

Indoor T+H Sensor

Temperature and humidity sensor with wireless M-Bus and LoRaWAN® interface

The Indoor T+H Sensor determines the temperature and relative humidity of indoor spaces. The sensor supports the user in optimizing the heating and ventilation behavior. The current temperature and humidity values can be read at any time on the display of the device. The data recorded and stored by the device can be transmitted to downstream recording systems using wireless M-Bus or LoRaWAN® radio technology. This creates transparency with regard to the heating and ventilation behavior in order to be able to derive possible efficiency and optimization measures. For example, this data can be used to prevent mold growth.

The temperature and humidity are measured inside the device every three minutes. The average value of the last quarter of an hour is determined from the measured values, saved and summed up in the register of the respective temperature or humidity range. The radio transmission takes place every 20 seconds for wireless M-Bus and every hour for LoRaWAN®.



Product features

- Measurement, display and data transmission of temperature and humidity
- Data transmission via wireless M-Bus or LoRaWAN®
- Battery life up to 10 years + storage reserve
- Internal antenna
- Plug & Play – start-up mode
- Optical interface for configuration and readout of stored data
- Wall mounting with sealing option

Sensors

- Temperature measurement range: -20°C to 50°C
- Measuring accuracy: ±0.3°C in the range from 5°C to 50°C
- Humidity measurement range: 0% to 100% RH
- Measuring accuracy: ±2% RH in the range from 20% to 80%
- Resolution of the measured values: 0.1°C and 0.1% RH

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Technical data radio module

Operating frequency	868 MHz
Transmission power	max. 14dBm, 25mW
Transmission interval	configurable; Default: hourly (LoRaWAN®), 20s (wireless M-Bus)
Data transmission method	LoRaWAN® class A (bidirectional), wM-Bus C1 mode (unidirectional)
Encryption of the radio protocols	AES-128 (wireless M-Bus: Encryption Mode 5)
Error detection	CRC
Power supply	permanently installed
Battery lifetime	10 years + storage reserve (wireless M-Bus); up to 10 years with SF7 (LoRaWAN®)
Battery status monitoring	yes
Protection class	IP40
Ambient condition	+5°C to +55°C
CE conformity	according to Directive 2014/53/EU (RED)
Radio activation	by placing on the back plate

User interface

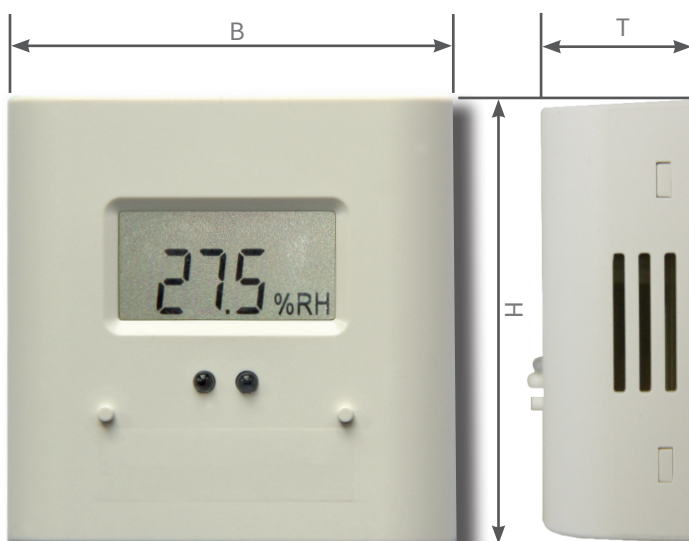
LCD display	yes
Dimensions of the LCD display (BxH)	30 x 15mm
Display values	temperature, humidity
Optical interface	yes

Data logger (readable via the opt. IrDA interface)

Daily values	32
Half-month values	18
Monthly values	18

Dimension and weight

Width approx.	B	mm	64
Height approx.	H	mm	64
Depth	T	mm	21,5
Weight approx.		kg	0,06 (without packaging)



Dimensions

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LoRaWAN® radio telegram

Protocol content:	Interval:
Device ID	once when logging into the LoRaWAN® network
Device-specific information (firmware version, device type)	once after activation, then every six months
Date, time	monthly
status messages (e.g. battery status)	Event triggered
Cyclic measurement data	every hour (scenario 204) *

Wireless M-Bus radio telegram

Protocol content (scenario 331):

Current temperature
Current rel. humidity
Device-specific information (serial number, device type)
Manufacturer information
Status messages (e.g. battery status)

* other scenarios can be configured

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