

ALTA® Wireless Propane Tank Level Monitor

General Description

The [Wireless ALTA Propane Tank Level Monitor](#) measures the propane level in a tank.

Key Features

- ▶ Measurement Range: 0% - 100%
 - ▶ Levels below 8% displays as Empty
 - ▶ Levels above 80% displays as Full
- ▶ Resolution: 1%

Principles of Operation

The ALTA Propane Tank Level Monitor measures the volumetric percentage of propane in a contained environment on a user-configurable time interval or Heartbeat. Inside the tank, a magnet attached to a buoyant float moves with the propane level. A mate gauge is attached to the outside of the magnetic level monitor. On every Heartbeat, the gauge monitor produces a voltage proportional to the sensed magnetic field. This monitor converts the sensed voltage into a percentage based on the volume of the container. This measurement is then sent to the gateway, making the data available in iMonnit or another approved data service.

WARNING: DO NOT attempt to change the dial yourself if you don't have a dial that is R3D compatible. Please contact your propane supplier and ask them for a replacement dial that supports the R3D standard. The float gauge inside the tank doesn't need to be replaced, just the plastic dial that reports the propane level inside the tank.

Example Applications

- ▶ Propane Level Monitoring
- ▶ [Additional applications](#)

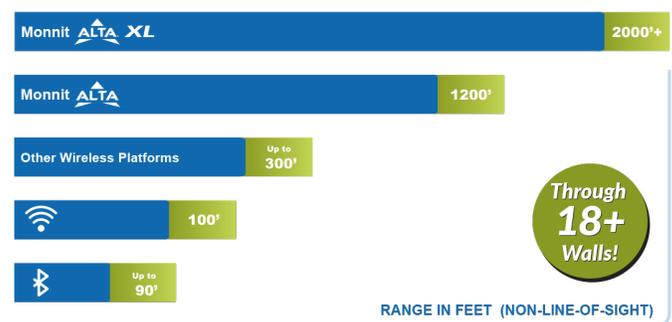
Features of Monnit ALTA Sensors

- Wireless range of 2,000+ feet through 18+ walls¹
- Frequency-Hopping Spread Spectrum (FHSS)
- Best-in-class interference immunity
- Best-in-class power management for longer battery life²
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + Advanced Encryption Standard (AES)-128 Cipher Block Chaining (CBC) for sensor data messages)
- Sensor logs 2000 to 4000 readings if the gateway connection is lost (non-volatile flash, persists through power cycling):
 - 10-minute Heartbeats = ~ 22 days
 - 2-hour Heartbeats = ~ 266 days
- Automatic over-the-air updates to sensor firmware (future-proof)
- Free iMonnit Basic Online Wireless Sensor Monitoring and Notification System to configure sensors, view data, and send alerts via SMS text, email, and voice call

1 Actual range may vary depending on the environment and gateway.

2 Battery life is determined by the sensor reporting frequency and other variables. Other power options are also available.

Wireless Range Comparison



Technical Specification | ALTA® Wireless Propane Tank Level Meters

Level Monitor	Measurement Range	0 - 100 % - Below 8% is considered empty - Above 80% is considered full
	Measurement Resolution	1%
	Measurement Accuracy	+/- 10%
	Lead Length	6 feet (1.8 m)
ALTA Wireless	Data logging	Sensor logs 2000 to 4000 readings if gateway connection is lost (non-volatile flash, persists through power cycling): 10-minute Heartbeats = ~22 days - 2-hour Heartbeats = ~266 days
	Wireless protocol	ALTA Proprietary Frequency-Hopping Spread Spectrum (FHSS)
	Wireless transmission power (EIRP)	50 mW (900MHz), 25 mW (868 MHz), 10 mW (433 MHz)
	Wireless range	2,000+ ft. through 18+ walls with the ALTA XL® Gateway
	Security	Encrypt-RF® (256-bit key exchange and AES-128 CTR)
General	Battery voltage range	2.0 to 3.8 VDC
	Operating altitude (non-pressurized environments)	-15.2 to 1,982 m (-50 to 6,500 ft) ¹
	Storage altitude (non-pressurized environments)	-15.2 to 3,048 m (-50 to 10,000 ft) ¹
	Operating humidity	5 to 85% RH (non-condensing)
	Certifications	900 MHz sensors: FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1 . 868 and 433 MHz sensors tested and comply with: EN 55032: 2015/A11:2020; EN 55035:2017/A11:2020; ETSI EN 300 220 V3.2.1 (2018-06); ETSI EN 301 489-3 V2.2.0. (2021-11); and ETSI EN 303 645 . All sensors tested and comply with: EN 61010-1 and EN 60950 and meet RoHS 2015/863 and REACH 224 (June 2022), according to IEC 63000:2016/AMD1:2022 .



1. Operating and storage altitude without DC power supply is -30.48 to 9144 m (-100 to 30000 ft).

R3D Gauge Information

The ALTA Propane Level Monitor supports both Jr. and Sr. R3D Gauges. Monnit's level monitor does not support anything outside of this specification.



R3D LP Dial Sr. Tab

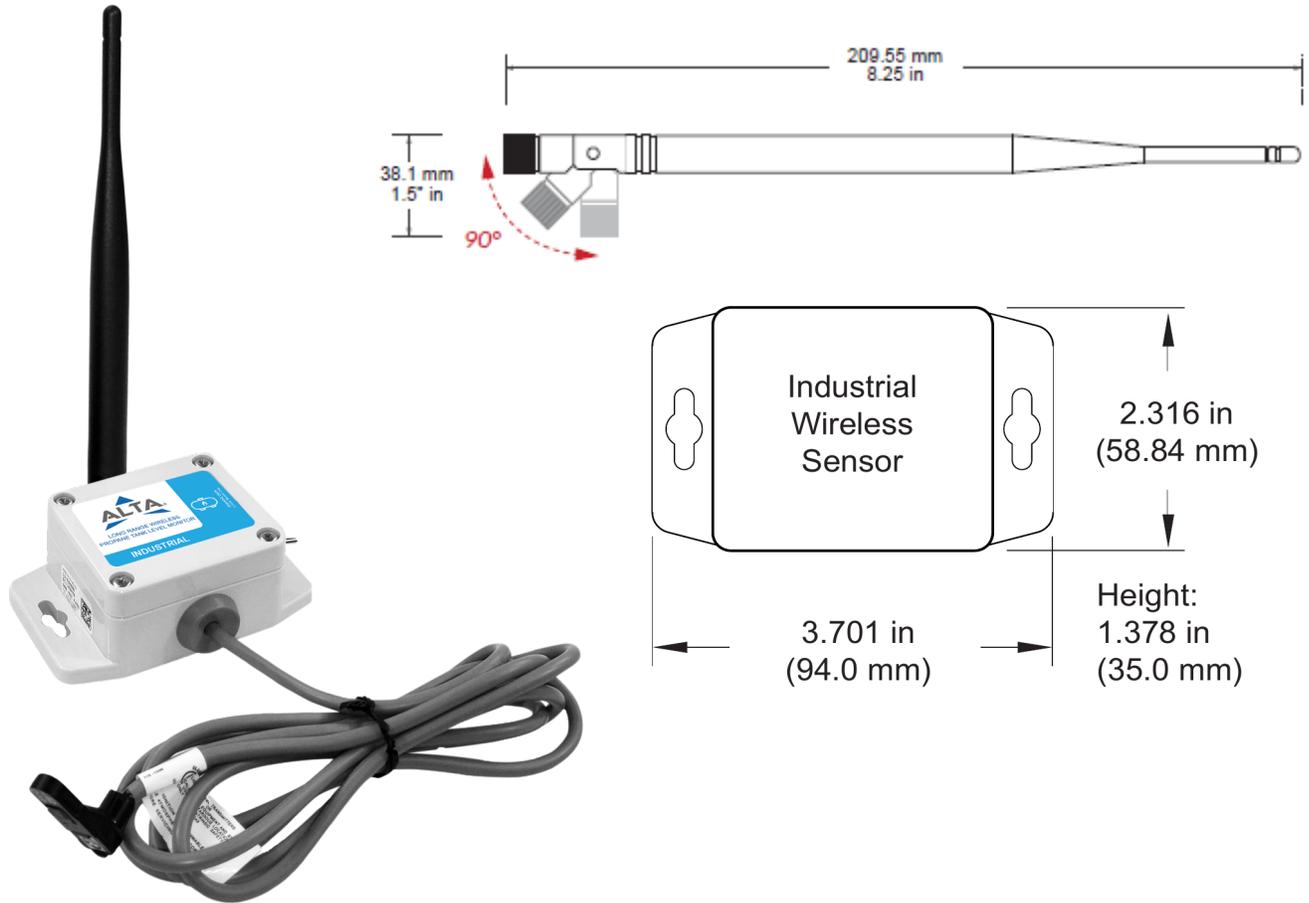


R3D LP Dial Jr. Tab

Style	Tank
Jr.	Horizontal
Sr.	
Snap-On	
Jr.	Vertical DOT
Jr.	Below Ground

This sensor reports the following:

- Volumetric percentage of propane level in the tank
- Temperature in °C or °F
- % Relative Humidity (RH)



Technical Specifications ALTA® Industrial Wireless Propane Tank Level Meter	
Battery	1x 3.6V AA Lithium Thionyl Chloride, 1500mAh, pre-installed
Battery Life	10+ years expected
Operating temperature range ¹	-25°C to 80°C (-13°F to 176°F)
Operating humidity	5 to 95% RH (non-condensing)
Wireless antenna type	1/2-wave waterproof dipole with RP-SMA connector and swivel neck; dBi of 3.0 (900/868MHz) or 2.5 (433 MHz); length of 8.27" (210mm) (900/868MHz) or 7.68" (195mm) (433 MHz); diameter at thickest point of 0.55" (14mm)
Weight	4.7 ounces (1g)
Enclosure rating	NEMA 1, 2, 4, 4x, 12, and 13 rated, sealed, and weatherproof
UL rating	UL Listed to UL508-4x specifications (File E194432)

1. Operating below 0°C (-32°F) degrees will reduce battery life.

Industrial-Grade Sensors | Type 1, 2, 4, 4X, 12, and 13 NEMA-Rated Enclosure

Monnit's industrial sensors are enclosed in reliable, weatherproof NEMA-rated enclosures. Our NEMA-rated enclosures are constructed for both indoor or outdoor use and protect the sensor circuitry against the ingress of solid foreign objects like dust and the damaging effects of water.

- Safe from falling dirt
- Protects against wind-blown dust
- Protects against rain, sleet, snow, splashing water, and hose-directed water
- Increased level of corrosion resistance
- Will remain undamaged by ice formation on the enclosure



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