



**E-Senza<sup>®</sup>**  
Technologies

Leveraging Power of Wireless<sup>®</sup>

# SenzaBlock SB110-AO

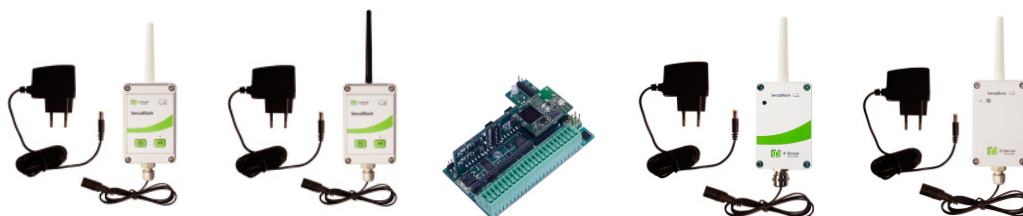
## Wireless Adapter with 2-Channel Analog Output

The SenzaBlock SB110-AO family is set apart by its actuation interfaces, designed to output analog control signals to a broad class of actuators, yet without the expense and hassle of cabling. Its integrated low power IEEE 802.15.4 transceiver provides 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 commands.

The two integrated analog output channels are configurable to support different types of actuators, and rely on a 12-bit DAC for conversion of the digital control signals. 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. In addition, the adapter itself can be wirelessly controlled and re-configured.



SB110-AO 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 <sup>1</sup>
Dimensions <sup>2</sup>	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	120 grams (4.2 oz)	120 grams (4.2 oz)	35 grams (1.2 oz)	280 grams (9.9 oz)	180 grams (6.4 oz)
Operating temperature range	-20° C to +65° C <sup>3</sup>	-20° C to +65° C <sup>2</sup>	-40° C to +85° C	-20° C to +65° C <sup>2</sup>	-20° C to +65° C <sup>2</sup>
Order code	SB110-AO-E65	SB110-AO-E54	SB110-AO-O	SB110-AO-A65	SB110-AO-TP40

<sup>1</sup> IP65 on request


<sup>2</sup> Excluding antenna

<sup>3</sup> -40° C to +85° C available on request

## Features and Benefits

- Integrated analog output interfaces for direct connection to sensors and actuators
- 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 low latency
- Embedded software provides triggers/alarms, over-the-air configuration, firmware upgrades, and many other advanced capabilities

## Specifications

Wireless		General	
Radio type	IEEE 802.15.4 compliant	Scan cycle (typical)	10 s - 1 day
Frequency band	2.4 GHz	Scan cycle (min.)	100 ms
Standby current	20 $\mu$ A	Resolution	12-bit
Active measurement current	2 mA	Accuracy	$\pm 0.1$ % of maximum range
Transmit current	55 mA	Power source	12 - 24 VDC
Receive current	50 mA	Terminal cross-section	0.5 mm <sup>2</sup> - 1.5 mm <sup>2</sup>
Node-to-node hops (max.)	3	Output	
Line of sight range (max.)	250 m (820') node-to-node	Interfaces	2 x 0-20 mA or 4-20 mA or 0-2 V or 0-10 V
In-building range (typical)	70 m (230') node-to-node	DAC linearity	$\pm 2$ %
Receiver sensitivity	-92 dBm	Integration time	ca. 5 ms
Output power (max.)	2 dBm	Settling time	<10 $\mu$ s
Output power (typical)	0 dBm	Conversion time	7.5 $\mu$ s
Certifications			
EMC noise immunity	According to DIN-EN61000		
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		

## 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	External power adapter	ACC-PS-SG
Antenna extension cable, 3 m (10')	ACC-RC-S-300		
2 dB dipole antenna, IP54	ACC-AT-S-54		
2 dB dipole antenna, IP65	ACC-AT-S-65		
5 dBi dipole antenna, IP54	ACC-AT-H-54		
9 dBi dipole antenna, IP54	ACC-AT-H9-54		
2-way Antenna Splitter	ACC-AT-SP		

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**E-Senza**  
Technologies

E-Senza Technologies GmbH  
 Max-Stromeyer-Straße 116 · D-78467 Konstanz · Germany  
 T +49 7531 36599-10 · F +49 7531 36599-29  
 info@e-senza.de · www.e-senza.com

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