Air Humidity/Air Temperature Sensor Hygroclip2

Product Certificate
Air Humidity/Air Temperature Sensor
Hygroclip2

The Hygroclip2 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 temperature
  - Sensor: Pt100 Class A
  - Measuring range: -50°C to +100°C
  - Uncertainty @ 23°C: 0.1K

- Air humidity:
  - Sensor: Hygromer IN-1 capacitive sensor
  - Measuring range: 0% rh to 100% rh
  - Resolution: 0.1% rh
  - Response time 63%
    at 20°C/40°C: 10 sec / 4 sec
  - Long term stability: better 1% rh per year
  - Uncertainty at 23°C: 0.8% rh (0.5% rh possible by high precision calibration)

- Dew Point, Frost Point
  Additionally the Hygroclip2 calculates either the dew point or the frost point. Please note, that these computations have to be activated by use of the optional HW4 software and PC-connection cable.

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Fast response
By decoupling the Pt100 temperature sensor from the probe thermal respnse is significantly improved
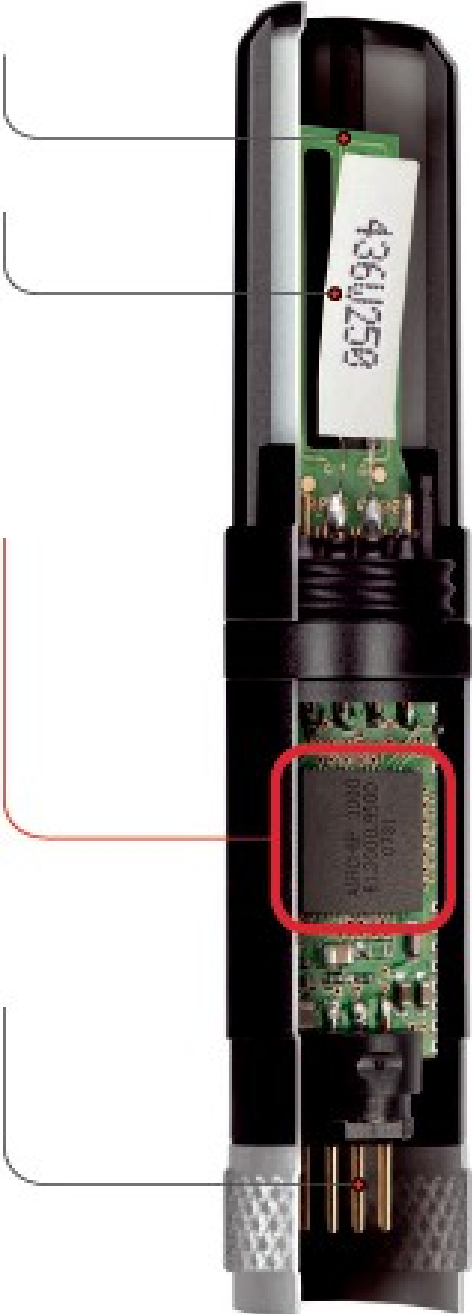
Innovative filter technology
The latest in filter technology provides a high level of protection and maintains the optimum measurement environment for the Hygromer humidity and Pt100 temperature sensor.

AirChip3000
- Compensates hunmidity and temperature over 30.000 reference points
- Dew/frost point calculation
- Sensor auto diagnostic and automatic correction

Maximum flexibility
The probes can be interchanged without adjustment

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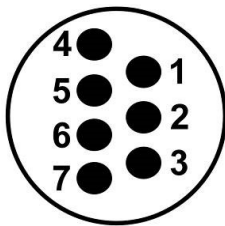# Hygroclip2

Interface/outputs

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

Power supply

- Power supply from the Gealog measuring interface
- Operating voltage: 3.5 V to 5 DCV
- Supply current < 4.5 mA @ 3.3VDC

Wiring/connector

- The Hygroclip sensor has an integrated round pin connector and needs for connnection to the measuring interface the "Connection Cable with Connector for Hygroclip2 - 5 m"

Pinning of the sensor´s round pin connector (7-pin male – looking at probe)

- Connection Cable with Connector for Hygroclip2 - 5 m:
  - Length: 5 m , delivery with loose ends
  - Wire colours see table
  - 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: 4.8 mm

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

Wire assignment

Pin (Round Pin Connector)	Wire Colour	Name	Function	Remark
1	Green	VDD (+)	3.3 to 5VDC Power Supply	
2	Grey	GND	Power and Digital Signal	
3	Red	RXD	UART	
4	Blue	TXD	UART	
5	White	Out1 Analog (+)	Humidity 0%-100%rh (default)	Not used by Gealog Systems
6	Brown	Out2 Analog (+)	Temperature -40-60°C (default)	Not used by Gealog Systems
7	Yellow	AGND	Analog Signal Ground	Not used by Gealog Systems

Booster for Hygroclip2 AC3003

- Allows connecting a Hygroclip2 probe to the Gealog measuring system over a distance of up to 100 m.

- The booster consists of two modules. One on the side of the probe with round pin connector, the other module on the datalogger´s side. The two modules are connected by a cable, up to 100 m long, shielded, twisted pairs. To the connection cable the two booster modules have open strands with tinned ends. Each module is 2 m long.

Probe side   Transmitter side

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Wire Colour	Description	
White	RS485_N_Tx	Twisted Pair
Blue	RS485_P_Tx	
Brown	RS485_N_Rx	Twisted Pair
Red	RS485_P_Rx	
Green	VDD (+) / 3.3VDC	Twisted Pair
Gray	GND	

Environmental/Mechanical Data

- Operating temperature -50°C to 100°C, 0% to 100% rh
- Protection mode according to IP65
- Weight: 14g
- Housing: Polycarbonat, sensor protection by wire filter
- Dimensions: Total length: 83 mm, D=15 mm

Fulfilled standards

- CE conformity, EN 50081-2, EN 50082-2
- WMO recommendations
  WMO -No. 8, Guide to Meteorological Instruments and Methods of Observation

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Ordering Information

- **Air Humidity/Air Temperature Sensor Hygroclip2**
  - o Air humidity 0 to 100%
  - o Air temperature -50°C to 100°C

Accessories

- **Connection Cable with Connector for Hygroclip2 - 5m**
  - o Sensor cable incl. connector to Hygroclip2
  - o Loose ends on the datalogger´s side
  - o Length 5 meters

- **Booster for Hygroclip2 AC3003**
  - o Booster amplifier for sensor cable lengths of up to 100 m
  - o Connection cable between booster modules has to be extra ordered

- **Radiation Shield for Air Humidity/AirTemperature Sensor**
  - o Version with natural ventilation

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

- **HW4 Hygroclip2 Configuration Software with PC connection Cable**

Revision List

No.	Revision	Date	Name	Description of Changes
1	1	18.7.2014	Pe	New release

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