

B-TH-01

Digital Humidity and Temperature Sensor



QUICK START



MECHANICAL DRAWING



STEP FILE

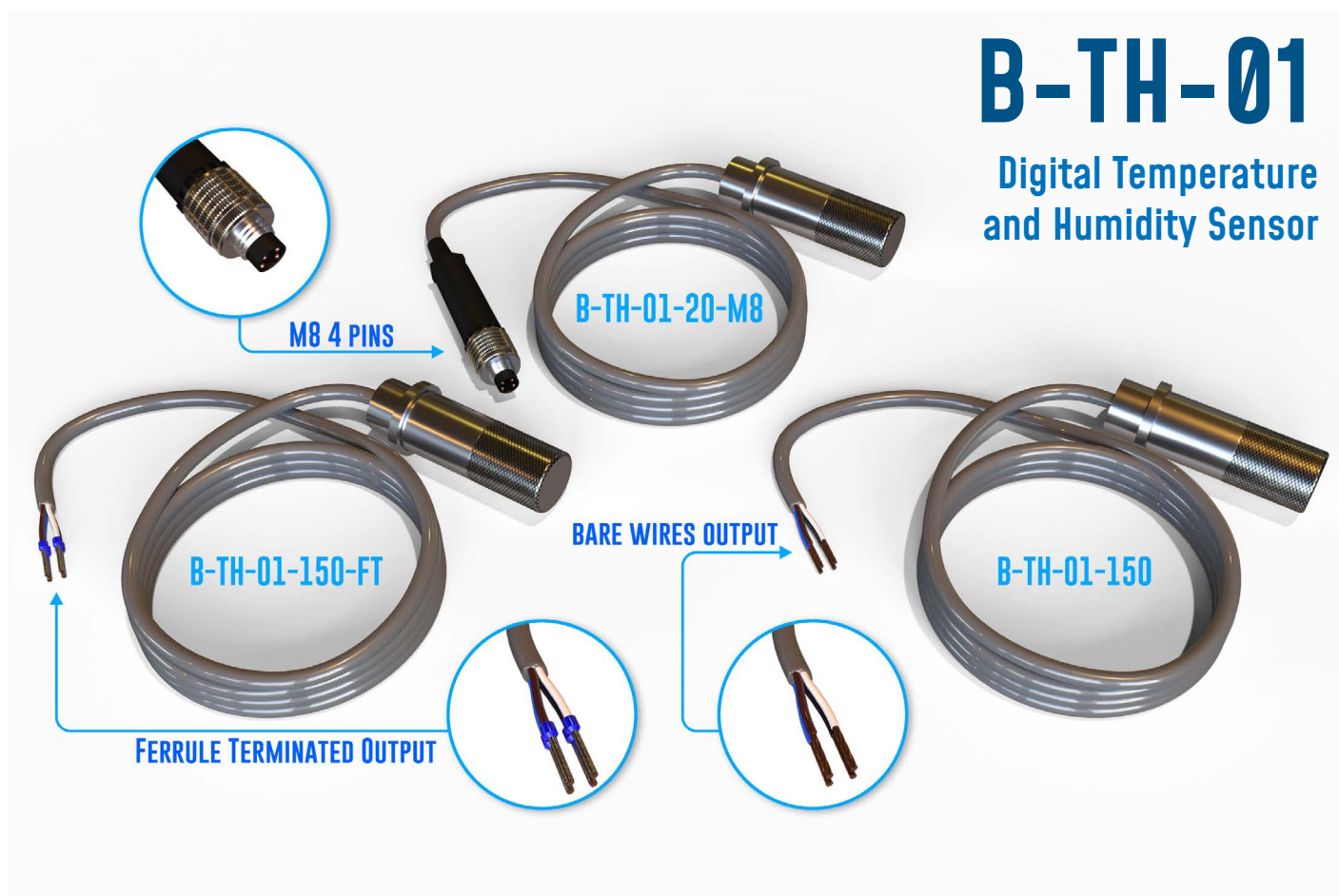
CE FC



MADE IN GERMANY

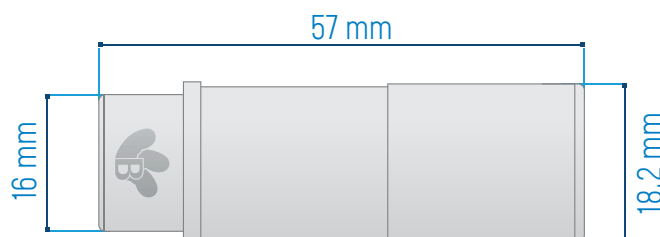
B-TH-01

Digital Temperature and Humidity Sensor



OVERVIEW

The Digital T/H Sensor **B-TH-01** is dedicated to Temperature and Air Humidity Measurement for dusty environment. It comes with digital I2C output, and ESD +15kV protection.



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APPLICATIONS



Agriculture & Greenhouse

Environmental Monitoring



Medical lab & clean room

Cold chain traceability



Heating, ventilation, and air conditioning

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MAIN FEATURES

- Measuring range : 0 to 100 %RH for Humidity, Temperature Range: -40°C to +80°C
- Accuracy: $\pm 2\%$ RH for humidity , ± 0.2 °C for temperature
- Power Supply: 5VDC
- Waterproof IP67
- Digital Output : I2C with 14-bit of resolution

TECHNICAL SPECIFICATIONS

PRODUCT REFERENCE

B-TH-01-CL-CON

CL : Cable length in cm (minimum cable length 20 cm, maximum cable length 150 cm)

CON : CABLE CONNECTOR

M8: M8 Connector

FT : Ferrule Terminated

Leave it free if you need with bare wires output

Example 1: B-TH-01-20-M8

Temperature Humidity sensor with 20 cm cable length with **M8 Plug connector**

Example 2: B-TH-01-150

Temperature Humidity sensor with 150 cm cable length with **bare wires output**

Example 3: B-TH-01-150-FT

Temperature Humidity sensor with 150 cm cable length with **Ferrule Terminated Output**

TEMPERATURE SENSOR SPECIFICATIONS

Temperature Sensor technology	Thermistor
Measurement range	-40°C to +85°C
Accuracy Tolreance	± 0.1 °C , for temperature range +20°C to +60°C See Figure 3 more information
Repeatability	± 0.04 °C
Sensor resolution	0.01 °C
Long term drif	< 0.03 °C / year
Response time	< 20s with sensor cap

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HUMIDITY SENSOR SPECIFICATIONS

Humidity Sensor technology	Capacitive polymer humidity sensor
Measurement range	0 to 100 %RH
Accuracy Tolerance	±1.5 %RH for Humidity range 0 to 90 %RH and temperature range +10°C to +60°C See Figures 1 and 2 for more information
Repeatability	±0.08 %RH
Sensor resolution	0.01% RH
Hysteresis (10 %RH to 70 %RH)	< ±0.8% RH
Response time	<20s with sensor housing
Long term drift	0.25 % RH / year

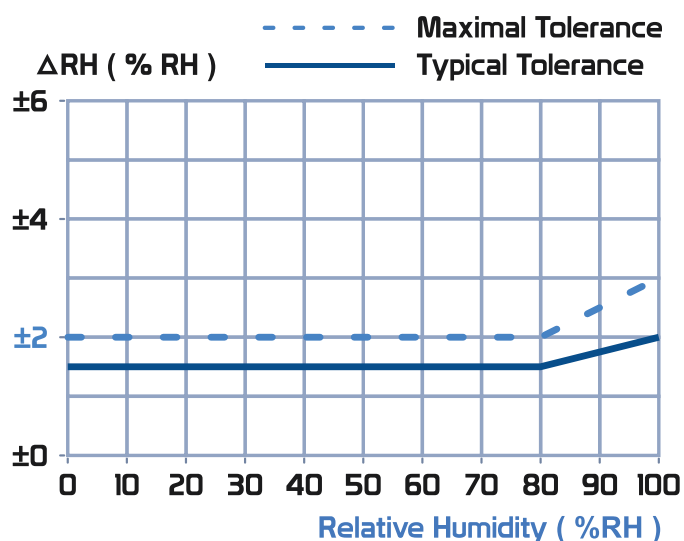


Figure 1 : Tolerance of %RH over Temperature

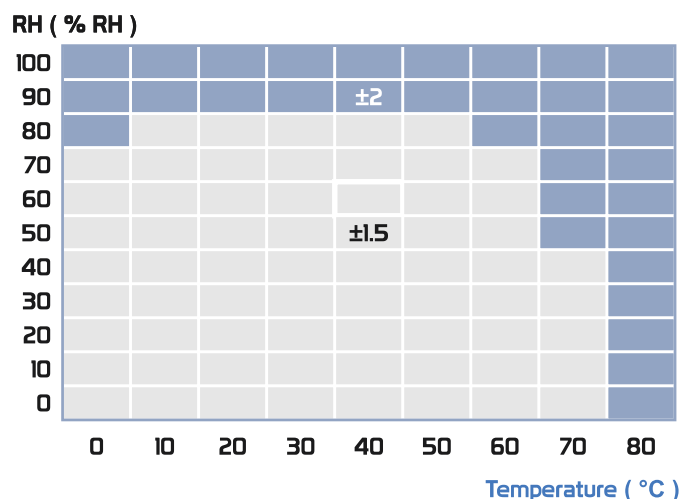


Figure 2 : Typical Accuracy Tolerance of %RH over Temperature

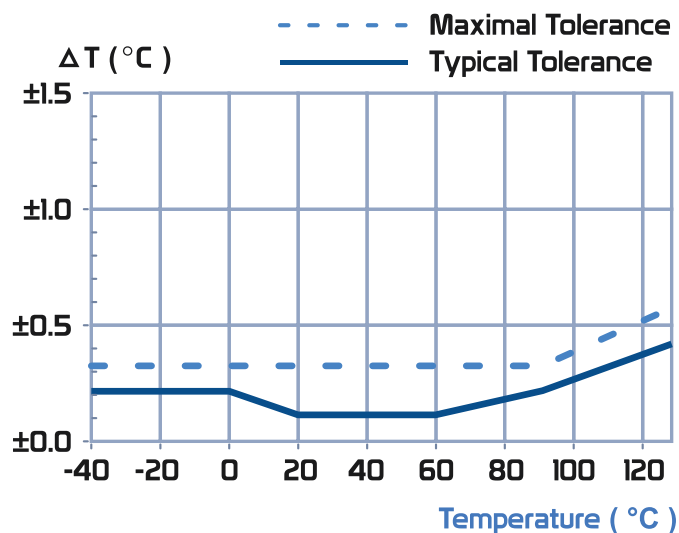






Figure 3 : Temperature Tolerance accuracy

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TECHNICAL SPECIFICATIONS

SENSOR OUTPUT

Digital Output	I2C up to 400 kHz, 14-bit resolution . Sensirion Sensor SHT35
Wiring code	Green => Sensor Power Supply 2.4VDC to 5.5VDC  Brown => Ground  Yellow => SCL  White => SDA 
ESD protection	+15kV

SENSOR HOUSING

Dimensions	Diameter 18 mm, Length: 57 mm
Sensor housing	Waterproof (IP66) stainless steel with 30-45µm of pore size
Pressure Resistant	Up to 16 bar
Operating Temperature	-40°C to +85°C
Weight	40g
Dew formation resistant	Yes

ENVIRONMENTAL AND MECHANICAL

Operating Temperature	-40°C to +75°C
Norms	FCC & CE compliant ROHS - Directive 2002/95/EC

POWER SUPPLY

Power Supply Volatge	2.4V to 5.5V
Supply Current	1.5 mA during measurement 45 uA during idle state
Power Up time	1ms max

The hysteresis value is the difference between an RH measurement in a rising and falling RH environment, at a specific RH point

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