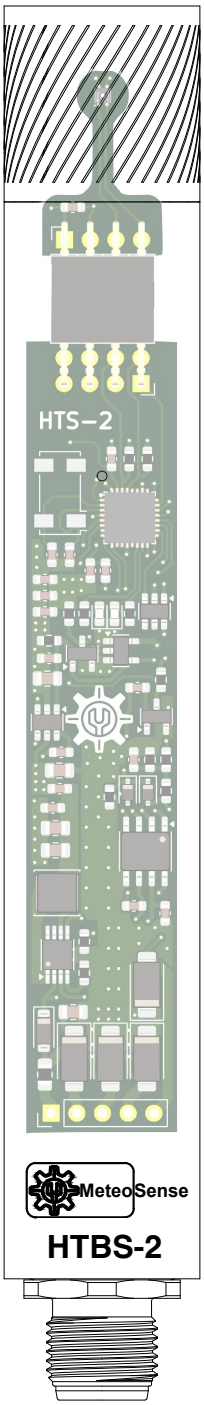
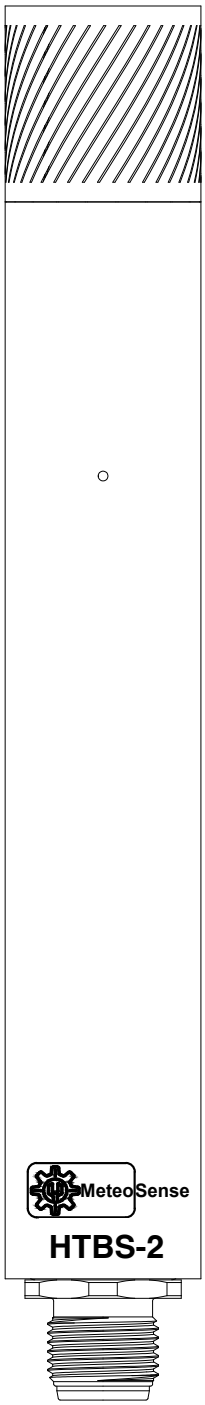
HT(B)S-2

High-Precision temperature and humidity sensor with optional pressure measurement for meteorological applications

Product Overview | Document No. MS-HTBS-2—PO0002-04 | © 2025 Meteosense





General Description

The HT(B)S-2 is a high-precision temperature, humidity with optional pressure measurement, engineered for maximum reliability in both mobile and stationary meteorological applications. Encased in a durable, aluminium housing.With ultra-low power consumption and multiple digital interfaces, the HT(B)S-2 seamlessly integrates into weather stations, climate research systems, and environmental monitoring networks.

Functionality & Data Handling

• Real-time temperature, humidity and pressure values available on-demand
• Configuration via USB with digital interface (baud rate, parity, slave address, send interval)
• Internal FIFO buffering with oversampled precision
• All settings persist after power loss
• USB supports data streaming and batch logging to PC

Typical Aplication

- Meteorological stations (national, regional, remote)
- Environmental and climate research observatories
- Helipad and runway weather instrumentation
- Mobile survey and air-quality trailers
- Calibration reference for pressure measurements

Low Power Features

The HT(B)S-2 includes an intelligent sleep management system. It detects master polling behavior and dynamically adjusts wake-up timing, minimizing energy use. Typical sleep consumption: 14 µA, ideal for solar or battery-powered deployments.

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HTS-2 / HTBS-2 Electrical & General Specifications	
DC Input Voltage	5 VDC … 45 VDC (Peak up to 60 VDC)
ESD Protection I/O	15 kV
Reverse Polarity Protection	Yes
Power Consumption Low Power	14 µA at 12V
Power Consumption SDI-12	0.23 mA at 12V
Power Consumption RS-485	0.83 mA at 12V
Number of Sensors HTS-2	1
Number of Sensors HTBS-2	2
Temperature	
Measurement principle Temperature	Band-gap sensor
Temperature Compensation Range	-40°C … +80°C
Temperature Range	-40°C … +80°C
Temperature Units	°C, °F, K
Temperature Accuracy	±0.1°C
Temperature Repeatability (High)	±0.023°C
Temperature Resolution	0.01°C
Temperature Response Time (τ63%)	~1 – 2 s
Long-term Temperature Drift	<0.03°C/year
Humidity	
Measurement principle Humidity	Capacitive polymer sensor
Humidity Range	0…100 %RH
Relative Humidity Accuracy	±1.0 (typ.) %RH
Relative Humidity Repeatability (High)	±0.05 %RH
Relative Humidity Resolution	0.01 %RH
Relative Humidity Response Time (τ63%)	~4 – 7 s
Long-term Relative Humidity Drift	<0.2 %RH/year
Pressure (HTBS-2 only)	
Measurement principle Pressure	Capacitive MEMS sensor
Measurement principle Temperature (pressure sensor)	Band-gap sensor
Temperature Compensation Range for Pressure	-40°C … +80°C
Pressure Response Time (τ99%)	~100ms

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HTS-2 / HTBS-2 Electrical & General Specifications	
Pressure Range	400 hPa … 1200 hPa
Relative Pressure Accuracy 900 – 1100 hPa, 25 °C	±0.004 hPa
Relative Pressure Accuracy 700 – 1100 hPa, 15 – 55 °C,	±0.055 hPa
Absolute Pressure Accuracy 400 – 1100 hPa, –5 – 65 °C	±0.25–0.30 hPa
Absolute Pressure Accuracy 400 – 1100 hPa, –40 – 85 °C inkl. Drift, TCO, thermal drift	±0.9 hPa
Pressure Noise	0.0021–0.0025 hPa
Offset Temperature Coefficient (TCO) 300 – 1100 hPa, – 5 – 65 °C	±0.005 hPa/K
Max. thermal hysteresis 400 – 1100 hPa, 65 – 85 °C	+0.17 hPa
Max. thermal hysteresis 400 – 1100 hPa, -40 – 5°C	-0.095 hPa
Long-Term Drift	±0.08–0.10 hPa
Short-Term Drift	±0.009–0.010 hPa
Resolution	1/64 hPa ≈ 0.0156 hPa
Linearity Compensation	32 points
Hysteresis	0.02 hPa
Outputs	
Interfaces	RS-485, SDI-12, USB
Protocols	Modbus RTU/ASCII, SDI-12 1.4
Baud Rate RS-485	9.6, 34, 56, 96, 115.2 kbit/s
Baud Rate SDI-12	1.2, 2.4, 4.8 kbit/s
Output Interval Continuous Mode RS-485/SDI-12	1 s … 86400 s
Output Interval USB Streaming	1s … 3600s
Housing	
Housing	Anodized Aluminium
IP rating according to IEC 60529	IP65
Filter	Stainless Steel 1.4404, IP65
Housing dimensions	Ø20mm x 130mm
Connection	M12x5 A

Notes: All output intervals and settings are user-configurable via USB

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