



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

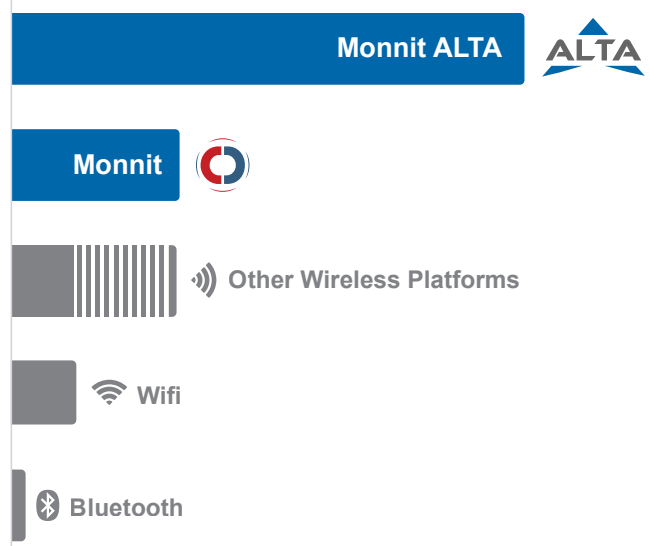
- Process automation protocols
- Industrial control system protocols
- Building automation protocols
- Power system automation protocols
- Automatic meter reading protocols
- Automobile / Vehicle protocol buses
- In any existing Modbus system

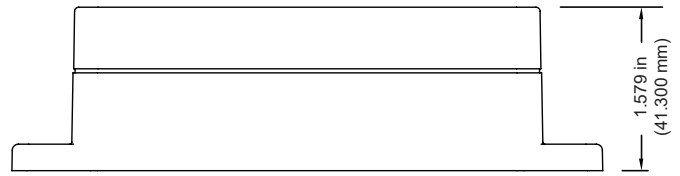
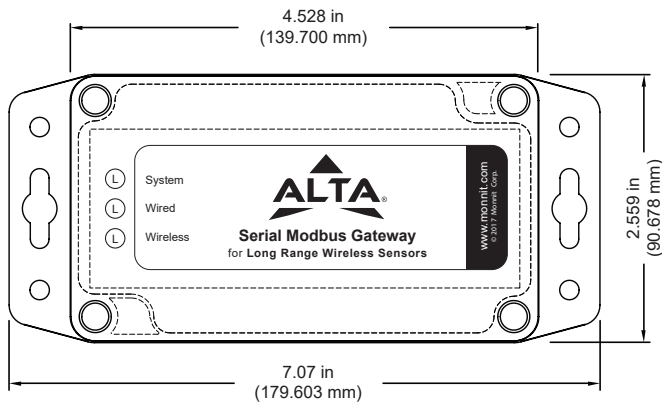
ALTA Serial Modbus Gateway Features

- Wireless range of 1,200+ feet through 12-14 walls *
- 900 MHz Frequency Hopping Spread Spectrum (FHSS), 868 and 433 MHz Frequency Agile
- Improved 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)

* Actual range may vary depending on environment.


Wireless Range Comparison





ALTA Serial Modbus Gateway Specifications

Wireless

Wireless Range	1,200+ ft. non-line-of-sight *
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: RP-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 **
Minimum Current Required	100mA (500mA Recommended)

Environmental

Operating Temperature	-40°C to +85°C (-40°F to 185°F) ***
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

* Actual range may vary depending on environment.

** Hardware cannot withstand negative voltage. Please take care when connecting a power device.