VoBo XP

Externally Powered LoRaWAN® Endpoint for Continuous Monitoring

The VoBo XP™ is an externally powered, industrial grade, 7 input, 4 output, LoRaWAN® bridge certified for Class 1 Division 2 (pending) hazardous areas. It can operate as a LoRaWAN® Class A (sleep/wake monitoring) or Class C (continuous monitoring) device with the ability to perform control functions through relay drivers. The VoBo XP can operate on solar power where an external power source is a challenge. It's wide range of analog and digital inputs enable customers to enhance their data collection efforts using trusted, qualified or existing sensors. 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 LoRa® radio technology provides robust wireless communication and the LoRaWAN® protocol enables economical scaling.
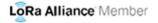
With the addition of Volley Boast's proprietary VoBoSync* technology, which synchronizes data collection across any number of VoBoSync* enabled devices , the VoBo XP is ideal for enhancing your Industry 4.0 edge compute and analytics program.

Applications

- Applications for continuous or high data rate monitoring
- Control functions for latching or non-latching relays
- Power switch for 12 and 24 Vdc applications.
- Loads with a high in-rush current such as motors and lamps.
- Resistive, inductive, and capacitive loads in switching applications.

Features

- Externally Powered
- Solar Power Ready
- LoRaWAN® Class A or C
- 3 Analog Inputs
- 2 Digital Inputs
- Wake Up Digital Input
- RS485 / RS232 Serial Input
- 4 Relay Drivers
- Data Logging
- Analytics Plug-In Capable
- Available with VoBoSync*
- Power Failure Detection
- Class 1, Division 2 (Pending)
- IP66 / NEMA 4X

*Patent Pending

Specifications

Analog Input

Analog Inputs	3 Inputs*
Analog Input Types	2, 3, and 4 wire
	4-20mA, 0-5V, 0-10V
	NAMUR proximity
Analog Input Impedance	
4-20mA	250 ohm
0-5V	50 Kohm
0-10V	37.5 Kohm
NAMUR	1000 ohm
Measurement Resolution	16 bit
Measurement Units	Engineering units
	or ADC counts
Measurement Numerical Format	FP32

Per channel type selectable

Relay Drivers

Number of Drivers	4
Driver Control	Command, event or
	analytics driven
Driver Type	Low Side (N-Channel)
Input Voltage	36.0 V maximum
	3.0 V minimum
Input Current	900 mA maximum
On-State Resistance	600 mOhm maximum
Off-State Leakage Current	1 mA maximum
Over-Voltage Protection	Yes
Over-Current Protection	Yes
Over-Temperature Protection	Yes
Open Circuit Detection	Yes

Digital Input

Digital Inputs	2 Inputs*
Digital Input Types	Dry contact, voltage
	PNP, NPN proximity
Digital Interrupt (WKUP)	1 Input
Digital Interrupt Type	Dry contact

Per channel type selectable

Serial Input/Output

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

Per channel type selectable

**Daisy chained slave devices*

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

Functionality

LoRaWAN® Class	A or C
Data Logging	Sensor data, events,
	configuration changes
Data Logging Capacity	~5000 sensor payloads
Data Logging Access	Serial or
	downlink/uplink
Output Control	Command, event or
	analytics driven
Operation Modes	Online* / Offline**
Sample Cycle Time	
Class A Function	1 to 2880 minutes***
Class C Function	Near continuous****
Wakeup by External Magnet	Yes
Heartbeat Cycle	24 hours
Heartbeat Data	Battery voltage, signal
	strength, node status

Transmits on LoRaWAN® plus local data logging

**Local data logging only*

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

****With analytics*

Power

Input Voltage	12 to 24 Vdc
Voltage Supply to Terminal	4 to 24 Vdc
Current Supply to Terminal	TBD
Sleep Current	TBD

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Specifications

Radio

Protocol	LoRaWAN® 1.0.4
Antenna	Internal
Range	Up to 6 miles LOS
Frequency	US915 ISM band, 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

Physical

Enclosure Material	TBD
Enclosure Dimensions	8.75" x 5" x 3.5" approx.*
Cord Grip Holes	4 holes, 0.875" diameter**
Cord Grip Capacity	0.18 to 0.4" diameter
Input Terminals	24 to 12 AWG
Weight	TBD
Cover Fasteners	Captive, 316 stainless

Excluding cord grips

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

Environmental

Temperature	-40 to 80 °C
NTRL Listed	TBD
Certified Use	Class I, Division 2, (Pending) IP66 / NEMA 4X

Mounting

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

Contact Volley Boast for available mounts

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