



## LoRaWAN Ultrasonic Sensor North America variant

Our Ultrasonic LoRaWAN sensor is a flexible and configurable, battery operated ultrasonic level sensor with an integrated 915MHz LoRaWAN radio.

### Applications

- Liquid level monitoring
  - Fuel – Oil, Kerosene, Diesel, Aviation fuels
  - Lubricants
  - Additives
  - DEF / AdBlue
  - Coolants
  - Waste Oil
  - Chemicals - *\*This product may not be suitable for monitoring of certain corrosive and hazardous chemicals. List of product compatible chemicals to be verified with Tekelek representative.*
  - Water
  - Wastewater
- Tank / container type
  - Bulk storage tanks
  - Intermediate bulk containers (IBC)
  - Barrels and drums
  - Metal / plastic tanks
  - Underground and overground tanks



2" extended threaded mounting adaptor – Standard



Multi Thread Adaptor Kit (1 1/4", 1 1/2", 2")  
[Sold Separately]



### Features and benefits

- Accurate, reliable tank level monitoring
- Easy to install
- Up to 14 year battery life
- Up to 6.5mile/10km range
- Spot and continuous inventory measurement
- 24/7 monitoring
- Low and high level alarms
- Remote configurability
- Cost effective for large scale deployment
- FCC compliant
- Optimise delivery or collections, Increase efficiency, Ensure continued supply
- Improve profitability, Optimise logistics, Manage inventory
- Increase workplace safety

WEEE Reg. 00232

Tekelek, Shannon industrial estate, Shannon, Co. Clare, Ireland  
Tel : +353 (0)61 471511 | Fax: +353 (0)61 471685  
E-mail: sales@tekelek.com | Web: www.tekelek.com

# Specification

Characteristic	Transmitter
Dimensions	4.3"(W) x 4.3"(L) x 5"(H) ±0.1" 109mm(W) x 109mm(L) x 126mm(H) ±1mm
Weight	8oz (220g) including battery
Housing material	UV Stabilized Polypropylene (compatible with Oil)
Operating temperature	-4°F to +122°F (-20°C to +50°C) <b>Note 1</b>
Recommended storage temperature	+68°F to +77°F (+20°C to +25°C) clean, cool, dry and ventilated. <b>Note 1</b>
Humidity range	15% - 95%
Altitude range	<6,000' (<2Km) above sea level
Environmental Protection	IP67 – Outdoors
Radio standard	Supports LoRaWAN 1.0.2 compliant 125/250 KHz bands.
Frequency / Sub bands	LoRaWAN for US 915MHz is divided into 9 sub-bands. This sensor can work with either Sub Band 1, Sub Band 2 or all sub bands. Note: the required sub band option has to be requested from the factory.
Output power	Up to +18.5dBm (as measured into the internal antenna on the PCB; internal antenna gain = -3dB typ)
Gauge Type	Ultrasonic
Ultrasonic Range	>5" to <155" (>12cm to <400cm) <b>Note 2</b>
Ultrasonic Signal Diversion	30° ( <b>Note 3</b> )
Ultrasonic Resolution	±0.5" (±1cm)
Accuracy	Typically ±1" (±2cm)
Material compatibility	Suitable for use in tanks for the storage of water, diesel fuel, kerosene, gas oil types A2,C1,C2 and D as defined by BS2869.
Battery type	3.6V Li-SOCl <sub>2</sub> Size 2/3AA
Expected battery life	Typically 14 Years from activation ( <b>Note 4</b> )
Enclosure colour	Grey Pantone 422C

## Accessories

Tank mounting options	Fits directly into female 2" NPT thread (adapter available to fit directly to 1 ¼", 1 ½" or 2" NPT threads).
Gasket (included)	Material NBR 3.07"Ø x 0.1"(H) ±0.02" (78mm(Ø) x 2.5mm(H) ±0.5mm)
Adaptor Options	<ul style="list-style-type: none"> <li>2" extended threaded mounting adaptor – Standard</li> <li>Multi Thread Adaptor Kit (1¼", 1½", 2") – Sold Separately</li> </ul>

## Conformity

LoRa Alliance	Compliant to LoRaWAN 1.0.2 Specification
CE compliance	Yes
FCC compliance	Yes

**Note 1:** Storage and operation above 25°C/77°F may reduce battery life. Shelf life recommended not to exceed 12 months

**Note 2:** Based on a measurement to a flat liquid target of size 30cm<sup>2</sup>(4.65" <sup>2</sup>)

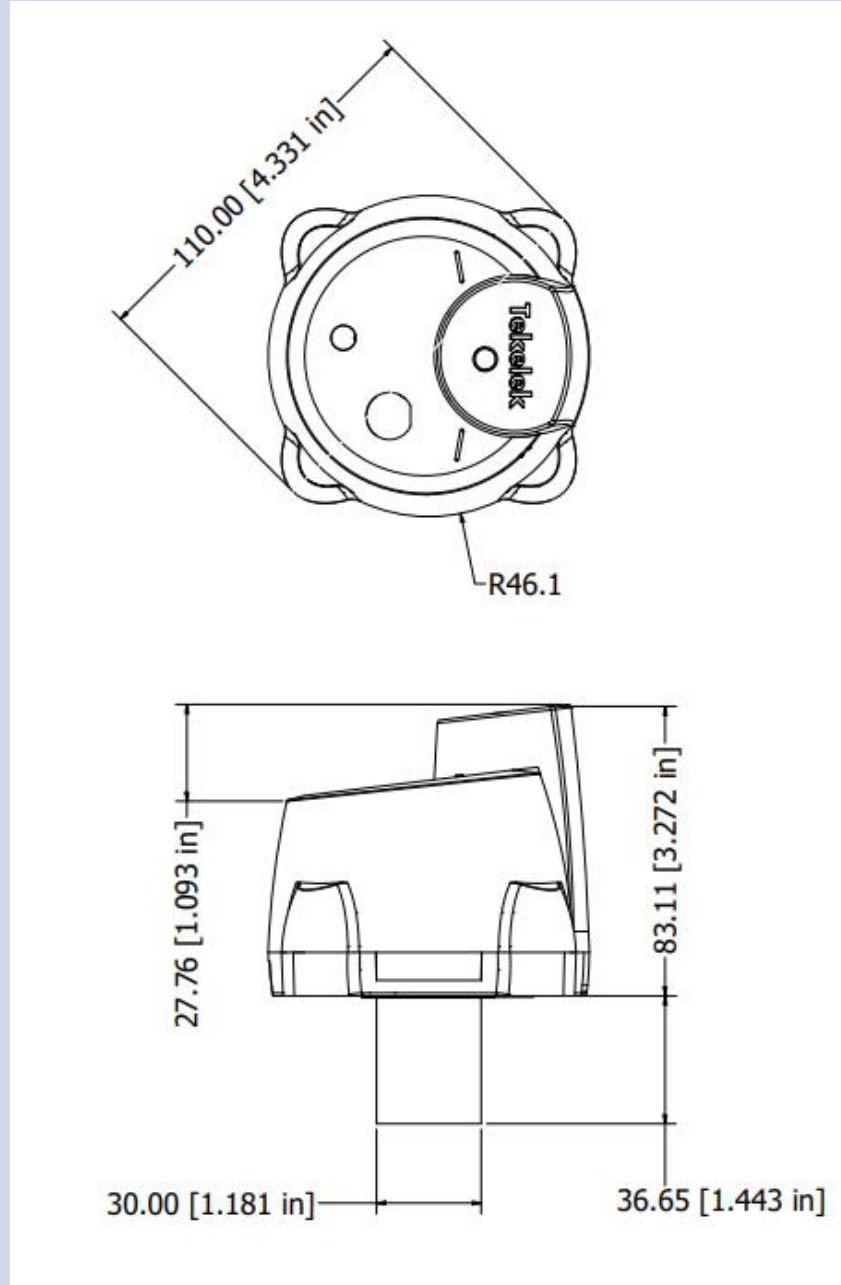
**Note 3:** The maximum spatial diversion of the ultrasonic signal will be < 30° from the central axis of the transducer.

**Note 4:** Based on activation within 6 months of the manufacturing date of the product, and device configuration for one LoRaWAN connection every six hours and one ultrasonic measurement every 15 minutes from an excellent LoRaWAN coverage (SF7), and a normal distribution over the operating temperature range centered at +25°C (77°F).

## Characteristics

## Liquid Level Sensor LoRaWAN

### Dimensions



# Specification

