

# VoBo GP-1 VoBo HL-1

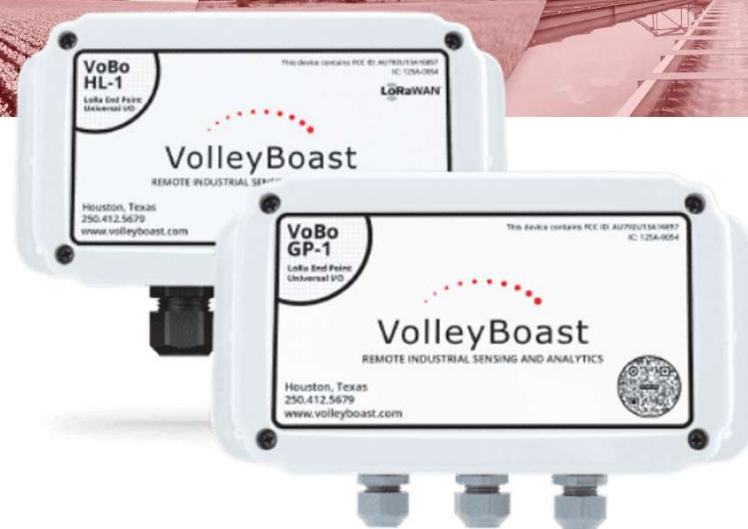
## Autonomous LoRaWAN® Endpoints for General Purpose and Hazardous Areas

The VoBo GP-1™ and VoBo HL-1™ are an industrial grade, multiple input, universal LoRaWAN® bridge. They convert wired process instruments into LoRaWAN® enabled instrumentation. It's wide range of analog and digital inputs enable customers to enhance their data collection and automation efforts using favored or legacy sensors. The VoBo GP-1 and HL-1 are battery operated and can supply power to connected sensors from its analog terminals. Typical battery life is 3+ years and is user replaceable. It can be configured locally through a serial connection or over the air with downlinks. Its rugged enclosure and internal antenna permit it to be installed almost anywhere, the HL-1 is certified for Class 1 Division 2 hazardous areas. 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 is ideal for enhancing your Industry 4.0 data collection, edge analytics, and insights. \*Patent Pending

## Applications

- Temperature, pressure, flow monitoring
- Tank level monitoring
- Wellhead production monitoring
- Heat Trace monitoring
- Motor Condition monitoring
- Weather station monitoring
- Water quality monitoring



## Features

- 3 Analog Inputs
- 3 Digital Inputs
- 1 Wake Up Digital Input
- RS485 Modbus RTU Input
- Multiple Modbus RTU Read/Write
- Optional*
- VoBoSync\* *Optional*
- VoBoAnalytics *Optional*
- Data Logging
- Battery Powered
- LoRaWAN® Compliant
- Supports US915 and Other Channel Plans
- Class 1, Division 2 (HL-1)
- IP66 / NEMA 4X

# Specifications

## Analog Input

Analog Inputs	3 Inputs*
Analog Input Types	2, 3, and 4 wire 4-20mA, 0-5V, 0-10V
Analog Input Impedance	
4-20mA	250 ohm
0-5V	50 Kohm
0-10V	37.5 Kohm
Measurement Resolution	12 bit
Measurement Units	Engineering units or ADC counts
Measurement Numerical Format	FP32

\* Per channel type selectable

## Digital Input

Digital Inputs	3 Inputs*
Digital Input Types	voltage or dry contact
RS485 Port	1
RS485 Read/Write Addresses	2 or more optional
RS485 Protocol	Modbus RTU
Modbus Payload Capacity	41 registers (16 bit) per address
Digital Interrupt (WKUP)	1 input
Digital Interrupt Type	Dry contact
Configuration Port	RS-232

\* Per channel type selectable

## Functionality

LoRaWAN® Class	A
Modbus RTU Write Capability	Yes
Data Logging	Sensor data, events, configuration changes
Data Logging Capacity	~5000 sensor payloads
Data Logging Access	Serial or 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 strength, node status
VoBoSync (pat pending)	Optional
VoBo Analytics	Optional

\* Transmits on LoRaWAN® plus local data logging

\*\* Local data logging only

\*\*\* On demand when digital interrupt (WKUP) is triggered

## Mounting

Direct Mount Spacing	8.03 x 3.23"
Optional Mounts*	Pole mount

\* Contact Volley Boast for available mounts

## Power

Battery Size	LSH20 (D size)
Battery Type	Li-SOCl <sub>2</sub>
Battery Access	User replaceable
Battery Voltage	3.6 V nominal
Battery Capacity	13.0 Ah nominal
Voltage Supply to Terminal	5 to 24 Vdc
Power Output	750mW maximum
Sleep Current	40 uA

## Radio

Protocol	LoRaWAN® 1.0.4
Antenna	Internal, 1.4 dBi
Range	Up to 6 miles LOS
Frequency	US 915 and other Channel Plans available
Data Encryption	AES 128
FCC/IC Conformance	FCC ID: AU792U13A16857 IC:125A-0054
Compatibility	Backward compatible with LoRaWAN® compliant devices

## Environmental

Temperature	-35 to 80 °C
Exposure Class	IP66 / NEMA 4X
NRTL Listed	UL-62368-1, Third Edition
E115256	CSA C22.2 No. 62368-1, Third Edition Annex Y
HL-1 Certified Use	ANSI/ISA 12.12.01 and CAN/CSA C22.2 No.213 Class I, Division 2, Groups C,D T4 Class II, Division 2, Groups F,G T135 °C Class III, Division 1

## Physical

Enclosure Material	Polycarbonate
Enclosure Dimensions*	7.6" x 4.6" x 3.1" approx.
Cord Grip Holes	
GP-1	3 holes, 0.625" diameter
HL-1**	2 holes, 0.875" diameter
Cord Grip Capacity	
GP-1	0.105 to 0.315" diameter
HL-1	0.095 to 0.290" diameter
Input Terminals	24 to 12 AWG
Weight	1.5 lbs

\* Excluding cord grips

\*\* Will accommodate a 1/2" conduit fitting

