



E-Senza®
Technologies

Leveraging Power of Wireless®

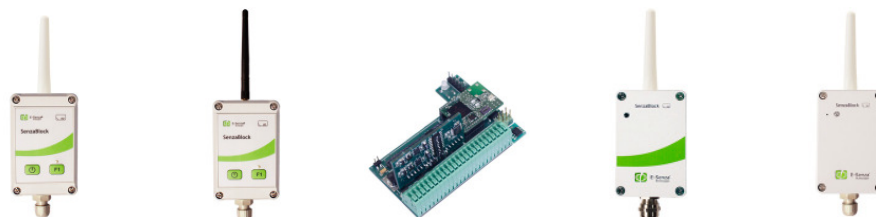
SenzaBlock SB110-IO

Wireless Adapter with 2-Channel Digital Input/Output

The SenzaBlock SB110-IO family connects digital sensors, meters, and actuators 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 SenzaNET mesh networking protocol, the SB110 family provides highly reliable performance even in harsh environments to ensure delivery of critical measurements and commands.

When activated, the SB110-IO adapter will automatically sample, log and transmit sensor readings in user-configurable intervals. The end-to-end latency of wireless transmissions is low and predictable, due to time synchronization of all nodes and employment of a TDMA scheme. Furthermore, the adapter itself can be wirelessly controlled and re-configured.

SB110-IO 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-IO-E65	SB110-IO-E54	SB110-IO-O	SB110-IO-A65	SB110-IO-TP40

¹ IP65 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 pulse/digital interfaces for direct connection to sensors, meters, and actuators
- Up to 90% installation and commissioning cost savings over traditional cable-based solutions
- Embedded software provides data logging and reporting, triggers/alarms, battery monitoring, over-the-air configuration, firmware upgrades, and many other advanced capabilities

Specifications

Wireless		General	
Radio type	IEEE 802.15.4 compliant	Input interfaces	2 x digital, pulse S0
Frequency band	2.4 GHz	Output interfaces	2 x digital
Standby current	20 μ A	Sample rate (max.)	10 Hz
Active measurement current	2 mA	Scan cycle (typical)	10 s - 1 day
Transmit current	55 mA	Scan cycle (min.)	100 ms
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	Digital Input	
Receiver sensitivity	-92 dBm	Response time	0.1 s
Output power (max.)	2 dBm	Signal voltage (low)	0 - 1.2 VDC
Output power (typical)	0 dBm	Signal voltage (high)	2.4 - 60 VDC
Certifications		Input current (max.)	50 mA
EMC noise immunity	According to DIN-EN61000	Input resistance	>1 M Ω
EMC compatibility	According to EN55011, Class A		
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		
Digital Output			
Signal voltage (low)	<0.2 V		
Signal voltage (high)	>Vcc-0.2 V to 60 V		
Load	Resistive		
Switching frequency (max.)	Heartbeat		
Output current (max.)	500 mA		

⁵ Higher capacity on request

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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