BeanGateway 2.4GHz Outdoor

Wireless IIOT Sensors Coordinator Outdoor-Version | Modbus Protocol

BeanAir — WIRELESS IIOT SENSORS

2.4 GHz

PRODUCT VIDEO

USER GUIDE

MODBUS UM

MECHANICAL DRAWING

STEP FILE

2year Warranty

MADE IN GERMANY

CE FC 001A-08148

142 mm

55 mm

202 mm

MAIN FEATURES

- Waterproof (IP67) & Robust Aluminum Enclosure

- Wireless technology IEEE 802.15.4

- Auto-Reboot : Periodic reboot at a specified time interval

- Ethernet/LAN interface with a server

- Advanced UPS (Uninterruptible power supply) with integrated rechargeable Lithium battery

- ModBus TCP, ModBus RS485 communication protocol

HOW DOES IT WORK ?

BeanScape

BeanAir
Rethinking Sensing Technology

BeanGateway
2.4GHz Outdoor Version

Wireless IIOT Sensors Cloud
(IEEE 802.15.4)

BeanAir
WIRELESS IIOT SENSORS
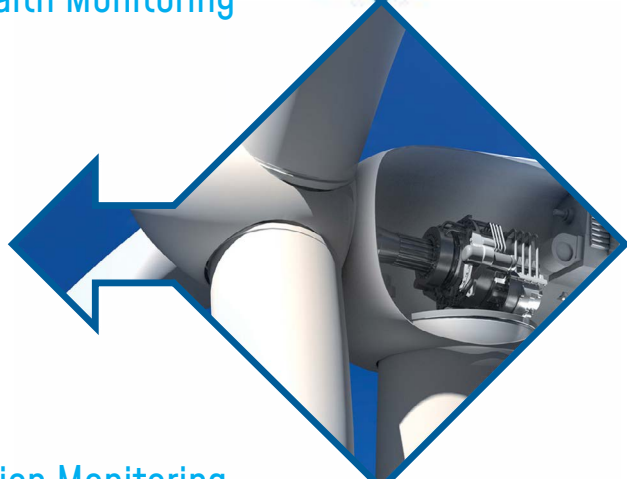
IIoT

APPLICATIONS

BeanGateway OUTDOOR

2.4 GHz
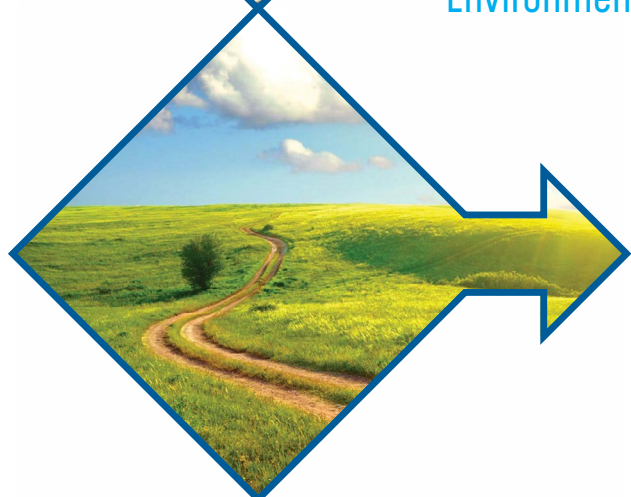
Test and Measurement

Structural Health Monitoring

Condition Monitoring

Ground Vibration Monitoring

Environmental Monitoring

Land Surveying

BeanAir
WIRELESS IIOT SENSORS

IoT

BeanGateway

2.4
GHz

A MULTI-PROTOCOL WIRELESS IIOT SENSORS COORDINATOR

The BeanGateway® 2.4GHz Modbus is used to build and manage Beanair® wireless IIOT sensors. It can manage queues for every network element (BeanDevice® 2.4GHz). As a gateway, it controls the external access to the network through a highly secured authentication procedure. It supports the conversion of data exchanged, compression and IP connectivity with the network thereby reducing the intelligence required in these platforms, maintenance and therefore the associated cost. The BeanGateway® 2.4GHz Modbus is also equipped with various communication interfaces with the customers IT infrastructure (Modbus over RS485, Modbus TCP, Ethernet - TCP / IP / UDP / DHCP / DNS)

BeanAir®
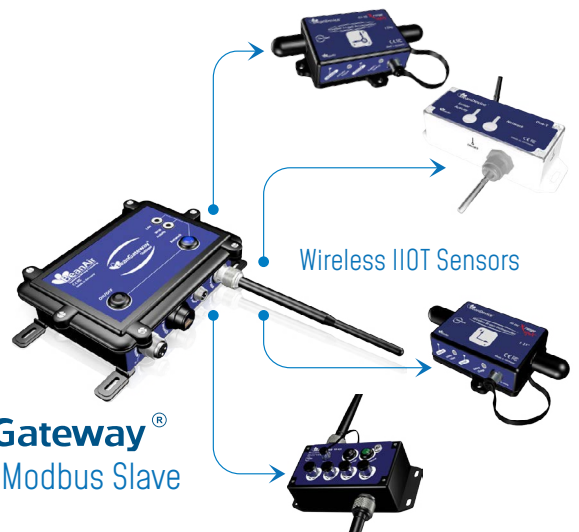Rethinking Sensing Technology

PLC
Modbus Master

Modbus ASCII/RTU (RS232)

Modbus ASCII/RTU (RS485)

Modbus TCP (Ethernet)

Wireless IIOT Sensors

Modbus
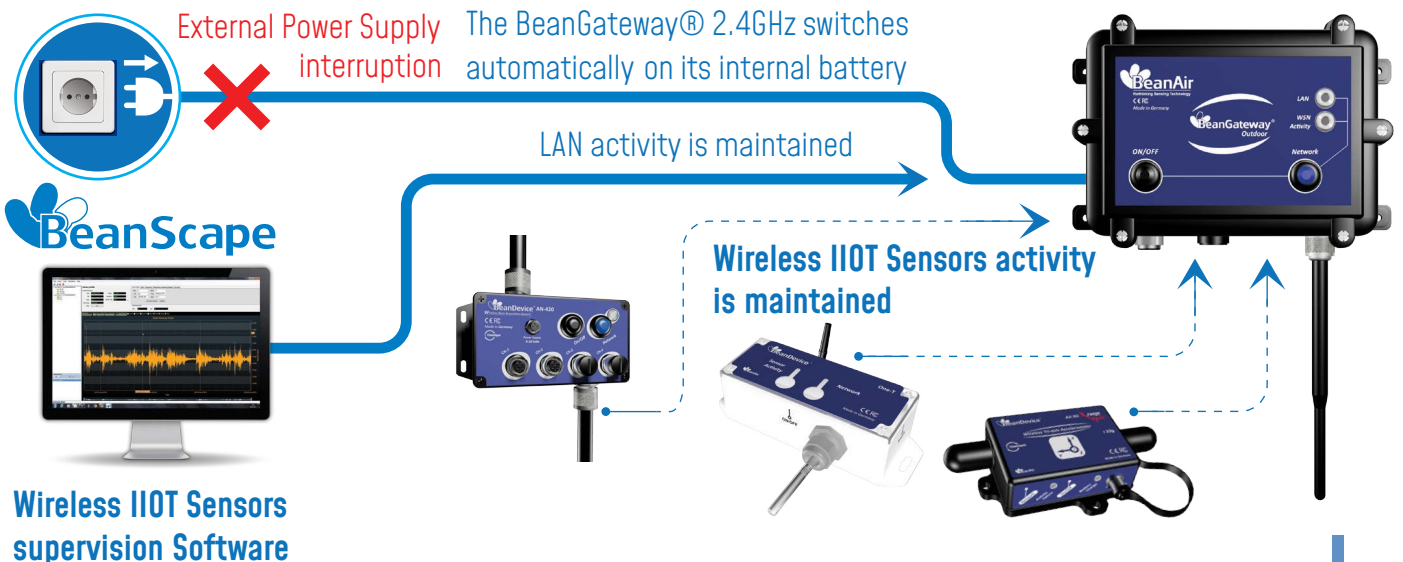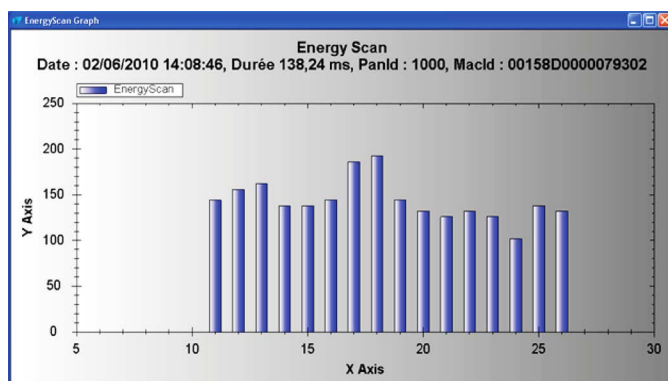
BeanGateway®
2.4GHz Modbus Slave

ADVANCED UNINTERRUPTIBLE POWER SUPPLY (UPS)

The BeanGateway® 2.4GHz Modbus operates with an external power supply (DC 8-28V). An integrated rechargeable battery with a capacity of 950mAh is used as an UPS battery (uninterruptible power supply). The internal battery provides instantaneous protection from external power supply interruptions, the wireless IIOT sensors activity & Ethernet LAN activity are maintained during this time (3h00 to 3h30 approximately).

External Power Supply interruption

The BeanGateway® 2.4GHz switches automatically on its internal battery

LAN activity is maintained

BeanScape

Wireless IIOT Sensors activity is maintained

Wireless IIOT Sensors supervision Software

EMBEDDED WIRELESS IIOT SENSORS DIAGNOSTIC TOOL

The BeanGateway® 2.4GHz Modbus provides a wireless IIOT sensors diagnostic tool useful for resolving some common networking troubleshooting :
• Energy Scan for choosing the more appropriate RF Channel
• BeanDevice® 2.4GHz PER (Packet Error Rate) calculation
• LQI (Link Quality Indicator) between the BeanGateway® 2.4GHz Modbus and the BeanDevice® 2.4GHz
The Energy Scan allows the user to know the network quality on each Radio channel. This operation allows the user to choose the appropriate RF channel on a site where the wireless IIOT sensors is deployed.

PRODUCT REFERENCE	
BGTW-2.4GHZ-ETH-MODIP-OUT	BeanGateway Ethernet & Modbus TCP/IP
BGTW-2.4GHZ-ETH-MODRS485-OUT	BeanGateway Ethernet, ModBus TCP/IP & Modbus ASCII/RTU over RS485
WIRELESS IIOT SENSORS COORDINATOR	
Wireless Technology	Ultra-Power and license-free 2.4Ghz radio technology (IEEE 802.15.4E)
WSN Topology	Peer-to-peer/ Star
Raw data rate	250 Kbits/s
RF Characteristics	ISM 2.4GHz – 16 Channels
RF Transmit power	+18 dBm
Receiver sensitivity	-104 dBm
Maximum Radio Range	1 km (Line of Sight) , 70-150m (Non Line of Sight)
WSN Diagnostic tool	• Energy Scan for choosing a suitable RF Channel • BeanDevice® PER (Packet Error Rate) calculation • LQI (Link Quality Indicator) between the BeanGateway® and the BeanDevice® • RF channels Blacklist

TECHNICAL SPECIFICATIONS

ETHERNET/LAN NETWORK	
Network/Transport Protocol	Client TCP/IP, UDP, DNS, DHCP
Data Link Protocol	Ethernet / Fast-Ethernet with auto-uplink (MDI/MDI-X auto) - IEEE 802.3x
IP Addressing	Dynamic (DHCP) or static
IP configuration	LAN parameters (DNS, DHCP, Keep Alive...) are configurable from the BeanScape® (UDP/Ethernet Interface).
MODBUS SERIAL	
ModBus over RS485	Slave, RTU/ASCII, Baudrate: Between 4800 bauds to 115 200 bauds Logic selectable 120 Ohm termination

POWER SUPPLY	
Power Consumption	250 mA to 300 mA during wireless RX/TX and Ethernet activated
External power supply	8-28 VDC , integrated Lithium-Ion battery charger with high-precision battery monitoring
Integrated Lithium-Ion Battery with UPS function	High density Lithium-Ion rechargeable battery with a capacity of 2.2Ah with polyswitch protection In case of external power supply failure, the BeanGateway® can switch on the internal battery.

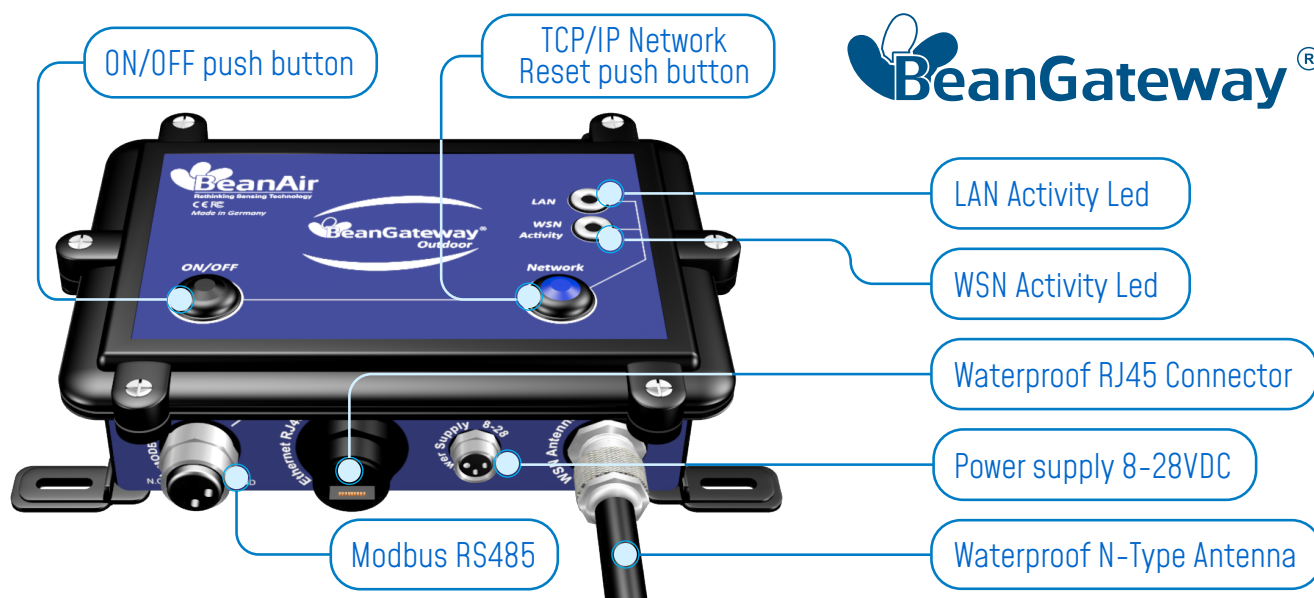| PHYSICAL & ENVIRONMENTAL	
Dimensions (L x l x h)	202 mm x142 mm x 55 mm
Enclosure/Finish	Aluminum alloy ADC12 black finish · Wall mounting holes (outside the sealing area)
IP Ratings	IP67
Weight	1220g
Connectors	· Power supply connector: M8-3P female socket, Ratings P67 Contact brass with gold plated · Ethernet connector : RJ45 Female, Ratings IP67, Contact copper alloy with gold plated · Antenna connector: N-Type female, Ratings IP67 · ON/OFF push button : Latching push-button, Ratings IP67 · Network context push button: momentary push-button, Ratings IP67
Operating temperature	-20 °C to +65 °C during battery discharge 0 to 45°C during battery charge
Norms and Radio Certifications	· CE Labelling Directive R&TTE (Radio) ETSI EN 300 328 · FCC (North America) · ARIB STD-T66 Ver 3.6 · ROHS - Directive 2002/95/EC

TECHNICAL SPECIFICATIONS

INCLUDED ACCESSORIES	
2.4 GHz Antenna	• V.S.W.R : 1.5 :1 • Connector : N-Type (Watertight)
Ethernet Cable	• RJ45 Male waterproof connector (casing side only) • Cable length: 3 meters
M12-4Pins Plug	Only for BGTW-ETH-MODRS485-OUT version
Wall mounting	Wall mounting kit, 4 pcs
Wall plug-in power supply	Wall plug-in, Switchmode power Supply 12V @ 1,25A Product reference for re-order: M8-PWR-12V
Connectors cap	M8-3P cap

OPTIONAL ACCESSORIES	
M8 extension cable for external power supply	Molded cable with M8-3pins male plug Material: PVC with shield protection IP Rating : IP67 | Nema 6 Cable length: 2 meters , Ref: CBL-M8-2M Cable length : 5 meters, Ref: CBL-M8-5M Cable length: 10 meters, Ref: CBL-M8-10M
Antenna cable	N-Type cable (Male/Male), Cable type: RF-5/H155 Cable length: 1 meter, Ref: CBL-ANT-1M Cable length: 2 meters, Ref: CBL-ANT-2M Cable length: 3 meters, Ref: CBL-ANT-3M Cable length: 5 meters, Ref: CBL-ANT-5M Cable length: 10 meters, Ref: CBL-ANT-10M
High Gain antenna option	High Gain Omnidirectional antenna Frequency range 2400-2500MHz VSWR < 1.4, Impedance 50 Ohm, Polarization Vertical Vertical plane 24°(7dBi Gain version) 16°(7dBi Gain version) 6°(12dBi Gain version), Horizontal plane 360° Connector N female, Wind load (170km/h) 7.3N Included: N-Type cable (Male/Male), length: 1 meter Gain: 7dBi, Dimensions 360mm x 23mm, Weight 0.44 kg Ref: HG-OMNI-OUT-7DBI Gain: 9dBi , Dimensions 540x23 mm, Weight 0.61 kg Ref: HG-OMNI-OUT-9DBI Gain: 12dBi , Dimensions: 1125mm x 19 mm, Weight 1.06 kg Ref: HG-OMNI-OUT-12DBI

BeanAir
WIRELESS IIOT SENSORS

IIOT

BeanGateway OUTDOOR

2.4 GHz

OVERVIEW BEANGATEWAY® 2.4GHZ OUTDOOR

ON/OFF push button

TCP/IP Network
Reset push button

BeanGateway ®

LAN Activity Led

WSN Activity Led

Waterproof RJ45 Connector

Power supply 8-28VDC

Modbus RS485

Waterproof N-Type Antenna
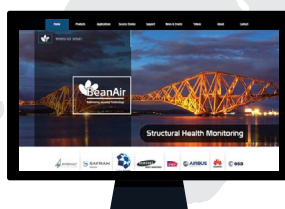
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