



# Tank Monitoring

## ATEX LoRaWAN LPG level sensor (TEK 790)

Our ATEX certified LPG Tank Sensor is a flexible and configurable battery operated level sensor with an integrated LoRaWAN radio.

### Applications

- LPG/Propane tank dial-gauge position measurement
  - Rochester R3D/Twinsite Senior/Junior
- Tanks
  - Fixed or mobile
  - Vented or pressurised
  - Underground
- Optimise delivery or collections
- Spot and continuous inventory measurement
- Configurable reporting schedule and alarms

### Benefits

- Accurate, reliable tank level reporting to server monitoring application
- LoRaWAN Communication
- Up to 15 years battery life
- Programmable level alarms
- Low powered Rochester hall effect interface
- Measures approximately 5%-95% of tank capacity
- Rochester gauge compatible
- Accurate to 4%
- Conforms with ATEX Directive 2014/34/EU
- Reports local temperature and battery level
- Remote re-configurability
- Easy to install and commission
- CE Conformance and ROHS Compliant
- Minimum 1 year warranty



# Specification

Characteristic	TEK 790 LoRaWAN LPG sensor
Dimensions/Weight	60mm x 105mm x 73mm / Weight 330g including Rochester gauge, 220g without
Housing Material	Acrylonitrile Butadiene Styrene (ABS) black moulded enclosure.
Operating Temperature	-20°C to +55°C <b>Note 1</b>
Storage Temperature	+20°C to +25°C clean, cool, dry and ventilated. <b>Note 1</b>
Humidity	15 – 95% RH
Environmental Protection	Ingress protected to IP68, Impact resistance to IK06, UV resistant, Flamability rating UL94-V0, Chemical resistant
Frequency	863 - 876MHz Nominal 868MHz ISM band.
Output power	+14dBm (25mW) (as measured into the internal antenna on the PCB; internal antenna gain = -3dB typ)
Receiver Sensitivity	Up to -136dBm
Approximate range	More than 15km range in sub-urban situation (depends on environmental configuration) More than 2km range in urban situation (depends on environmental configuration)
Dial-gauges	5V Rochester Senior/Junior Twinsite/R3D (Rochester DS-1318.pdf compatible as standard)
Accuracy/resolution	10-bit (1023) A/D resolution, Accuracy is dependent on the gauge used
Safety	ATEX Zone II 2 G Ex ib IIA T3 Gb
User interface	NFC contactless standard interface: ISO 15693 (Frequency: 13.56MHz). Used for installation sequence, R/W distance up to 30mm.
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 and LPG.
Battery life	Up to 15 Years from activation ( <b>Note 2</b> )
Battery technology	3.6V SAFT LS17500 or EVE ER17505 capacity 3.6Ah
Manual Activation	Integrated slider magnetic switch or via android phone application and NFC interface. Installation feedback is provided via a bi-colour LED.
Mounting	Wall mount with screws, Vertical pipe mounting with cable ties, Horizontal pipe mounting with cable ties

## 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
ATEX directive 2014/34/EU	II 2 G Ex ib IIA T3 Gb (LCIE16ATEX3023X)
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
REACH	REACH (EC Regulation 1907/2006)

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

**Note 2:** Based on activation within 6 months of the manufacturing date of the product, and device configuration for 4 measurement per day, 4 LoRaWAN connections per day from a location where the LoRaWAN coverage does not require retries (SF12), and a normal distribution over the operating temperature range centered at +25°C (77°F).

WEEE Reg. 00232  
Patent pending

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