Ultrasonic LoRaWAN Sensor

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

Applications

- Liquid level monitoring
    - Fuel – Oil, Kerosene
    - Water
    - Waste Oil
    - And more
- Ensure continued supply
- Optimise delivery or collections
- Spot and continuous inventory measurement
- 24/7 monitoring
- Low and high level alarms

Benefits

- Accurate, reliable tank level monitoring
- LoRaWAN Communication
- Spot and continuous inventory management
- Remote configurability
- Easy to install
- Minimum 2 year warranty
- Up to 14 year battery life
- Cost effective for large scale deployment
- CE Conformance and ROHS Compliant
- Up to 15km range
- Increase efficiency
- Improve profitability
- Optimise logistics
- Manage inventory

Specification

Characteristic	Transmitter
Dimensions	109mm(W) x 109mm(L) x 126mm(H) ±1mm 4.3"(W) x 4.3"(L) x 5"(H) ±0.1"
Weight	220g (8oz) including battery
Housing material	UV Stabilized Polypropylene (compatible with Oil)
Operating temperature	-20°C to +50°C (-4°F to +122°F) **Note 1**
Recommended storage temperature	+20°C to +25°C (+68°F to +77°F) clean, cool, dry and ventilated. **Note 1**
Humidity range	15% - 95%
Altitude range	<2Km (<6,000') above sea level
Environmental Protection	IP67 – Outdoors
Radio standard	Supports LoRaWAN 1.0.2 compliant 125/250 KHz bands.
Frequency	868MHz nominal
Output power	Up to +14dBm (25mW) (as measured into the internal antenna on the PCB; internal antenna gain = -3dB typ)
Gauge Type	Ultrasonic
Ultrasonic Range	>12cm to <400cm (>5" to <155") **Note 2**
Ultrasonic Signal Diversion	30° **(Note 3)**
Ultrasonic Resolution	±1cm (±0.5")
Accuracy	Typically ±2cm (±1")
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$_2$ Size 2/3AA
Expected battery life	Typically 14 Years from activation **(Note 4)**
Enclosure colour	Grey Pantone 422C

Accessories	
Tank mounting options	Fits directly into female 2" BSP thread (adapter available to fit directly to 1 ¼", 1 ½" or 2" BSP threads).
Gasket (included)	Material NBR 78mm(Ø) x 2.5mm(H) ±0.5mm (3.07"Ø x 0.1"(H) ±0.02"

Conformity	
EMC directive 2014/30/EU	The Electromagnetic Compatibility (EMC) Directive ensures that electrical and electronic equipment does not generate, or is not affected by, electromagnetic disturbance.
LVD directive 2014/35/EU	The Low Voltage Directive (LVD) ensures that electrical equipment within certain voltage limits provides a high level of protection for European citizens, and benefits fully from the Single Market.
RED directive 2014/53/EU	The Radio Equipment Directive ensures a Single Market for radio equipment by setting essential requirements for safety and health, electromagnetic compatibility, and the efficient use of the radio spectrum.
RoHs directive 2011/65/EU	This Directive lays down rules on the restriction of the use of hazardous substances in electrical and electronic equipment (EEE) with a view to contributing to the protection of human health and the environment, including the environmentally sound recovery and disposal of waste EEE.
LoRa Alliance	Compliant to LoRaWAN 1.0.2 Specification
CE compliance	Yes

Note 1: Storage and operation above 25°C 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 30cm².
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).

WEEE Reg. 00232   **Tekelek Group Ltd.** Unit 118, Shannon Free Zone, Shannon, Co. Clare, Ireland
Tel : +353 (0)61 471511 | **Fax:** +353 (0)61 471685
E-mail: sales@tekelek.ie | **Web:** www.tekelek.ie

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