wireless sensors

SB110-DP

Wireless Differential Pressure Sensor

The SB110-DP measures differential pressure and transmits it over a wireless network. Its integrated radio provides seamless wireless connectivity and an efficient power management algorithm enables long battery life.

When flexibility is essential, or in locations where running cables is inconvenient or not cost-effective, this wireless sensor is an ideal solution. Based on our industry leading mesh networking protocol, the SB110 family delivers reliable performance even in harsh environments.

The differential pressure sensor comes as a factory-calibrated unit and detects even small differences with high sensitivity and precision.
SB110-DP automatically samples, logs and transmits these readings in user-configurable intervals. Bi-directional communication is also supported, allowing set points to be configured wirelessly. Flexible monitoring of air flow conditions and overpressure monitoring in clean rooms are typical applications for the SB110-DP.

Features and Benefits

- Factory-calibrated sensor
- Outstanding long-term stability and repeatability of the sensor, no drift
- 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
- Autonomous data logging and reporting, triggers, battery condition monitoring, over-the-air configuration and many other capabilities are given

Application Areas

- Data Center Monitoring
- HVAC Systems
- Healthcare Equipments
- Clean Room Monitoring

SB110-DP is available with a choice of enclosure options, antenna types to suit most applications.

Antenna type	External	Internal
Antenna connector	Reverse-SMA	-
Enclosure rating	IP54	IP54
Dimensions[1]	98 x 71 x 38 mm (3.9 x 2.8 x 1.5")	98 x 71 x 38 mm (3.9 x 2.8 x 1.5")
Weight[2]	160 grams (5.6 oz)	160 grams (5.6 oz)
Operating temperature range[3]	-20°C to +65°C (-4 to 149 °F)	-20°C to +65°C[3] (-4 to 149 °F)
Order code	SB110-DP-E54	SB110-DP-I

[1] Excluding antenna
[2] Weight specifications of IP54 include weight of batteries. Subtract 40 grams (1.4 oz) for weight of the product when externally powered
[3] -40°C to +85°C available on request

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 µA	Scan cycle (min.)	100 ms
		Battery lifetime [6] @ 3000 mAh	▪ 15 min heartbeat - up to 7 years (Leaf), 3 years (Router) ▪ 5 min heartbeat - up to 5 years (Leaf), 18 months (Router)
Active measurement current	12 mA	Power source	2 x AA batteries (3,000 mAh) or external 3 VDC
Transmit current	55 mA	Data log buffer	98 readings
Receive current	50 mA	EMC noise immunity	According to DIN-EN300328, DIN-EN50371
Node-to-node hops (max.)[4]	3	EMC compatibility	According to DIN-EN60950
Line of sight range (max.) [5]	250 m (820') node-to-node	Certifications	R/TTE, DIN-EN301489-1, DIN-EN301489-1, CE authorized for use in Europe
In-building range (typical)	70 m (230') node-to-node	Accessories	Several accessories available on request
Receiver sensitivity	-92 dBm	**Pressure**	
Output power (max.)	2 dBm	Measurement range	± 500 Pa (±5 mbar)
Output power (typical)	0 dBm	Accuracy	0.2 Pa ± 3% of measured value
		Air connection	6mm connection
		Resolution	0.5 Pa

[4] Extendable to up to 5 hops
[5] Extendable to up to 2 km (6,500')
[6] Longer battery life on request

. Specifications are subject to change without notice.

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