Measurement principle

The temperature humidity sensors are compact sensors in a rod-design with plug-in connection to measure relative humidity and temperature (individually or together) with high precision in air and other non-aggressive gases. The delivery includes the coupling plug.

The relative humidity is measured by a capacitive sensing element and the value will be placed at the output as analog output as well.

Mounting

The sensors are to be mounted at a climate representative spot. For protection against rain and direct radiation a weather and radiation shield should be used, which can be simply fixed to a mast.

Please order the weather and radiation shield separately!

Take care of a good ventilation of the sensing element. Any mounting position is possible. Avoid penetration of water. Dew-formation does not do any harm to the element, but faulty measurements will occur until total drying.

Maintenance

The temperature sensor is maintenance-free. Only check the output after long use with a precise reference thermometer.

It is possible to make functional gauging of the humidity sensor. To do this, the sensor has to be exposed to a known reference humidity, e.g., the available “humidity-standard” calibration set. If you unscrew the protection filter, keep in mind never to touch the element with fingers or any tool.

Dimensional drawing

Diameter: 123 mm
Height: 208 mm
Overall height including bracket: 300 mm
Weight: 1.01 kg
## Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Temperature Sensor</th>
<th>Humidity Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement principle</td>
<td>Pt100 1/3 DIN acc. DIN EN 60751</td>
<td>Capacitive</td>
</tr>
<tr>
<td>Measurement range</td>
<td>-30 ... +70 °C</td>
<td>0 ... 100% RH</td>
</tr>
<tr>
<td>Slope [Data Logger Meteo-40]</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Offset [Data Logger Meteo-40]</td>
<td>-30</td>
<td>0</td>
</tr>
</tbody>
</table>

### Accuracy
- **Accuracy**: ± 0.2 K (-27 ... +80 °C) ± 2% RH (5 ... 95% RH @ 10 ... 40 °C)
- **Additional error**: ± 0.007 K/K (<10 °C, >40 °C) < 0.1%/K (<10 °C, >40 °C)

### Operating range
- **Ambient temperature**: -40 ... +80 °C
- **Minimum air speed [across sensor]**: ≥ 0.5 m/s

### Electrical data
- **Output signal**: 0 ... 1 V 0 ... 1 V
- **Operating supply**: 6 ... 30 VDC
- **Power consumption**: <1 mA

### General
- **Connection**: 7-pol plug for shielded cable
- **Dimensions**: Sensor: 155 x Ø 20 mm Weather and radiation shield: see dimensional drawing
- **Weight**: Sensor: approx. 0.1 kg Weather and radiation shield: 1.01 kg
- **Protection Sensor**: IP 30
- **Protection Electronic**: IP 65
- **Protection Coupling**: IP 67
- **Manufacturer**: Galltec
Sensor connection to Ammonit Meteo-40 data logger

TP (temperature only!) - Meteo-40
Order-No. S42100

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Plug Pin No.</th>
<th>Ammonit Cable Wire Colour</th>
<th>Meteo-40 Analog Voltage</th>
<th>Supply Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Output Voltage</td>
<td>3</td>
<td>white</td>
<td>Ax</td>
<td></td>
</tr>
<tr>
<td>Ground</td>
<td>2</td>
<td>blue</td>
<td>Bx</td>
<td></td>
</tr>
<tr>
<td>Supply</td>
<td>4</td>
<td>red</td>
<td>9 ... 30 VDC*</td>
<td></td>
</tr>
<tr>
<td>Ground</td>
<td>1</td>
<td>black</td>
<td>Main Ground</td>
<td></td>
</tr>
</tbody>
</table>

*Supply voltage for usage with Meteo-40 data loggers

Cable type: LiYCY 4 x 0.25 mm²
Connect the shield logger-sided to Ground (GND)

Sensor connection diagram to Ammonit Meteo-40 data logger
Temperature Humidity Sensor S42100 / S52100 / S50050

Sensor connection to Ammonit Meteo-40 data logger

KP (temperature + humidity) - Meteo-40
Order-No. S52100

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Plug Pin No.</th>
<th>Ammonit Cable Wire Colour</th>
<th>Meteo-40 Analog Voltage</th>
<th>Supply Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Output Voltage</td>
<td>7</td>
<td>white</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Ground</td>
<td>5</td>
<td>blue</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Humidity Output Voltage</td>
<td>3</td>
<td>brown</td>
<td>A_x+1</td>
<td></td>
</tr>
<tr>
<td>Ground</td>
<td>2</td>
<td>pink</td>
<td>B_x+1</td>
<td></td>
</tr>
<tr>
<td>Supply</td>
<td>4</td>
<td>red</td>
<td>9 ... 30 VDC*</td>
<td>Main Ground</td>
</tr>
<tr>
<td>Ground</td>
<td>1</td>
<td>black</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Supply voltage for usage with Meteo-40 data loggers

Cable type: LiYCY 6 x 0.25 mm²
Connect the shield logger-sided to Ground (GND)

Sensor connection diagram to Ammonit Meteo-40 data logger