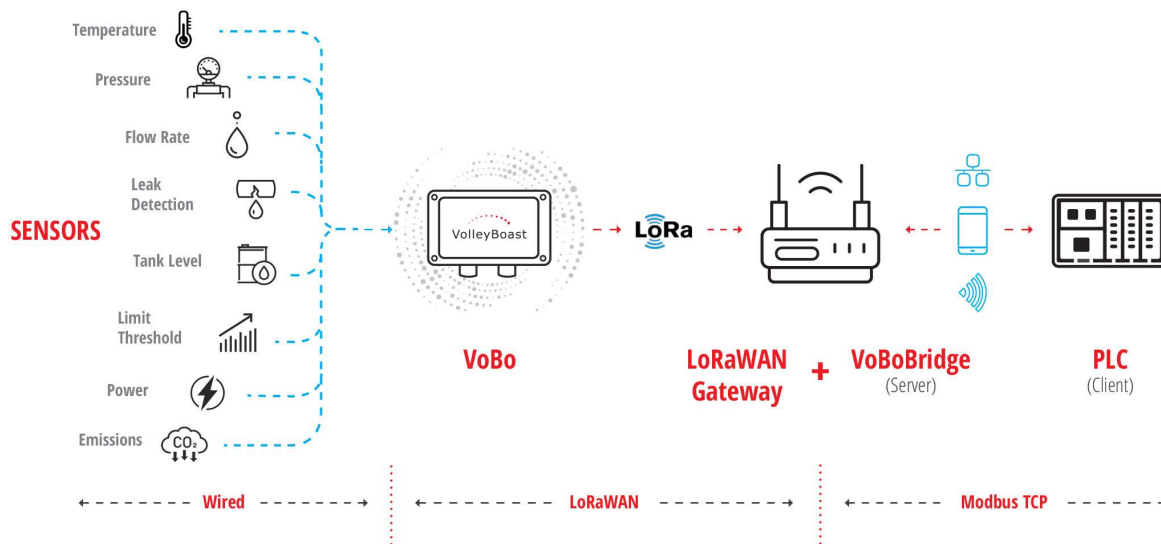# VoBoBridge

Bridge LoRaWAN Payloads to Modbus TCP

VoBoBridge™ is a Volley Boast proprietary software module integrated with a LoRaWAN gateway that allows sensor data received over LoRaWAN to be read over Modbus TCP. With VoBo endpoints and the VoBoBridge, wired sensor data can be transmitted over LoRaWAN and then polled directly by a PLC over Modbus TCP. This simple wireless system combines the long range, low power, sensor agnostic features of VoBo endpoints and LoRaWAN, with the Modbus TCP protocol commonly used by PLCs. When a VoBo payload is received at the gateway via LoRaWAN wireless transmission, the data is streamed to the VoBoBridge where the payload is decoded and saved in the assigned registers where the PLC can access the data. VoBoBridge is an efficient way to integrate LoRaWAN endpoints with a SCADA system, without the need for a LoRaWAN Network Server or internet access, and where isolation from the internet is needed for security.

Features

- Bridges LoRaWAN and Modbus TCP
- Allows a PLC to receive sensor data wirelessly
- Simple System Architecture
- Internet Access Not Required
- Up to 80 VoBo Endpoints Supported
- Extended Modbus Addressing Supported
- All VoBo Models Supported
- All VoBo Data Payload Types Supported
- Downlinks to VoBos Supported
- LoRaWAN® Compliant Gateway
- US915 and Other Channel Plans Available
- VoBoSync* Supported

*Patent Pending

Specifications

VoBoBridge Functionality

Number of VoBo Endpoints	12 Standard
	80 Extended
Modbus TCP Register Address Range	0 to 9998, Standard
	0 to 65535, Extended
Modbus TCP Register Type	Holding Registers 0x03
Modbus TCP Register Write	1 to 125 Registers
Timestamps and Update Counters	Per Payload / Register
Unix to Date/Time Conversion	Yes
VoBo Downlinks Supported	Yes
Downlink Register Sets	2 per VoBo
VoBo Slot Assignment	Manual or Automatic
VoBo Models Supported	All
VoBo Data Payload Types Supported	All

Multitech Conduit 300

Protocol	LoRaWAN® 1.0.4
Antenna	External
Range to Endpoint	Up to 6 miles LOS
Channel Plan	US 915 MHz, ISM Band and Other Channels Available
Data Encryption	AES 128
Certifications	US: Part 22, 24, 27
	CAN: ISED-003
EMC Compliance	US: FCC Part 15 Class B
	CAN: ICES-003 Class B
Safety	IEC/UL/cUL 60950-1
	IEC/UL/cUL 62368-1
Data Backhaul Options	Ethernet, Cellular, WiFi, BT
Ethernet Backhaul	10/100/1000 Base T
Cellular	LTE Category 4
WiFi	802.11abng (2.4 & 5 Ghz)
Bluetooth	Classic 4.2 and BLE
GNSS Use	Location and Time Stamp
GNSS Concurrent Connections	3
GNSS Systems Supported	GPS/QZSS/SBAS & GLONASS
Ethernet Switch	4 Port

Power

Supply	12-32VDC
	POE, 37-57VDC
	Power adapter
Draw	15.3W Average

Analog Inputs per Endpoint

VoBo Models	GP-1, HL-1, XP, TC
Analog Inputs	3 Inputs, GP-1, HL-1, XP
	12 inputs, TC
Analog Input Types	2, 3, and 4 wire
	4-20mA, 0-5V, 0-10V
	NAMUR proximity
	Thermocouple
Engineering Units Supported	Yes

Digital Inputs per Endpoint

VoBo Models	GP-1, HL-1, XP
Digital Inputs	3 Inputs, GP-1, HL-1
	2 Inputs, XP
Digital Input Type	Dry contact, voltage
	PNP, NPN proximity

Digital Interrupt Inputs per Endpoint

VoBo Models	All Models
Digital Interrupt (WKUP)	1 Input
Digital Interrupt Type	Dry contact

Serial Inputs per Endpoint

Serial Inputs	1 Port
Multiple Serial Devices	Yes, daisy chained
Serial Interface	RS485, RS232
Serial Protocol	RS485 Modbus RTU
Modbus RTU Groups	41 Groups
Modbus RTU Registers	1 or 2 Registers/Group

Physical

LoRa Antenna Connectors	2
LoRa Antenna Connector Type	Female reverse polarity SMA
LoRa External Antenna Ready	Yes
Enclosure Dimensions	7.88" x 4.30" x 2.50"
Temperature	-40 to 70 °C
Weight	2.0 lbs

Volley Boast, LLC
www.volleyboast.com
info@volleyboast.com

DCM-0073-A1