Hygroclip Air Temperature/Air Humidity Sensor

Pic. 1: Hygroclip Air Temperature/Air Humidity Sensor
The Hygroclip is a high quality sensor module for measuring air humidity and air temperature. The humidity measurement is based on the Hygromer capacitive humidity sensor. The sensors are 100% exchangeable without readjustments.

**Measuring parameters/precision**

- **Air humidity:**
  - Sensor: Hygromer-AC1 capacitive sensor
  - Measuring range: 0% rh to 100% rh
  - Resolution: 0.1% rh
  - Response time 63° at 20°C/40°C: 10sec/4sec
  - Long term stability: better 1% rh per year
  - Uncertainty at 23°C: ±1.5% rh (±1% rh possible by special calibration)

- Uncertainty over the whole temperature range without special calibration:

![Pic. 2: Measurement uncertainties humidity versus operating temperature](image-url)
Pic. 3: Measurement uncertainties humidity versus operating temperature

- **Air temperature:**
  - Sensor: Pt100, 1/3 DIN
  - Measuring range: -40°C up to 85°C
  - Precision: ±0.3°C
  - Resolution: 0.12°C

**Interface/outputs**

- Digital output "One Wire"
- Cable length: max. 5m (with booster up to 100m)

**Power supply**

- Power supply from the Gealog measuring interface
- Operating voltage: 3.5V to 50V
• Current when switched-on < 4mA
• The Hygroclip sensor is switched-on only during measuring cycles for 5 seconds. That method reduces the total power consumption. The Gealog measuring interface can use the "switched mode".

Wiring/connector

• The Hygroclip sensor has an integrated round pin connector and needs for connection to the measuring interface the "Connection Cable with Connector for Hygroclip"

![Diagram of pinning of the sensor's round pin connector](pic)

Pic. 4: Pinning of the sensor’s round pin connector

• Connection Cable with Connector for Hygroclip:
  - Standard length: 5 m (Please specify other cable lengths on order), delivery with loose ends
  - UV resistant
  - For use in open air
  - PU mantle, 3 x 0.25 mm²
  - Wire colors: brown, green, white (color code DIN 47100)
  - Outer diameter: 4.7 mm

Important:
Cable length max. 5m (with booster up to 100m)

• Wire assignment

<table>
<thead>
<tr>
<th>Pin No. Round Pin Connector (Pic. 4)</th>
<th>Signal</th>
<th>Signal</th>
<th>Remark</th>
<th>Recommended Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T</td>
<td>Temperature - analog output</td>
<td>Not used for Gealog systems</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>VCC</td>
<td>Power supply 3.5 to 50 V DC</td>
<td>brown</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>Power supply ground</td>
<td>green</td>
<td></td>
</tr>
</tbody>
</table>
Pin No. Round Pin Connector (Pic. 4) | Signal | Signal | Remark | Recommended Wire Color
--- | --- | --- | --- | ---
4 | HYGRO | HYGRO - serial output signal | Used by Gealoh measuring interface | white
5 | | Humidity - analog output | Not used for Gealog systems |
| Shield | | Cable shield, must be connected to ground bar | | yellow/green

Environmental/Mechanical Data
- Operating temperature: -40°C to 85°C
- Protection mode according to IP65
- Weight: 14g
- Housing: Polycarbonate, sensor protection by wire filter
- Dimensions: Total length: 100mm, D=15mm

Standard parameters
This set of parameters is recommended for the sensor. It has to be programmed on the datalogger.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Physical unit</th>
<th>Degree of calibration polynom</th>
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<tbody>
<tr>
<td>Humidity channel</td>
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<td></td>
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<td>%</td>
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<tr>
<td>a0</td>
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<td>0.0</td>
<td>255.9</td>
<td></td>
<td>0</td>
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<tr>
<td>a1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>°C</td>
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<tr>
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<td>205.9</td>
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<td></td>
<td>1</td>
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Fulfilled standards
- CE conformity, EN 50081-2, EN 50082-2
- WMO recommendations
  - WMO -No. 8, Guide to Meteorological Instruments and Methods of Observation
Product Certificate
Hygroclip Air Temperature/
Air Humidity Sensor

Production quality standard

- Production according to ISO9001
Ordering Information

- Air Humidity/Air Temperature Sensor Hygroclip
  - Air humidity 0 to 100%
  - Air temperature -40°C to 85°C

Accessories

- Connection Cable with Connector for Hygroclip
  - Sensor cable incl. bayonet connector to Hygroclip
  - Loose ends on the datalogger’s side
  - Standard length 5 meters
  - Please specify other length of cable on order

- Cable PUR 3*0.25 Shielded
  - Data- and sensorcable
  - UV resistant
  - For use in open air
  - PU mantle 3 x 0.25 mm²
  - Wire colors: brown, green, white
  - Wire resistance: 82 Ohms per km
  - Outer diameter: 4.7 mm

- Radiation Shield for Air Humidity/Air Temperature Sensor
  - Version with natural ventilation

- Radiation Shield for Air Humidity/Air Temperature Sensor, Ventilated
  - Version with artificial ventilation
  - Integrated fan with pulse output for monitoring of the fan’s rotation speed

Revision List

<table>
<thead>
<tr>
<th>No.</th>
<th>Revision</th>
<th>Date</th>
<th>Name</th>
<th>Description of Changes</th>
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<td>Pe</td>
<td>New release</td>
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Document: Certificate_Hygroclip_Air_Temperature_Air_Humidity_Sensor.doc