

# HYGRO-THERMO-PRESURE SENSOR COMPACT



**High measuring quality  
and robust, reliable technology**

With 3 individual sensors:

- Relative humidity
- Air temperature
- NEW: Atmospheric pressure

# HYGRO-THERMO-PRESSURE SENSOR COMPACT

The Hygro-Thermo-Pressure (H T P) sensors of our COMPACT series are designed to measure relative humidity, air temperature and atmospheric pressure.

This sensor is well suited for use at meteorological measuring stations and for connection to data logger systems. Due to its universal interface, the sensor can also be used as a single solution in any suitable application.

The excellent dynamics due to the separately positioned temperature sensor and the use of stainless steel as the housing material, as well as the protection class IP 67, are the special features of this sensor. This allows it to be used even in applications with the highest stresses.

## The outstanding features of the sensor are:

- high long-term stability,
- almost linear characteristic curve,
- very good dynamic behaviour,
- resistance to condensation,
- low temperature coefficient,
- lowest hysteresis.

The digital interface of the unit consists of an RS485 interface in half-duplex mode. Together with ID-based communication, the interface allows the sensor to operate in a bus system.

## Two data protocols are available:

- ASCII (THIES format)
- Binary (MODBUS-RTU)

As further interfaces, the sensor offers the well-known standard signal outputs 4-20 mA and 0-1/10 V with corresponding scaling.



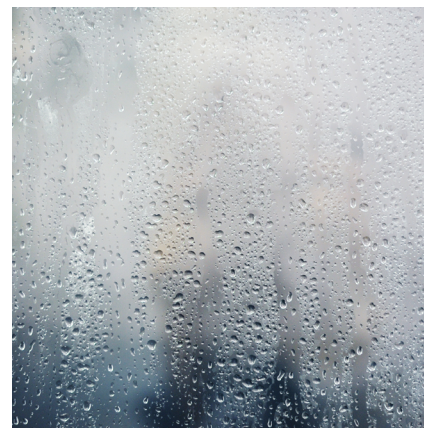
The exchangeable hygro-thermo module and the permanently installed pressure sensor are adjusted and calibrated at the factory.

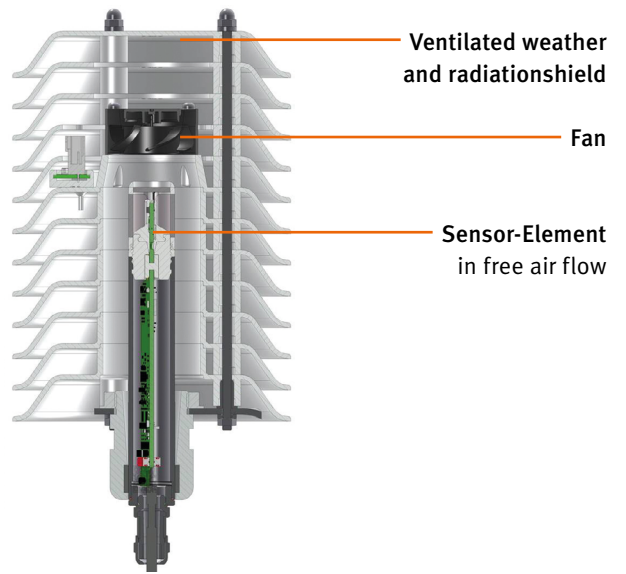
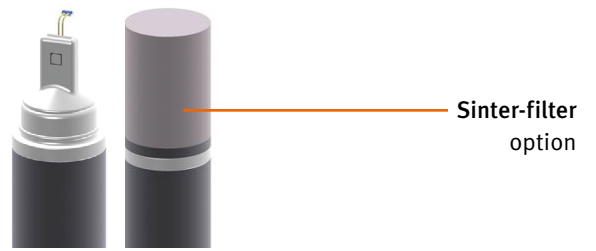
The sensor is supplied with a protective cap.

The hygro-thermo module is protected by a white membrane.

The individual measured values are recorded and evaluated every second. Internally, the dew point and absolute humidity are calculated from the temperature and relative air humidity. These values are also output in the data telegram.

**Please contact our sales staff and request detailed information for your projects.**





Accessories:  
Ventilated weather- and radiation protection  
With function control signal

# HYGRO-THERMO-PRESSURE SENSOR COMPACT

## TECHNICAL DATA

Order-no.: 1.1006.54.xxx

<b>Relative humidity</b>	
Measuring range	0 ... 100%
Accuracy	Typ. $\pm 1,5\%$ r. h. @ 25 °C and $< 80\%$ r. h., $\pm 2\%$ r. h. whole measuring range
Long term stability	Typ. $< 0,25$ rel. humidity / year
Setting time*	$\leq 10$ sec
<b>Air temperature</b>	
Measuring range	-40 ... +85 °C
Accuracy	$\pm 0,1$ °C @ -40 ... +85 °C @ moving air $> 2$ m/s
Long term stability	Max. $\leq 0,03$ °C /year
Setting time*	$\leq 20$ sec
<b>Atmospheric pressure</b>	
Measuring range	300 ... 1200 hPa
Accuracy	$\pm 0,25$ hPa @ -20 ... +80 °C @ 800 ... 1100 hPa $\pm 0,50$ hPa @ -20 ... +80 °C @ 600 ... 800 hPa
Long term stability	$\pm 0,3$ hPa / year
Setting time*	$\leq 8$ s bei 5 m cable length, $\leq 15$ s bei 50 m cable length
<b>Calculated parameter</b>	
Dew point temperature	°C
Absolute humidity	g/m <sup>3</sup>

\* Tau 63%

<b>Digital Interface</b>	
Typ	RS485
Mode	Half-Duplex-Mode
Data format	8N1
Baud rate	2400, 4800, 9600, 19200, 38400, 57600
Resolution (depending on telegram)	Air pressure: 0,01 hPa (max.) Humidity: 0,1% rel. humidity Temperature: 0,01 °C (max.)
<b>Analogue output</b>	
0 ... 1V @ U <sub>B</sub> >6V	16 Bit
0 ... 10V @ U <sub>B</sub> >15V	16 Bit
4 ... 20mA @ U <sub>B</sub> >15V	16 Bit
No.	3, free configurable
<b>Miscellaneous</b>	
Power supply	Voltage: 6 ... 30 V DC/Typ. 36 mA @ 12V see also unit design
Environmental Conditions	-40 ... +85 °C; 0 ... 100% rel. humidity, including condensation
Dimensions w. cable	166 mm height, Ø 20 mm
Dimensions w. connector	200 mm height, Ø 20 mm
Weight	ca. 0,45 kg
Protection	IP 67 (for complete Sensor)
Housing	Stainless steel

### Sensor versions

Order-no.	Digital interface / data format / analogue interface	Power supply	Version
1.1006.54.080	RS 485 HD / THIES ASCII / -	6 ... 30 V DC	5 m cable
1.1006.54.081	RS 485 HD / MODBUS RTU / -	6 ... 30 V DC	5 m cable
1.1006.54.141	RS 485 HD / THIES ASCII / 4 ... 20 mA	15 ... 30 V DC	5 m cable
1.1006.54.160	RS 485 HD / THIES ASCII / 0 ... 1 V	6 ... 30 V DC	5 m cable
1.1006.54.161	RS 485 HD / THIES ASCII / 0 ... 10 V	15 ... 30 V DC	5 m cable
1.1006.54.741	RS 485 HD / THIES ASCII / 4 ... 20 mA	15 ... 30 V DC	Plug Incl. mating plug
1.1006.54.760	RS 485 HD / THIES ASCII / 0 ... 1 V	6 ... 30 V DC	Plug Incl. mating plug
1.1006.54.761	RS 485 HD / THIES ASCII / 0 ... 10 V	15 ... 30 V DC	Plug Incl. mating plug
1.1006.54.780	RS 485 HD / THIES ASCII / -	6 ... 30 V DC	Plug Incl. mating plug
1.1006.54.781	RS 485 HD / MODBUS RTU / -	6 ... 30 V DC	Plug Incl. mating plug

### Accessories (optional)

Order-no.	Designation	Order-no.	Designation
510025	Calibration piece air pressure for HTB Sensor	510488	Protective cap
510307	Spare-Hygro-thermo-modul	1.1005.54.903	Wall holder ZA50
510314	Filter cap sintered	1.1025.55.000	Weather and radiation shield, without fan
		1.1025.80.101	Weather and radiation shield, with fan

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**Thies**  
**CLIMA**

