



E-Senza®
Technologies

Leveraging Power of Wireless®

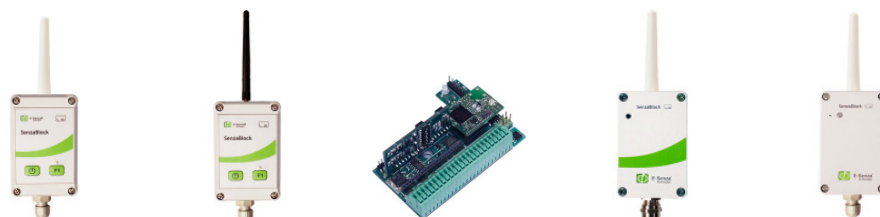
SenzaBlock SB110-AI

Wireless Adapter with 2-Channel Analog Input

The SenzaBlock SB110-AI family connects sensor devices with analog interfaces 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, where portability is essential, or in locations where running cables is inconvenient or not cost-effective. Enabled by our industrial-grade SenzaNET mesh networking protocol, the SB110 family provides highly reliable performance even in harsh environments to ensure delivery of critical measurements.

The two integrated analog input channels are configurable and rely on a 12-bit ADC for accurate conversion of the analog data. When activated, the SB110-AI adapter will automatically sample, log and transmit these readings in user-configurable intervals. Bi-directional communication is also supported, allowing the module to be wirelessly controlled and re-configured.

SB110-AI 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, E-Senza also offers a functionally equivalent OEM module for integration in custom designs.



Antenna type	External	External	-	External	External
Antenna connector	Reverse-SMA	Reverse-SMA	Hirose U.FL	Reverse-SMA	Reverse-SMA
Enclosure rating	IP65	IP54	OEM module	IP65, rugged aluminum	IP40, temper proof ¹
Dimensions ²	126 x 64 x 38 mm (5 x 2.5 x 1.5")	126 x 64 x 38 mm (5 x 2.5 x 1.5")	72 x 53 x 35 mm (2.8 x 2.1 x 1.4")	126 x 64 x 35 mm (5 x 2.5 x 1.4")	126 x 64 x 38 mm (5 x 2.5 x 1.5")
Weight ³	160 grams (5.6 oz)	160 grams (5.6 oz)	35 grams (1.2 oz)	280 grams (9.9 oz)	180 grams (6.4 oz)
Operating temperature range	-20°C to +55°C ⁴	-20°C to +55°C ⁴	-40°C to +85°C	-20°C to +55°C ⁴	-20°C to +55°C ⁴
Order code	SB110-AI-E65	SB110-AI-E54	SB110-AI-O	SB110-AI-A65	SB110-AI-TP40

¹ IP 65 on request

² Excluding antenna


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

⁴ -40°C to +85°C available on request

Features and Benefits

- Integrated analog signal conditioning for direct connection to sensors
- Nodes can be line powered or run on batteries, with a battery life of multiple years
- Self-forming, self-healing mesh network 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 µA	Scan cycle (min.)	100 ms
Active measurement current	2 mA	ADC resolution	12-bit
Transmit current	55 mA	Accuracy	±0.1 % of maximum range
Receive current	50 mA	Power source	2 x AA batteries (3,000 mAh) ⁵ or external 12 - 24 VDC
Node-to-node hops (max.)	3	Data log buffer	98 readings
Line of sight range (max.)	250 m (820') node-to-node	Terminal cross-section	0.5 mm ² - 1.5 mm ²
In-building range (typical)	70 m (230') node-to-node	Input	
Receiver sensitivity	-92 dBm	Interfaces	2 x 0-20 mA or 4-20 mA or 0-2 V or 0-10 V ⁶
Output power (max.)	2 dBm	Input resistance 0-20 mA	<100 Ω at 20 mA
Output power (typical)	0 dBm	Input resistance 0-10 V	>12.5 MΩ
Certifications		ADC linearity	± 0,2 %
EMC noise immunity	According to DIN-EN61000	Integration time	ca. 5 ms
EMC compatibility	According to EN55011, Class A	Settling time	<10 µs
Certifications	 R&TTE 1995/5/EC, EN300 440-2 V1.1.2, ETSI EN301 489-03 V1.4.1, EN60950-1:2001 + A11:2006, EN50371:2002, CE, FCC Title 47 Part 15 authorized for use in Europe & USA	Conversion time	7.5 µs

⁵ Higher capacity on request

⁶ 0 - 10 V possible only when externally powered

Complementary E-Senza Products and Accessories

A SenzaGate device is required to establish and manage the wireless mesh network and to provide connectivity to backend systems.

Accessory	Order Code	Accessory	Order Code
Antenna extension cable, 1 m (3')	ACC-RC-S-100	Battery pack, 3000 mAh	ACC-BP-LT
Antenna extension cable, 3 m (10')	ACC-RC-S-300	Battery pack, 4800 mAh, high temperature	ACC-BP-HT
2 dB dipole antenna, IP54	ACC-AT-S-54	Battery pack, 7200 mAh, high temperature	ACC-BP-HTH1
2 dB dipole antenna, IP65	ACC-AT-S-65	Battery pack, 14400 mAh, high temperature	ACC-BP-HTH2
5 dBi dipole antenna, IP54	ACC-AT-H-54	External power adapter	ACC-PS-SG
9 dBi dipole antenna, IP54	ACC-AT-H9-54		
2-way Antenna Splitter	ACC-AT-SP		

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