Anybus® BY HMS NETWORKS

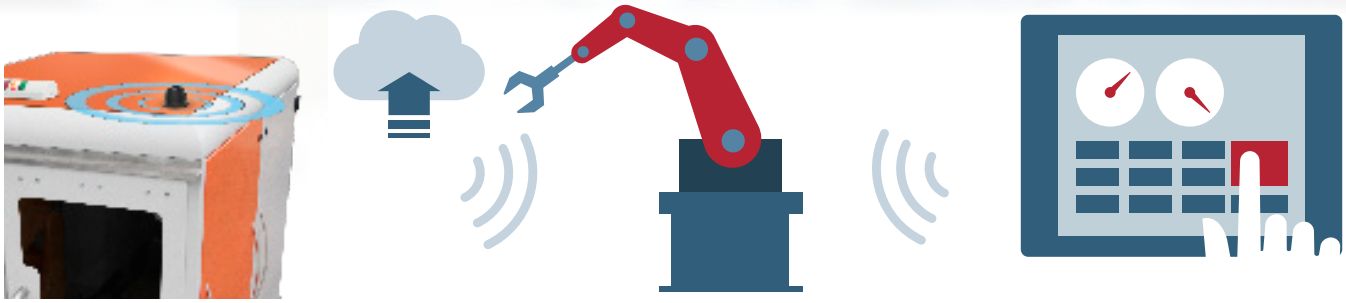
Wireless Bolt™

RG2ix — Spécialiste IoT & M2M

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

Wireless transmission is made via Bluetooth or Wireless LAN technology. The wired connection is made using 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

Anybus Wireless Bolt Ethernet.
Bluetooth access point or client.
Wireless LAN 2.4/5 GHz access point or client.

AWB2000
Black top, 18-pole push spring connector

AWB2001
"Sunbolt" White top 18-pole push spring connector

AWB2030
Black top, RJ45 connector and PoE (Power over Ethernet)

AWB2031
"Sunbolt" White top RJ45 connector and PoE (Power over Ethernet)

Accessories

024703
Bolt cable kit. Bolt connector with Ethernet cable (RJ45 male) and power supply (World) with cable.
Both cables are 150cm. (for AWB2000/ AWB2001 only)

024704
Adapter cable, Bolt 18-pin to female Ethernet RJ45 , 20cm. (for AWB2000/ AWB2001 only)

AWB4005
PoE Injector, 100-240VAC

AWB4006
PoE Injector, 12-57VDC

3 YEAR GUARANTEE — HMS provides a full 3 year product guarantee

Use your laptop, phone or tablet instead of an HMI

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

Multipoint or point-to-point

Anybus Wireless Bolt is often used as an access point for several Wireless LAN/Bluetooth nodes, but it can also be used as an Ethernet cable replacement (point-to-point communication, or multi-point communication with up to 8 nodes).

Features and benefits

- Range up to 100 meters.
- Rugged design with IP67-classed housing.
- Easy configuration via built-in web configuration pages.
- 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.
- All-in-one package: Connector, communication hardware and integrated antenna in the same unit.
- Connects to your machine via Ethernet.
- Simultaneous operation of Bluetooth and Wireless LAN allowing for bridging between the two.
- PoE (Power over Ethernet) for RJ45-version.
- Available with white top "Sunbolt" enabling 30% higher surrounding temperature in °C compared to black in direct sunlight.
- Operation with Wirelesss LAN, Bluetooth classic and Bluetooth Low Energy.

Which wireless standard?

Use WLAN (aka WiFi) if:

- Interaction with other devices is needed, e.g. Bolt/AWB II to tablet/PC/ phone or WLAN infrastructure.
- WLAN channel frequency planning is possible.
- Higher data throughput speed is necessary.
- Larger file transfers are expected.

Use Bluetooth if:

- The wireless link has Anybus products in both ends, e.g. Bolt to Bolt, AWB II to AWB II or Bolt to AWB II.
- A robust and reliable link without interruptions is important e.g. in an industrial environment with lots of interference, and maybe has been proven not to work well using WLAN.
- A Profinet or Ethernet/IP I/O cycle time of 64ms or higher is acceptable.
- The data throughput speed need is on the lower side.

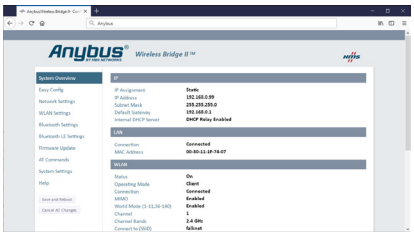
HMS

Patent pending.

TECHNICAL SPECIFICATIONS

Type of wired interface	Ethernet			
Order code	AWB2000	AWB2001	AWB2030	AWB2031
Color	Black	White top and black base	Black	White top and black base
Connector	Included plug connector (2x9p; 3.5mm, Phoenix DFMC 1.5/9-ST-3.5, push-in spring connection).		RJ45 Ethernet/PoE, 3 Pole screw connector for power	
Range	100 meters free line of sight			
Antenna	One built-in antenna 2.4/5GHz			
Operating temperature	Shadow black and white: -40 to +65 °C, Direct sunlight: Black -40 to +45 °C, White -40 to +65 °C (Storage temperature: -40 to +85 °C)			
Weight	81 g		84 g	
Housing material	Top: Valox 357X(f1) PBT/PC. Suitable for outdoor use with respect to exposure to ultraviolet light, water exposure and immersion in accordance with UL 746C. Bottom: Celanex: XFR 6840 GF15. PBT glass reinforced plastic.			
IP protection class	IP67 and UL NEMA 4X for top (outside the host), IP21 for bottom (inside the host).			
Dimensions	Diameter: 68 mm. Height: 75 mm (95 mm including connector). Outside height: 41 mm.		Diameter: 68 mm. Height: 75 mm without PS-connector, 84 mm incl. PS-connector. Outside height: 41 mm.	
Mounting	M50 screw and nut (50.5 mm hole needed).			
Power	9-30 VDC (-5% +20%), Cranking 12V (ISO 7637-2:2011 pulse 4). Reverse polarity protection. (Consumption: 0.7W idle, 1.7W max.)		19-36 VDC, PoE (Power over Ethernet) DTE Type1 according to IEEE 802.3af. (Consumption: 0.7W idle, 1.7W max.)	
Configuration	Three different methods: 1. Accessing the built-in web pages in the product 2. Sending AT-commands via Telnet/Raw TCP 3. 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: 30g , Duration: 11 ms.			
Humidity compatibility:	EN 600068-2-78: Damp heat, +40°C, 93% humidity for 4 days.			
COMMUNICATION WITH HOST DEVICE				
Digital input	Usage: To control roaming between Bluetooth access points. (max 3 m signal cable).		None	
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.			
WIRELESS STANDARDS				
Wireless LAN	**Wireless standards:** WLAN 802.11 a, b, g, n, d, r (fast roaming). **Operation modes:** Access point or Client **WiFi channels**: 2.4 GHz, channel 1-11 + 12-13 depending on regulatory domain scan. 5 GHz Client: 100-116 + 132-140 and 120-128 depending on regulatory domain scan. (U-NII-1, U-NII-2, U-NII-2e). 5 GHz Access Point: 36-48 (U-NII-1) Note regarding 5GHz: Limited coverage in specific directions. **RF output power**: 13.75 dBm **Max number of slaves for access point:** 7 **Power consumption:** 54mA@24VDC **Net data throughput**: 20 Mbps. Link speed: max 65 Mbps (802.11n SISO) **Security:** WEP 64/128, WPA, WPA-PSK and WPA2, TKIP and AES/CCMP, LEAP, PEAP including MS-CHAP.			
Classic Bluetooth	**Wireless standards (profiles):** PANU & NAP **Operation modes:** Access point or Client **RF output power:** 9.75 dBm **Max number of slaves for access point:** 7 **Power consumption:** 36 mA@24VDC **Net data throughput**: ~1 Mbps **Bluetooth version support:** Classic Bluetooth v2.1 **Security:** Authentication & Authorization, Encryption & Data Protection, Privacy & Confidentiality, NIST Compliant, FIPS Approved			
Bluetooth Low Energy	**Wireless standards (profiles):** GATT **Operation modes:** Central or Peripheral (pending) **RF output power:** 5.75 dBm **Max number of simultaneous Peripheral connections:** 7 Max number of Peripherals is virtually unlimited by multiplexing **Power consumption:** 36 mA@24VDC **Net data throughput**: ~200 kbps **Bluetooth version support:** Bluetooth 4.0 dual-mode **Security:** AES-CCM cryptography			
CERTIFICATIONS				
Europe	ATEX Category 3, zone 2 according to EN60079-15, product marking: EX II 3 G nA IIC T4 Gc. CE, 2014/53/EU Radio Equipment Directive (RED)		ATEX Category 3, zone 2 according to EN60079-15, product marking: EX II 3 G nA IIC T4 Gc. CE, 2014/53/EU Radio Equipment Directive (RED)	
U.S.	FCC 47 CFR part 15, subpart B. UL: Ind. Cont. Eq. also Listed Ind. Cont. Eq. for Haz. Loc. CL1, DIV 2, GP A,B,C,D, T4. UL file: E203225		FCC 47 CFR part 15, subpart B. UL: Ind. Cont. Eq. also Listed Ind. Cont. Eq. for Haz. Loc. CL1, DIV 2, GP A,B,C,D, T4. UL file: E203225	
Canada	ICES-003		ICES-003	
Japan	MIC		MIC	
Other countries	Argentina, Australia, Brazil, Colombia, Turkey, Malaysia, India **Pending:** Chile		Turkey, Brazil, India	

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.

Bolt Cable Kit
Bolt connector with Ethernet cable (RJ45 male) and power supply (World) with cable.
Both cables are 150cm.
Order code: 024703
(AWB2000 only)

Order a Starter Kit!
Bolt 18-pin: 2 x Wireless Bolts 18-pin (AWB2000), 2 x Power Supply (world), cabling, Quick Start Guide. Order code: AWB2300
Bolt RJ45: 2 x Wireless Bolts RJ45 (AWB2030), 2 x Power Supply (world), power cables, Quick Start Guide. Order code: AWB2330