



# SB110-T

## Wireless Sensor with PT100

The SB110-T family connects PT100 temperature sensors without the expense and hassle of cabling. Its integrated low power IEEE 802.15.4 transceiver provides long battery life and seamless wireless connectivity in hard to reach areas, when portability is essential, or in locations where running cables is inconvenient or not cost-effective. Enabled by our industrial-grade mesh networking protocol, the SB110-T family provides highly reliable performance even in harsh environments to ensure delivery of critical temperature measurements.

The integrated PT100 interface incorporates a 24-bit ADC for accurate conversion of the PT100 ohm resistance value into temperature data, in accordance with the DIN EN60751 standard. When activated, the SB110-T adapter will automatically sample, log and transmit these readings in fully user-configurable intervals. Bi-directional communication is also supported, allowing the adapter to be wirelessly controlled and re-configured.

SB110-T nodes are available with a choice of enclosure ratings, antenna types and operating temperature ranges to suit most applications. In addition to its packaged products, Wireless Sensors also offers a functionally equivalent OEM module for integration in custom designs.



Antenna type <sup>1</sup>	External	External	-
Antenna connector	Reverse-SMA	Reverse-SMA	Hirose U.FL
Enclosure rating	IP65	IP54	OEM module
Dimensions <sup>2</sup>	3.9 x 2.5 x 1.5" (98 x 64 x 38 mm)	3.9 x 2.5 x 1.5" (98 x 64 x 38 mm)	2.8 x 2.1 x 1.4" (72 x 53 x 35 mm)
Weight <sup>3</sup>	5.6 oz (160 grams)	5.6 oz (160 grams)	(1.2 oz) 35 grams
Operating temperature range	-20 °C to +65 °C <sup>4</sup>	-20 °C to +65 °C <sup>4</sup>	-40 °C to +85 °C
Order code	SB110-T-E65	SB110-T-E54	SB110-T-O

<sup>1</sup> Internal antenna available on request

<sup>2</sup> Excluding antenna

<sup>3</sup> Weight specifications of IP54 and IP65 include weight of batteries. Subtract 40 grams (1.4 oz) for weight of the product when externally powered

<sup>4</sup> -40 °C to +85 °C available on request

## Features and Benefits

- Integrated PT100 measurement transducer for direct connection to PT100 probes and sensors
- Nodes can be line powered or run on batteries, with a battery life of multiple years
- Self-forming, self-healing mesh network topology for maximum resilience and ease of deployment
- Up to 90% installation and commissioning cost savings over traditional cable-based solutions
- Time synchronization of all nodes assures accurate time stamping of individual measurements
- Embedded software provides autonomous data logging and reporting, triggers/alarms, battery condition monitoring, over-the-air configuration, firmware upgrades, and many other advanced capabilities

## Specifications

Wireless		General	
Radio type	IEEE 802.15.4 compliant	Sample rate (max.)	1 kHz
Frequency band	2.4 GHz	Scan cycle (typical)	10 s - 1 day
Standby current	20 $\mu$ A	Scan cycle (min.)	100 ms
Active measurement current	2 mA	Sensor interface	1 x PT100, 2-wire
Transmit current	55 mA	Sensor temperature range	-100°C - +400°C
Receive current	50 mA	Resolution	0.1°C / 24-bit
Node-to-node hops (max.)	3 <sup>5</sup>	Battery lifetime <sup>6</sup> @ 3000 mAh	<ul style="list-style-type: none"> <li>• 15 min heartbeat - up to 7 years (Leaf), 3 years (Router)</li> <li>• 5 min heartbeat - up to 5 years (Leaf), 18 months (Router)</li> </ul>
Line of sight range (max.)	250 m (820') node-to-node <sup>7</sup>	Accuracy	$\pm$ 0.25% of maximum range
In-building range (typical)	70 m (230') node-to-node	Power source	2 x AA batteries (3,000 mAh) or external 12 - 24 VDC
Receiver sensitivity	-92 dBm	Data log buffer	98 readings
Output power (max.)	2 dBm	Terminal cross-section	0.5 mm <sup>2</sup> - 1.5 mm <sup>2</sup>
Output power (typical)	0 dBm	EMC noise immunity	According to DIN-EN300328, DIN-EN50371
		EMC compatibility	According to DIN-EN60950
		Certifications	R/TTE, DIN-EN301489-1, DIN-EN301489-1, CE authorized for

<sup>5</sup> Extendable to up to 5 hops

<sup>6</sup> Longer battery life on request

<sup>7</sup> Extendable to up to 2 km (6,500')

## Complementary Products and Accessories

A Gateway device is required to establish and manage the wireless mesh network and to provide connectivity to backend systems and is specified separately

Accessory	Order Code	Accessory	Order Code
PT100 sensor, 2-wire	ACC-DS-PT100	2 dB dipole antenna, IP54	ACC-AT-S-54
Antenna extension cable, 10 cm (4")	ACC-RC-S-10	2 dB dipole antenna, IP65	ACC-AT-S-65
Antenna extension cable, 1 m (3')	ACC-RC-S-100	Battery pack, 3,000 mAh	ACC-BP-S
Antenna extension cable, 3 m (10')	ACC-RC-S-300	External power adapter	ACC-PS-SB

Specifications are subject to change without notice.



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