Remote Monitoring for Business

ALTA Serial Modbus Gateway

General Description

The ALTA Serial Modbus Gateway (SMG) acts as a data concentrator for Monnit's ALTA long range wireless sensor networks. This device allows you to connect up to 50 wireless sensing devices, per gateway, to your existing serial Modbus RS-232C and RS-485 sensing and control infrastructures.

Monnit has recognized the importance of using open standards like Modbus, allowing ALTA wireless sensors to be used in the majority of industrial applications. Modbus is often used to connect a supervisory computer with a remote terminal unit (RTU) in supervisory control and data acquisition (SCADA) systems. Modbus allows for communication between many (approximately 247) devices connected to the same wired network. Therefore, ALTA SMG's allows for seemingly unlimited wireless expansion to a traditional wired network.

A system incorporating an ALTA SMG would consists of the following:

- Modbus Master – PLC, SCADA, etc.
- Existing RS-232C or RS-485 Infrastructure
- ALTA Serial Modbus Gateway (SMG)
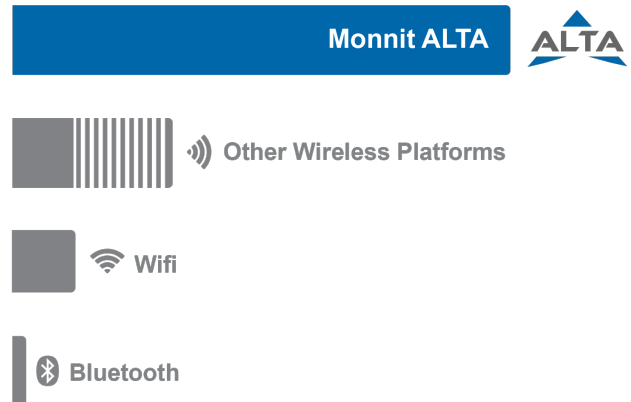- ALTA Wireless Sensors

Applications

- Process automation protocols
- Industrial control system protocols
- Building automation protocols
- Power system automation protocols
- Automatic meter reading protocols
- Automobile / Vehicle protocol buses
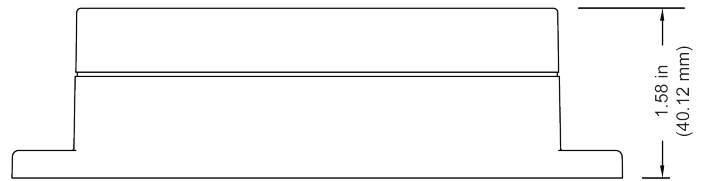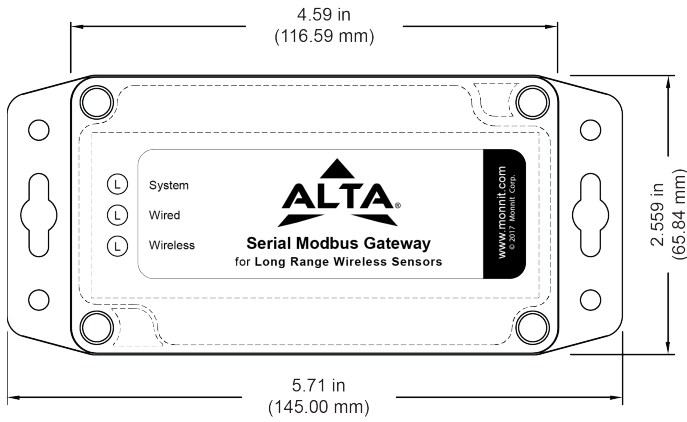- In any existing Modbus system

ALTA Serial Modbus Gateway Features

- Wireless range of 1,200+ feet through 12-14 walls [1]
- 900 MHz Frequency Hopping Spread Spectrum (FHSS), 868 and 433 MHz Frequency Agile
- Best in class interference immunity
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- 16,000 sensor message memory
- Over the air updates (future proof)
- Communicates with Modbus RTU / ASCII Serial Protocols
- Supports RS-232C / RS-485 Interfacing
- LED Status Indicators
- NEMA 4X / IP65 Rated Enclosure
- RP SMA Antenna Connector (Antenna Included)

[1]Actual range may vary depending on environment.

Wireless Range Comparison

Monnit ALTA

Other Wireless Platforms

Wifi

Bluetooth

ALTA Serial Modbus Gateway Specifications

Wireless

Wireless Range	1,200+ ft. non-line-of-sight [1]
Security	Encrypt-RF® (256-bit key exchange and AES-128 CTR)
Monnit Radio Support	ALTA Wireless Module by Monnit Frequencies: 900, 868 and 433 MHz
Antenna	Connector: SMA Gain: 5.0 dBi Standard
Certifications	900 MHz product; FCC ID: ZTL- G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz product tested and found to comply with: EN 300 220-2 V3.1.1 (2017-02), EN 300 220-2 V3.1.1 (2017-02) and EN 60950.

3 Wire Communication Interface

RS-232C	TXD (OUT), RXD (IN), and Ground / Common
RS-485	D+, D-, and Ground / Common
Protocol Selector	Jumper for RS-232 and RS485

Power

Input Voltage Range	4.5 - 36.0 VDC [2]
Minimum Current Required	100mA (500mA Recommended)

Environmental

Operating Temperature	-40°C to +85°C (-40°F to 185°F) [3]
Storage Temperature	-40°C to +85°C (-40°F to 185°F)

Mechanical

|	
LEDs	Wireless Activity, Wired Activity, System Status
Reset Feature	Communication / Factory Settings Reset Jumper
Enclosure	Durable, Impact-Resistant UV Stabilized Polycarbonate (IP65 of IEC 529 and NEMA 1, 2, 4, 4x, 12 and 13 Rated)
Dimensions	179.603 x 90.678 x 41.30 mm
Weight	16 ounces

[1] Actual range may vary depending on environment.
[2] Hardware cannot withstand negative voltage. Please take care when connecting a power device.
[3] At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

Example Network Integration

Monnit wireless sensors integrate with existing Modbus systems allowing for additional environmental variables to be monitored.

Over 55 unique types of wireless sensors designed to monitor various environmental conditions.
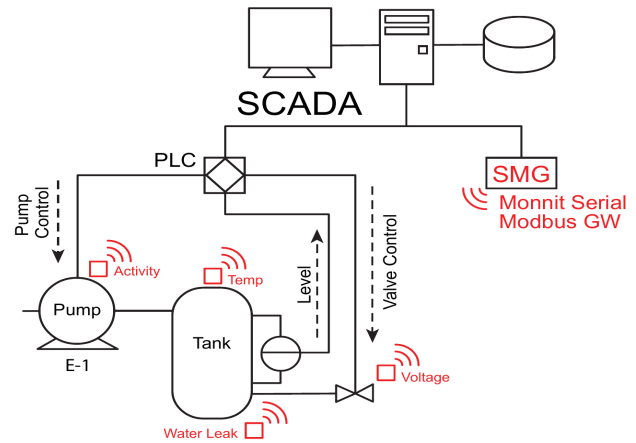
Caution / Notice:

Monnit commercial grade products are designed for applications in ordinary environments (normal room temperature, humidity and atmospheric pressure). Do not use these sensors under the following conditions as these factors can deteriorate the product characteristics and cause failures and burn-out.

- Corrosive gas or deoxidizing gas - chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxides gas, etc.)
- Volatile or flammable gas
- Dusty conditions
- Under low or high pressure
- Wet or excessively humid locations
- Places with salt water, oils chemical liquids or organic solvents
- Where there are excessively strong vibrations
- Other places where similar hazardous conditions exist

Use these product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality of this product.

MONNIT®

Monnit Corporation
3400 South West Temple ● Salt Lake City, UT 84115 ● 801-561-5555
www.monnit.com