of the probe without a need for re-adjustment of the reading device (interchangeability).

The humidity and temperature measurement are available as analogue outputs (0-1/2.5/5 V) and as a digital interface (E2-interface). Easy implementation and data processing is warranted. Humidity and temperature reading can be re-adjusted using the calibration software; available as an accessory. The configuration equipment allows humidity and temperature adjustment of the sensor.

**Typical Applications**
- meteorology / weather stations
- humidity / temperature data logging
- incubators
- fermentation chambers
- green houses
- snow machines
- dry storage facilities

**Features**
- small dimensions
- wide working range, high accuracy
- traceable calibration
- customer adjustment possible
- interchangeable in seconds
- low power consumption / short start-up time
- analogue outputs / digital interface

**Technical Data**

**Measuring values**

<table>
<thead>
<tr>
<th>Relative Humidity</th>
<th>Sensor</th>
<th>Working range $^{1}$</th>
<th>output value: $0.00...100.00$ % RH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HC101</td>
<td>$0...100$ % RH</td>
<td></td>
</tr>
<tr>
<td>Digital output (2 wire)$^{2}$</td>
<td>output value: $0.00...100.00$ % RH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analogue output $0...100$ % RH</td>
<td>$0-1/2.5/5/10$ V</td>
<td>$-0.2$ mA &lt; I &lt; $0.2$ mA</td>
<td></td>
</tr>
<tr>
<td>Accuracy at $20^\circ$ C ($68^\circ$ F) and $12$ V DC$^{2}$</td>
<td>$\pm2$ % RH ($0...90$ % RH)</td>
<td>$\pm3$ % RH ($90...100$ % RH)</td>
<td></td>
</tr>
<tr>
<td>Temperature dependence</td>
<td>typ. $0.03$ % RH/°C (typ. $0.02$ % RH/°F)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Sensor</th>
<th>Pt 1000 (DIN A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital output (2 wire)$^{2}$</td>
<td>output value: $-40.00...+80.00$ °C ($-40...176$ °F)</td>
<td></td>
</tr>
<tr>
<td>Analogue output</td>
<td>$0-1/2.5/5/10$ V</td>
<td>$-0.2$ mA &lt; I &lt; $0.2$ mA</td>
</tr>
<tr>
<td>Accuracy at $12/24$ V DC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![](chart.png)

**General**

<table>
<thead>
<tr>
<th>Supply voltage</th>
<th>output $0-1$ V / $0-2.5$ V</th>
<th>$4.5-15$ V DC or $7-30$ V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>output $0-5$ V</td>
<td>$7-30$ V DC</td>
</tr>
<tr>
<td>Current consumption</td>
<td>typ. $&lt;1.3$ mA</td>
<td>$12-30$ V DC</td>
</tr>
<tr>
<td>Digital interface</td>
<td>E2-interface level = $3.3$ V / $\pm0.1$ V</td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>polycarbonate / IP65</td>
<td></td>
</tr>
<tr>
<td>Sensor protection</td>
<td>metal grid filter</td>
<td></td>
</tr>
<tr>
<td>Electromagnetic compatibility</td>
<td>EN61326-1 EN61326-2-3</td>
<td></td>
</tr>
<tr>
<td>Industrial Environment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Temperature ranges**

| Working temperature: $-40...80$ °C ($-40...176$ °F) |
| Storage temperature: $-40...80$ °C ($-40...176$ °F) |

$^{1}$ refer to the working range of the humidity sensor HC101
$^{2}$ serial protocol refer to www.epluse.com

* The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation).

The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).
Dimensions (mm)

EE08 with cable (Type E)

Connection Diagram

**Type E:**
- T-passive: white (not connected)
- T-passive: blue (not connected)
- GND: pink
- T-out: grey
- RH-out: yellow
- SCL: green
- SDA: brown
- +UB: red

**Type D:**
- T-passive: white, black
- SDA: brown
- SCL: green
- RH-out: yellow
- T-out: grey
- GND: pink
- +UB: red

Ordering Guide

**Housing:**
- Polycarbonate (P)

**Model:**
- Humidity active / temperature active (FT)
- Humidity active / temperature passive (FP)

**Output:**
- 0 - 1 V (1)
- 0 - 2.5 V (2)
- 0 - 5 V (3)
- 0 - 10 V (4)

**Supply:**
- 4.5 - 15 V DC (V10)
- 7 - 30 V DC (V11)

**T-Sensor:**
- Pt 100 DIN A (A)
- Pt 1000 DIN A (C)
- with connector (D)
- with cable (E)

**Type:**
- Passive, 4-wire (E2)

**Filter:**
- Metal grid filter (6)

**Coating:**
- Without coating (no code)
- With coating (HC01)

**Cable Length:**
- (Type E only)
  - 1 m (3.3 ft)
  - 2 m (6.6 ft)
  - 5 m (16.4 ft)

**T-Unit:**
- Metric (no code)
- Non metric (E01)

**T-Scaling:**
- -40...80°C (T22)
- -40...60°C (T21)
- -30...70°C (T08)
- -20...80°C (T24)
- -20...50°C (T48)
- Other (Txx)

Order Example

EE08-PFT2V11E602T22
- Housing: Polycarbonate
- Model: Humidity active / temp. active
- Output: 0 - 5V
- Supply: 7 - 30V DC
- Type: With cable
- Filter: Metal grid filter
- Coating: Without coating
- Cable Length: 2m (6.6ft)
- T-Unit: Metric
- T-Scaling: -40...80°C

Scope of Supply
- EE08 Transmitter according to ordering guide
- Inspection certificate according to DIN EN10204 - 3.1

Accessories / Replacement Parts
- M12 connection cable for type D, length 1.5 m (5 ft) (HA010322)
- M12 connection cable for type D, length 3 m (10 ft) (HA010323)
- M12 connection cable for type D, length 5 m (16.4 ft) (HA010324)
- M12 connection cable for type D, length 10 m (32.8 ft) (HA010325)
- Radiation shield for Type E (HA010502)
- Radiation shield for Type D (HA010506)
- Protection cap for 12 mm probe (HA010783)
- M12 female socket with wires (HA010703)
- M12 female cable connector assembly possible (HA010704)
- Metal grid filter (HA010113)

Configuration equipment: The configuration equipment allows humidity and temperature adjustment of the sensor.
- Configuration cable (HA011005)
- Configuration software: free download under www.epulse.com/EE08

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