SenSpot™ Wireless Level/Height Meter

Ultra-Low Power Precision Sensing & Wireless Communication

Typical Applications

- Water level monitoring

- Distance measuring

- Hydrometeorology

- Extend wireless communication range by relaying data between SenSpot™ and SeniMax™ when the RF link is weak (as Repeater).

- Gateway (Cellular type) for collecting data from other Resensys wireless SenSpot™s and send them to remote server.

Benefits

- **Long lifetime**: Unlimited lifetime in presence of ambient light.

- **Wireless transmission:** No wiring is required for data collection.

- **Two types:**
  - **Lite:** smaller. Need a separate gateway to connect to remote server.
  - **Cellular:** have a built-in modem. Does not need a separate gateway to connect to remote server.

- **Lightweight**
  - Wireless transceiver (Lite): 450 g (1 lb.)
  - Wireless transceiver (Cellular): 500g (1.10 lb.)
  - Ultrasonic distance meter with cable: 0.8kg (1.8lb.)
  - Solar panel with mount and 3 m (10ft) cable: 300 g (10.6oz)

- **Easy mounting :** Flange mount or adhesive tape
  - Self-adhesive, no drilling is required (smooth surfaces such as steel).
  - Flange-mount, drilling is required (uneven surfaces such as concrete).
- **Maintenance free:** No battery replacement, calibration or post-installation maintenance is required.

Specifications

- **Working temperature:** -40°C to +65°C (-40°F to +150°F).
- **Ingress Protection:** IP67, weatherproof and protected against rain, snow, and UV exposure.
- **Wireless communication range:** 300m (980ft) for reliable communication.
- **Power source:** Re chargeable lithium-ion 18650 battery.
- **Cable length:** 4.5m (14.8ft)
- **Optimal Range:** 6.1m (20ft.)
- **Maximum Range:** 9.1m (30ft.)

- **Resolution:** 3cm (0.1ft)
- **Dead band (Minimum range):** Typ. <25.4cm (10 in.)
- **Ultrasonic transducer features:**
  - Ruggedized piezoelectric
  - NEMA-4X,NEMA 6P protection
  - 316 stainless steel housing
  - Operable from 0 to 100% humidity
  - 30mm threaded
  - Total weight: 10.4 oz. (0.29kg)
- **Ultrasonic Probe Dimension:**
  - Height 11cm (4.33")
  - Radius : 2.5cm (1")
  - Mounting: 15cm (5.90") × 10cm (3.94") corner brace.
- **Transceiver box dimension:**
  - **Type Lite :** 140mm (5.50") × 105mm (4.12") × 62mm (2.44")
  - **Type Cellular:** 155mm(6.125") × 117mm(4.625") × 62mm (2.44")

Description

SenSpot™ wireless ultrasonic level or height meter provides an easy way to install a scalable solution for measuring distance (e.g. water level or height, object detection and dimensions).

It comes with high capacity lithium-ion battery and solar panel and its mount. As a result, it does not require battery replacement and once installed, it is almost maintenance free.

There are two different Wireless Ultrasonic level meter types. Lite type is smaller and cheaper but need a gateway for sending the data to remote server while the cellular type has a built-in cellular modem that allow it to connect and send data to remote server without a separate gateway. The cellular type can function as a gateway as well for collecting data of other Resensys Wireless SenSpots and as a result, eliminating need for a separate gateway. It can also serve as SenSpot™ repeater at the same time to extend the wireless communication range between SenSpot™ and SeniMax™.

Installation

Wireless transceiver box comes with mounting flanges. It can be installed either with screws and anchors through the flange holes or with VHB adhesive tape (for steel and smooth surfaces).
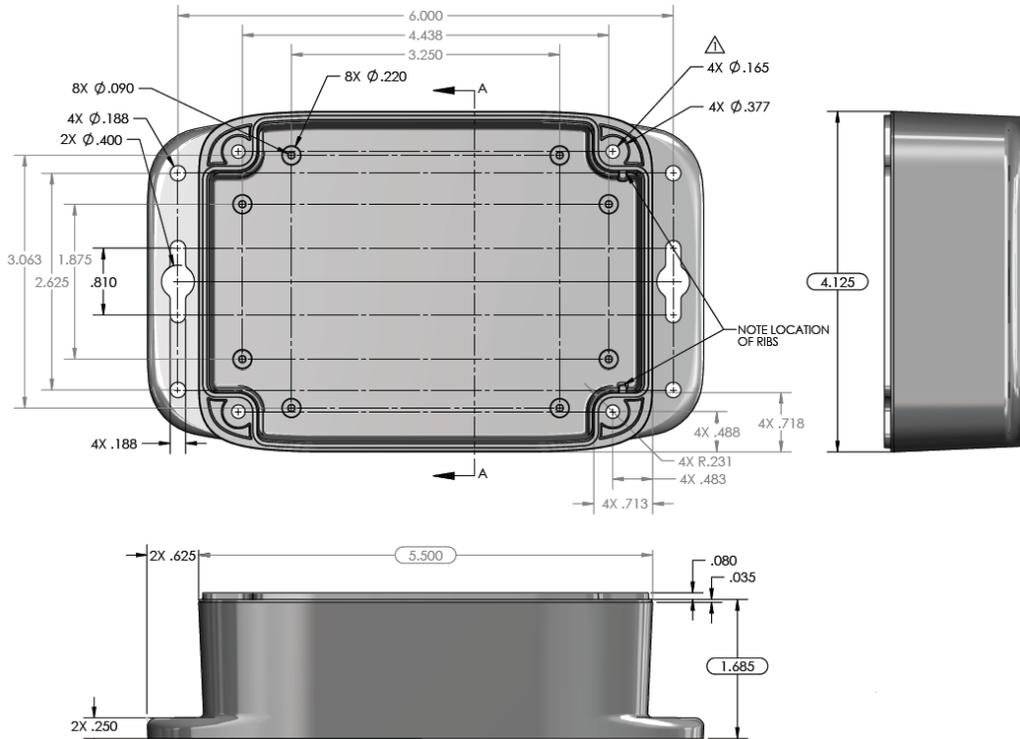

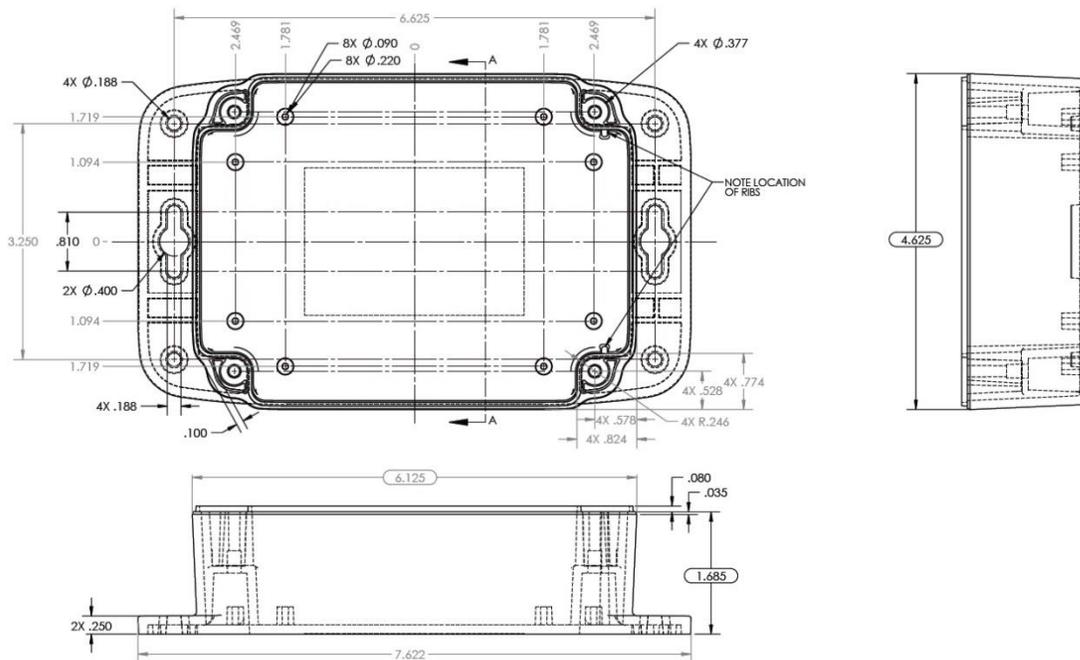**Figure 1: Wireless transceiver dimensions (Type Lite). All dimensions are in inch.**

Figure 2: Wireless transceiver dimensions (Type Cellular). All dimensions are in inch.
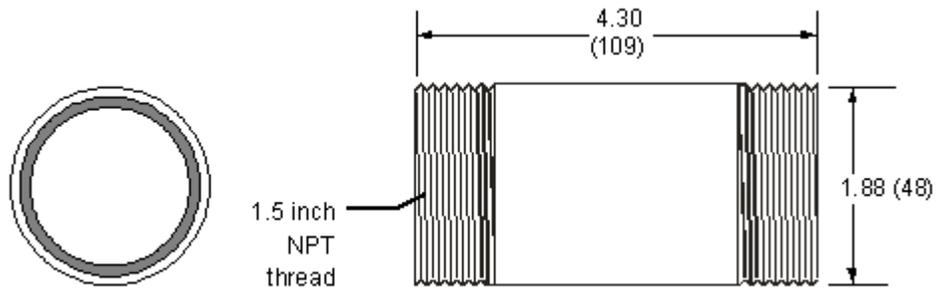
Figure 3: Ultrasonic Level meter transducer dimension. All measurements are in inch (mm).

Figure 4: photos of an installed Resensys ultrasonic water level meter SenSpot[TM].
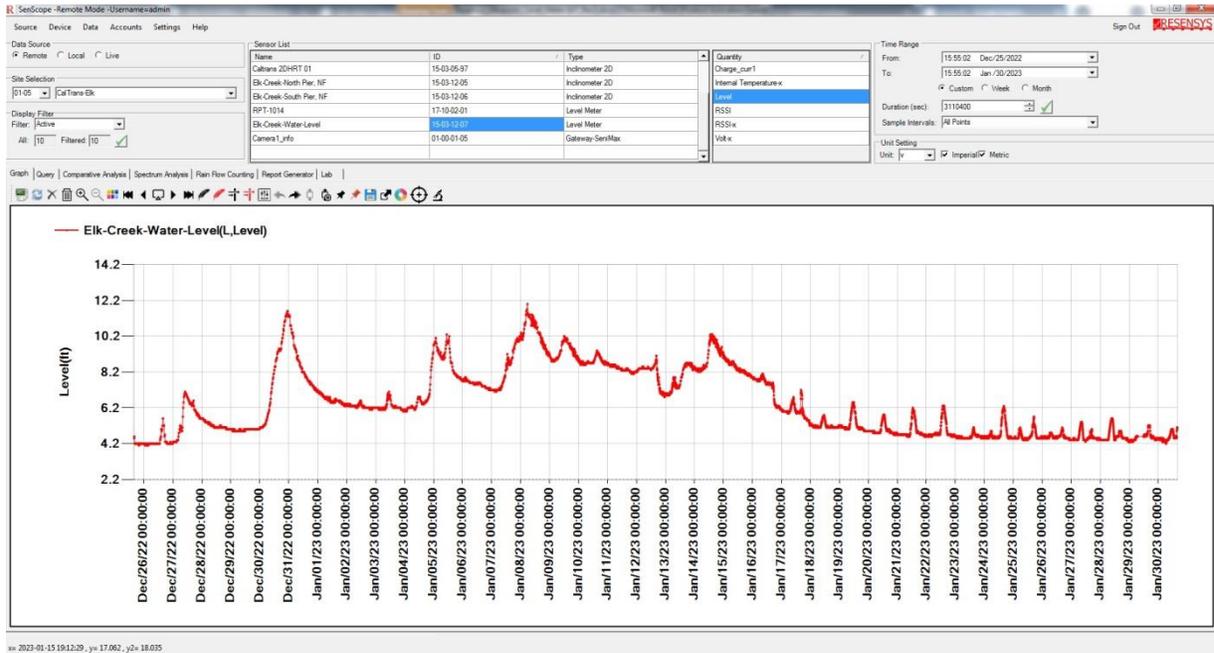
Figure 5: Level measurements of an installed ultrasonic level meter SenSpot^{TM}.

Ordering information

Type	Range	Part Number
Cellular (with built-in modem)	30ft	SP-WL-CEL\30
Cellular (with built-in modem)	50ft	SP-WL-CEL\50
Lite (smaller, no built-in modem)	30ft	SP-WL-LIT\30
Lite (smaller, no built-in modem)	50ft	SP-WL-LIT\50