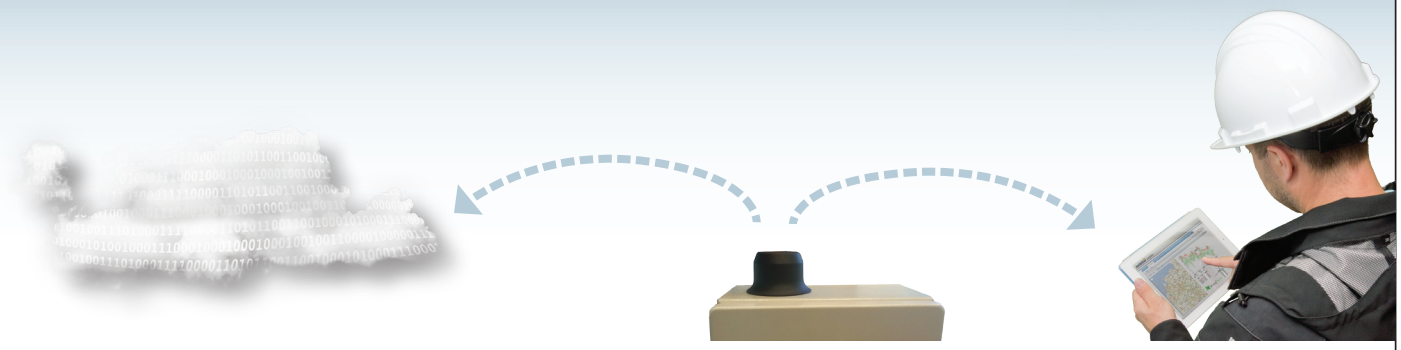
Wireless Bolt™

Anybus Wireless Bolt enables you to connect industrial machinery to a wireless network. It is attached onto a cabinet or a machine to enable wireless access.

Wireless transmission is made via Bluetooth or WLAN technology. The Wireless Bolt can connect devices using serial, CAN or Ethernet.

EXAMPLE USE CASE



The Wireless Bolt is typically used for configuration purposes. For example, you can bring your own device (BYOD) such as a tablet to a machine and use it as an HMI. Another typical use case is connecting a machine to a cloud service.

Availability

Three versions for:

- Ethernet
- Serial (RS-232/485) and Ethernet
- CAN and Ethernet

All three versions can use:

- WLAN 2.4 GHz/5 GHz (Access point or client)
- Bluetooth (Access point or client)
- Bluetooth Low Energy (central or peripheral)

3 YEAR GUARANTEE

HMS provides a full 3 year product guarantee

Serial, CAN or industrial Ethernet

On the wired side, the Anybus Wireless Bolt can communicate with devices on serial (RS-232/485), CAN or Ethernet. Regardless of communication method, you have the same connector (2x9p Plug Connector) for both power and communication.

Ideal for BYOD

Connect a Wireless Bolt to your machine and access the internal web pages via a laptop, tablet or smartphone. BYOD (Bring Your Own Device) means that you no longer need an expensive HMI.

Features and benefits

- Range up to 100 meters.
- Rugged design with IP67-classed housing.
- Mounted by making an M50 hole (50.5 mm) in the host cabinet/machine. The bottom part of the Bolt goes inside the cabinet and the top part is located on the outside.
- Unique method to handle interference disturbances without consequences to the Bluetooth conformity or the interoperability with other devices.
- All-in-one package: Connector, communication hardware and integrated antenna in the same unit.
- Uses the ARM mbed 3.0 IoT Device Platform.
- Simultaneous operation of Bluetooth and WLAN allowing for bridging between the two.

Which wireless standard?

Use WLAN (aka WiFi) if you need:

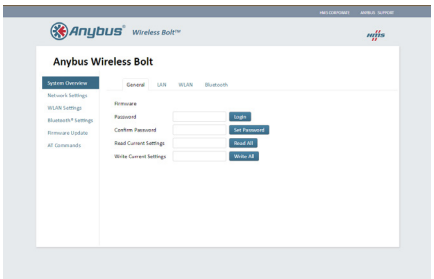
- High data throughput.
- Wireless access point.

Use Bluetooth if you need:

- Reliable and noise immune wireless link (Bluetooth switches between different frequencies).
- To build IoT applications with connectivity to all major operating systems.
- Low energy consumption (Bluetooth Low Energy).

TECHNICAL SPECIFICATIONS			
Type of wired interface	Ethernet	Serial RS-232/485 and Ethernet	CAN and Ethernet
Order code	AWB2000	AWB2010	AWB2020
Range	100 meters		
Antenna	Built-in		
Operating temperature	-40 to +65 °C		
Storage temperature	-40 to +85 °C		
Weight	81 g		
Housing	Plastic (PBT glass-reinforced/PC-ABS)		
IP class	IP67 for top (outside the host), IP21 for bottom (inside the host).		
Dimensions	Diameter: 70 mm. Height: 70 mm (95 mm including connector). Outside height: 41 mm.		
Mounting	M50 screw and nut (50.5 mm hole needed).		
Connector	Included plug connector (2x9p; 3.5mm, Phoenix DFMC 1.5/9-ST-3.5, push-in spring connection).		
Power	9-30 VDC (-5% +20%), Cranking 12V (ISO 7637-2:2011 pulse 4). Reverse polarity protection. (Consumption: 0.7W idle, 1.7W max.)		
Configuration	Three different methods: • Accessing the built-in web pages in the product • Sending AT commands • Using Easy Config modes		
Vibration compatibility:	Sinosodial vibration test according to IEC 60068-2-6:2007 and with extra severities; Number of axes: 3 mutually perpendicular (X:Y:Z), Duration: 10 sweep cycles in each axes, Velocity: 1 oct/min, Mode: in operation, Frequency: 5-500 Hz, Displacement ±3.5 mm, Acceleration: 2g. Shock test according to IEC 60068-2-27:2008 and with extra severities; Wave shape: half sine, Number of shocks: ±3 in each axes, Mode: In operation, Axes ± X,Y,Z, Acceleration: 30 m/s^2, Duration: 11 ms.		
Humidity compatibility:	EN 600068-2-78: Damp heat, +40°C, 93% humidity for 4 days.		
COMMUNICATION WITH HOST DEVICE			
Serial	-	Isolated RS-232/485 (max baud rate 1Mbps)	-
CAN	-	-	Isolated CAN (max baud rate 1Mbps)
Digital input	Supported by all three variants (max 3 m signal cable). Free configurable, for example to control roaming between access points.		
Ethernet	10/100BASE-T with automatic MDI/MDIX auto cross-over detection. Supported Ethernet protocols: IP, TCP, UDP, HTTP, LLDP, ARP, DHCP Client/Server, DNS support. PROFINET IO, EtherNet/IP, Modbus-TCP. (SNMP user management and access control in pending release.)		
WIRELESS STANDARDS (SUPPORTED BY ALL THREE VARIANTS)			
WLAN	**Wireless standards:** WLAN 802.11 a, b, g, d, e, i, h (n in pending release) **Operation modes:** Access point or Client **WiFi channels**: 2.4 GHz, 1-11, 5 GHz: 36-48 (U-NII Band 1,2,2e and 3) **RF output power**: 16 dBm **Max number of slaves for access point:** 7 **Power consumption:** 54mA@24VDC **Net data throughput**: >20 Mbps **Security:** WEP 64/128, WPA, WPA-PSK and WPA2, TKIP and AES/CCMP, LEAP, PEAP.		
Bluetooth	**Wireless standards (profiles):** PANU & NAP **Operation modes:** Access point or Client **RF output power:** 10 dBm **Max number of slaves for access point:** 7 **Power consumption:** 36 mA@24VDC **Net data throughput**: ~1 Mbps **Bluetooth version support:** v4.0 **Security:** Authentication & Authorization, Encryption & Data Protection, Privacy & Confidentiality, NIST Compliant, FIPS Approved		
Bluetooth Low Energy (Pending release)	**Wireless standards (profiles):** GATT **Operation modes:** Central or Peripheral **RF output power:** 7 dBm **Max number of slaves for Central**: 10 **Power consumption:** 36 mA@24VDC **Net data throughput**: ~200 kbps **Bluetooth version support:** v4.0 **Security:** AES-CCM cryptography		
CERTIFICATIONS			
Europe	Radio Equipment Directive (RED) 2014/53/EU		
U.S.	FCC 47 CFR part 15, subpart B		
Canada	ICES-003		
Japan	MIC (pending, pre-certified radio module)		
Taiwan	NCC (pending, pre-certified radio module)		
South Korea (pending)	KCC (pending, pre-certified radio module)		
More certifications available on request			

Mounting
The Anybus Wireless Bolt is mounted into a 50.5 mm (M50) hole in the host device. The top ("helmet") goes on the outside and provides an IP67 exterior. The bottom is located inside the machine or cabinet (IP21).



Configuration
You can configure the Anybus Wireless Bolt by accessing the built-in web pages in the product. You can also send AT commands or use Easy Config modes.

Order a Starter Kit!
Includes: Two Wireless Bolts, Power Supply (world), cabling, Quick Start Guide.
Part number: AWB2300