

Hygroclip Air Temperature/Air Humidity Sensor



Pic. 1: Hygroclip Air Temperature/Air Humidity Sensor

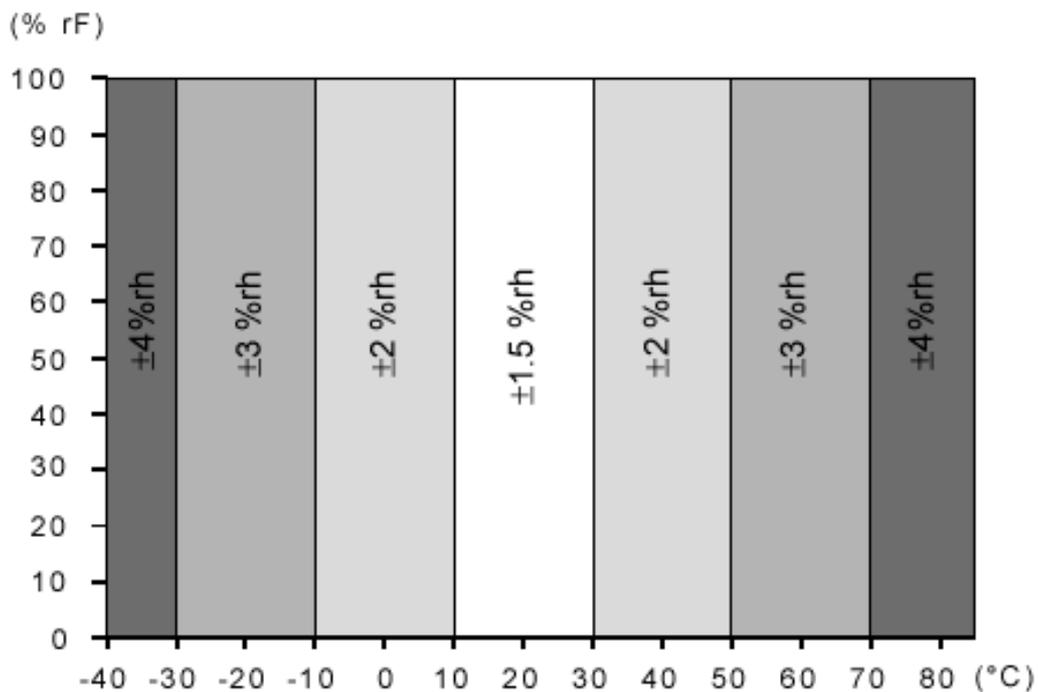
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Hygroclip Air Temperature/ Air Humidity Sensor

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

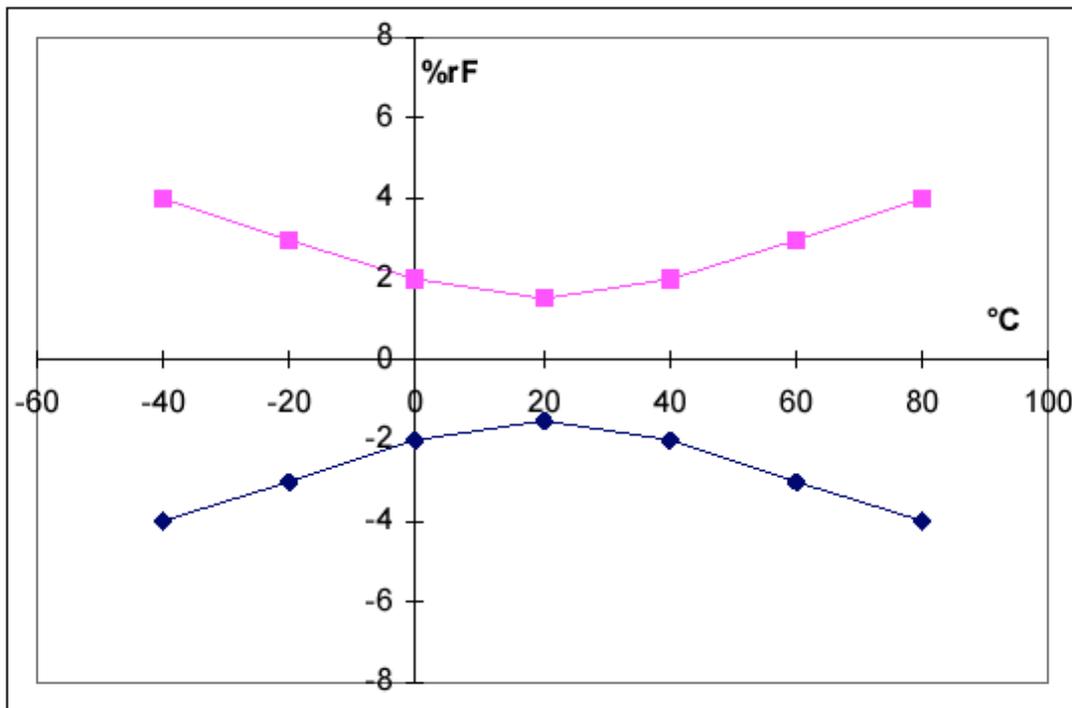
- Air humidity:
 - Sensor: Hygromer-AC1 capacitive sensor
 - Measuring range: 0% rh to 100% rh
 - Resolution: 0.1% rh
 - Response time 63°
at 20°C/40°C: 10sec/4sec
 - Long term stability: better 1% rh per year
 - Uncertainty at 23°C: $\pm 1.5\%$ rh ($\pm 1\%$ rh possible by special calibration)
- Uncertainty over the whole temperature range without special calibration:



Pic. 2: Measurement uncertainties humidity versus operating temperature

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Pic. 3: Measurement uncertainties humidity versus operating temperature

- Air temperature:
 - Sensor: Pt100, 1/3 DIN
 - Measuring range: -40°C up to 85°C
 - Precision: $\pm 0,3^{\circ}\text{C}$
 - 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

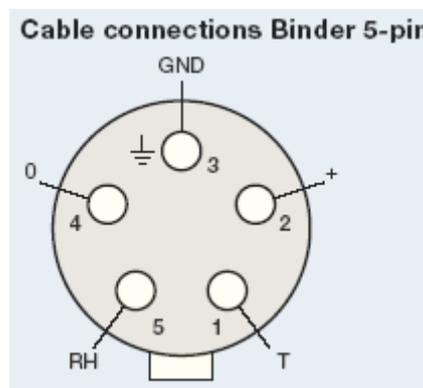
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- Current when switched-on < 4mA
- The Hygroclip sensor is switched-on only during measuring cycles for 5 seconds. That method reduces the total power consumption. The Gealog measuring interface can use the "switched mode".

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"



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

Pin No. Round Pin Connector (Pic. 4)	Signal	Signal	Remark	Recommended Wire Color
1		Temperature - analog output	Not used for Gealog systems	
2	VCC	Power supply 3.5 to 50 V DC		brown
3	GND	Power supply ground		green



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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: Polycarbonat, 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.

Humidity channel	Parameter	Value
	Minimum	0.0
	Maximum	255.9
	Physical unit	%
	Degree of calibration polynom	1
	a0	0
	a1	1

Temperature channel	Parameter	Value
	Minimum	-50.0
	Maximum	205.9
	Physical unit	°C
	Degree of calibration polynom	1
	a0	0
	a1	1

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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Production quality standard

- Production according to ISO9001



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Ordering Information

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

Accessories

- **Connection Cable with Connector for Hygroclip**
 - o Sensor cable incl. bayonet connector to Hygroclip
 - o Loose ends on the datalogger's side
 - o Standard length 5 meters
 - o Please specify other length of cable on order
- **Cable PUR 3*0.25 Shielded**
 - o Data- and sensorcable
 - o UV resistant
 - o For use in open air
 - o PU mantle 3 x 0.25 mm²
 - o Wire colors: brown, green, white
 - o Wire resistance: 82 Ohms per km
 - o Outer diameter: 4.7 mm
- **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

Revision List

No.	Revision	Date	Name	Description of Changes
1	1	20.9.06	Pe	New release

Document: Certificate_Hygroclip_Air_Temperature_Air_Humidity_Sensor.doc