**VolleyBoast**

# VoBo XB

## Universal LoRaWAN® Bridge Endpoint for General Purpose and Hazardous Area Use



The VoBo XB™ is a second generation, industrial grade, multiple input, universal LoRaWAN® bridge from Volley Boast. It converts wired process instrumentation into LoRaWAN® enabled instrumentation. It's range of analog, discrete, and serial inputs enable customers to enhance their data collection and automation efforts using their preferred, qualified, and legacy sensors. The VoBo XB is battery operated and can supply power to connected sensors from its analog terminals. Typical battery life is 3+ years and is user replaceable. The VoBo XB can be configured locally through a serial connection or over the air with downlinks. Its rugged enclosure and internal antenna allow installation almost anywhere, the VoBo XB is available for general purpose or with hazardous area certification. The LoRa® radio technology and LoRaWAN® protocol provide dependable long-range communication and economical scaling.

With the addition of optional features VoBoSync*, and/or VoBoAnalytics, the VoBo XB is ideal for enhancing your Industry 4.0 data collection, edge analytics, and insights. *Patent Pending

## Applications

- Temperature, Pressure, Flow
- Tank Level
- Wellhead Production
- Heat Trace Controller
- Motor Condition
- Emissions
- Weather Station
- Water Quality
- Compliance
- Safety

## Features

- 3 Analog Inputs
- Wired HART ® on Analog Inputs  *Optional*
- 3 Digital Inputs
- 1 Wake-up Digital Interrupt Input
- RS485 Modbus RTU Channel
- Multiple Modbus Device Read/Write *Optional*
- VoBoSync* *Optional*
- VoBoAnalytics *Optional*
- Data Logging
- Battery Powered
- LoRaWAN® Compliant
- US915, EU868, and Other Channel Plans
- General Purpose and Hazardous Area Models
- IP66 / NEMA 4X

**LoRa Alliance** Member

# Specifications

## Analog Input

| | | |
|---|---|---|
| Analog Inputs | | 3 Inputs* |
| Analog Input Types | | 2, 3, or 4 wire<br>4-20mA, 0-5V, 0-10V<br>HART®/4-20mA<br>0-5mA NAMUR proximity |
| Analog | 4-20mA | 250 ohm |
| Input | 0-5V | 500 Kohm |
| Impedance | 0-10V | 375 Kohm |
| | NAMUR | 1000 ohm |
| Measurement Resolution | | 16 bit |
| Measurement Units | | Engineering units<br>or ADC counts |

*Per channel, type selectable*

## Digital Input

| | |
|---|---|
| Digital Inputs | 3 Inputs* |
| Digital Input Types | Dry contact, voltage<br>PNP, NPN proximity |
| Digital Interrupt (WKUP) | 1 input |
| Digital Interrupt Type | Dry contact |

*Per channel, type selectable*

## Serial Input/Output

| | |
|---|---|
| Serial Input | 1 Input |
| Serial Interface | RS485 or RS232 |
| Serial Protocol | Modbus RTU |
| Number of Slave Devices | 1 Standard<br>>1 Optional* |
| Serial I/O Port** | RS-232 |

*Daisy chained slave devices*
**For configuration, monitoring, and data recovery*

## Functionality

| | |
|---|---|
| LoRaWAN® Class | A |
| Modbus RTU Write Capability | Yes |
| Data Logging | Sensor data, events,<br>configuration changes |
| Data Logging Capacity | ~5000 sensor payloads |
| Logged Data Access | Serial port<br>downlink/uplink |
| Operation Modes | Online* / Offline** |
| Sample Cycle Time | 1 to 2880 minutes |
| Wakeup by External Magnet | Yes |
| Heartbeat Cycle | 24 hours |
| Heartbeat Data | Battery voltage, signal<br>strength, node status |
| VoBoSync (pat pending) | Optional |
| VoBo Analytics | Optional |

*Transmits on LoRaWAN® plus local data logging*
**Local data logging only*

## Radio

| | |
|---|---|
| Protocol | LoRaWAN® 1.0.4 |
| Antenna | Internal, 1.4 dBi |
| Range | Up to 6 miles LOS |
| Frequency | US915, EU868, and other<br>channel plans available |
| Data Encryption | AES 128 |
| Conformance | FCC ID: AU792U13A16857<br>IC:125A-0054 |
| Compatibility | All LoRaWAN® compliant<br>devices |

## Power

| | |
|---|---|
| Battery* | LSH20 (D size) |
| Battery Type | Li-SOCl$_2$ |
| Battery Access | User replaceable |
| Battery Voltage | 3.6 V nominal |
| Battery Capacity | 13.0 Ah nominal |
| Power Supply Output V+ | 5 to 24 Vdc |
| Maximum Power Output** | 750mW |

*As delivered from Volley Boast*
**With the Saft LSH20 battery*

## Physical

| | |
|---|---|
| Enclosure Material | GRP |
| Enclosure Dimensions* | 8.3" x 4.69" x 3.5" |
| Cord Grip Holes** | 3 holes, 0.875" diameter |
| Cord Grip Capacity | 0.18" to 0.4" diameter |
| Input Terminals | 24 to 12 AWG |
| Weight | 2.75 lbs |
| Cover Fasteners | Captive, 316 stainless |
| Direct Mount Spacing | 8.03 x 3.23" |

*Excluding cord grips*
**Will accommodate a 1/2" conduit fitting*

## Environmental

| | |
|---|---|
| Temperature | -40 to 80 °C |
| ATEX / IECEx<br>Certification* | ⟨Ex⟩ II 3G 3D ec nC T4<br>Ex ec nC IIC IIIA T4 Gc |
| USA & Canada<br>Certification* | Class I,Division 2,Groups A-D, T4<br>Class I,Division 2,Groups F,G,T135°C<br>Class I Zone 2 EX ec nC IIC IIIA T4 Gc |
| Ingress Rating | IP66 / NEMA 4X |
| Complies With | UL 62368-1, CSA C22.2 No. 62368-1<br>CE European Community Directives |

*Model with Hazardous Area Certification*

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