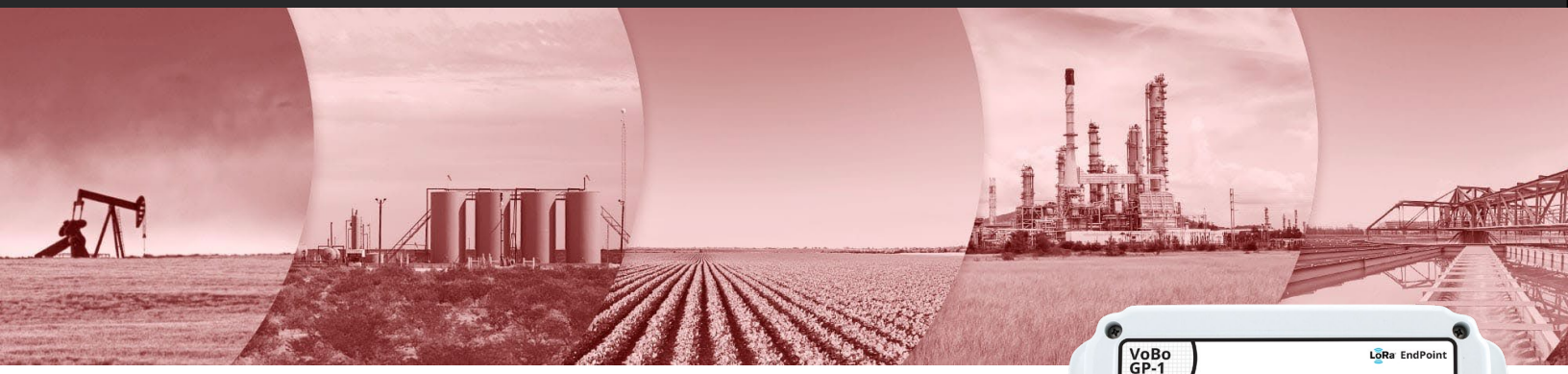
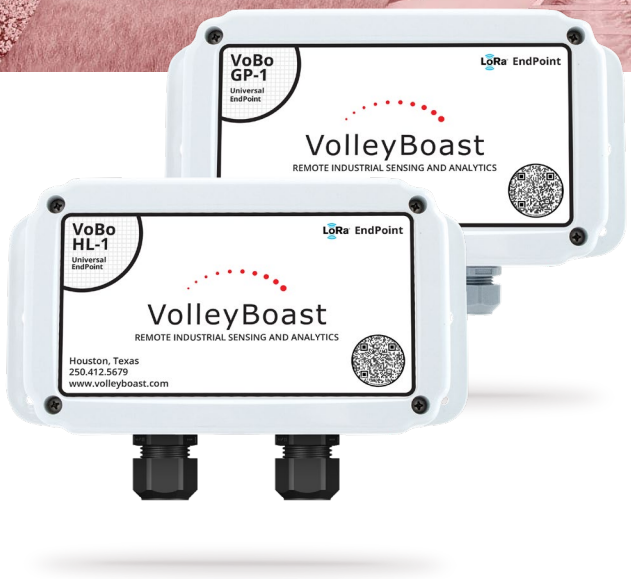
VolleyBoast



VoBo GP-1
VoBo HL-1

Universal LoRa® Endpoints for General Purpose and Hazardous Areas



The VoBo GP-1™ and VoBo HL-1™ are industrial grade, multiple input, universal LoRaWAN® bridge endpoints. They convert wired sensors and instruments into LoRaWAN® enabled instrumentation. Their 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 output power to connected sensors. Typical battery life is 3+ years and is user replaceable. They can be configured locally through a serial connection or over the air with downlinks. The rugged enclosure and internal antenna permit it to be installed almost anywhere, and 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* or VoBoAnalytics, the VoBo is ideal for enhancing your 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

LoRa Alliance Member

Features

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

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	Dry contact, voltage
Switching Voltage	Min=1.2V, Typ=1.5V Max=1.9V
Pulse Counting	On 1 digital input
Pulse Counting Frequency (max)	2250 Hz
Pulse Counting Units	Frequency, totalized, per cycle count
Pulse Counting Period	1 to 60 seconds/cycle
Digital Interrupt (WKUP)	1 Dry contact input

* *Per channel type selectable*

Serial Input/Output

Serial Inputs	1 Input
Serial Interface	RS-485
Serial Protocol	Modbus RTU
Number of Slave Devices	1 Standard >1 Optional*
Serial I/O Port**	RS-232

* *Daisy chained slave devices*

** *For configuration, monitoring, and data recovery*

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	28 to 16 AWG
Weight	1.5 lbs

* *Excluding cord grips*

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

Mounting

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

Functionality

LoRaWAN® Class	A
Modbus RTU Write Capability	Yes
Data Logging	Sensor data, events, configuration changes
Data Logging Capacity	~35000 payloads
Data Logging Access	Serial or 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*

Power

Battery Size	LSH20 (D size)
Battery Type	Li-$SOCl_2$
Battery Access	User replaceable
Battery Voltage	3.6 V nominal
Battery Capacity	13.0 Ah nominal
V+ Output Voltage Range	5 to 24 Vdc
Power Output	750mW maximum

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	Compatible with LoRaWAN® compliant devices

Environmental

Temperature	-35 to 80 °C
Exposure Class	IP66 / Type 4X
NRTL Listed	UL-62368-1, Third Edition
E115256	CSA C22.2 No. 62368-1, Third Edition Annex Y
HL-1	ANSI/ISA 12.12.01
Certified Use	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

LoRaWAN® Certified (HL-1 US915)

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