



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
- Programmable Alarms
 - High level
 - Low levels
- Reports local temperature and battery level
- Remote re-configurability
- Easy to install and commission
- CE Conformance and ROHS Compliant



Specification

| Characteristic | TEK 790 LoRaWAN LPG sensor |
|--------------------------|--|
| Dimensions/Weight | 60mm x 105mm x 73mm / Weight 330g including Rochester gauge, 220g without |
| Housing Material | Acrylonitrile Butadienne Stryene (ABS) black moulded enclosure. |
| Operating Temperature | -20°C to +55°C Note 1 |
| Storage Temperature | +20°C to +25°C clean, cool, dry and ventilated. Note 1 |
| Humidity | 15 – 95% RH |
| Environmental Protection | IP68 – Outdoors |
| Frequency | 863 - 876MHz Nominal 868MHz ISM band. |
| Output power | Up to +14dBm (25mW) (as measured into the internal antenna on the PCB; internal antenna gain = - 3dB typ) |
| 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 1 G-Ex ia IIB T4 Ga [-20 < Ta < +55°C]. |
| 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 (Note 2) |
| Battery technology | 3.6V Lithium Thionyl Chloride Exi "Bobbin type" construction |
| Enclosure colour | Black |
| Manual Activation | Via android phone application and NFC interface |

Accessories

| | |
|-------------------|---|
| Fixing / mounting | Screw mounts (2) for wall mounting, tie wrap, & pole mount features are standard. |
|-------------------|---|

Conformity

Complies with current Directives for Electromagnetic compatibility and the Low voltage directive for product safety (LVD) 2014/35/EC and the Radio Equipment Directive (RED) 2014/53/EU. Compliance was demonstrated to the following specifications as listed in the official journal of the European Communities.

| | |
|------------------------------------|---|
| IEC EN 61000-4-2 | Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test |
| ETSI EN 301 489-1 V1.8.1 (2008-04) | Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements |
| ETSI EN 301 489-3 V1.6.1 (2013-06) | Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz |
| ETSI EN 300 220-1 V2.4.1 (2012-01) | Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods |
| ETSI EN 300 220-2 V2.3.1 (2009-12) | Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive |
| EN 60950-1 | Information technology equipment - Safety - Part1: General requirements |
| FCC compliance | TBD |
| RoHS 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 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).