TEKTELIC SEAL Ex

ATEX Rated LoRaWAN® GPS Tracker for Personnel Safety



The **TEKTELIC SEAL Ex** is a rugged, wearable **LoRaWAN®-connected GPS tracker** designed to ensure reliable location visibility and enhanced safety for personnel working in Hazardous locations. Combining precise GNSS positioning with Bluetooth® Low Energy (BLE) support, SEAL Ex enables near real-time outdoor tracking and continued location awareness indoors. With integrated safety features, extended battery life, and an IP67-rated enclosure with ATEX certification, SEAL Ex delivers a scalable and dependable solution for workforce safety, monitoring, and operational efficiency across high risk environments, including Zone 1 (gas).

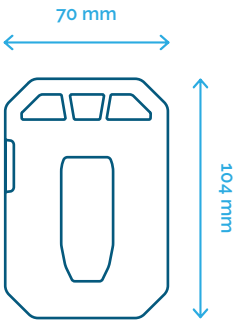
Sensing Functions

- GNSS
- ACCELEROMETER
- BLUETOOTH LOW-ENERGY (BLE) TRANSCEIVER
- PRESSURE
- AMBIENT TEMPERATURE (MCU THERMOMETER)
- BATTERY VOLTAGE GAUGE

Features

- Up to **11 months of battery life*** for long-term, maintenance-free wearable operation
- **ATEX Zone 1 certified** for safe operation in hazardous and explosive environments
- **Precise GNSS positioning** delivering accurate outdoor location tracking
- **Integrated Bluetooth® Low Energy (BLE)** for continued tracking and proximity awareness indoors
- User-activated **SOS / emergency** alert button with audio and visual indication
- **Fall and impact detection** to enhance worker safety and emergency response
- **Elevation detection** for multi-level location awareness
- **Optional harness detection** to monitor proper equipment usage
- **Rugged IP67-rated enclosure** suitable for harsh outdoor and industrial environments
- **GNSS datalogging** for historical location analysis
- **Comptatible with standard LoRaWAN® gateways and network servers** for broad interoperability
- **Quick and easy device onboarding & data viewing** using TEKTELIC **LeapX™** mobile application
- TEKTELIC **Kona Atlas™ support f**or payload encoding and decoding
- **Locus™ integration** for centralized device, data, and fleet management
- **Rapid deployment** for scalable industrial asset-tracking applications

* Actual battery life varies based on configuration, data rate, and operating temperature.



Technical and Functional System Specifications

General System Parameters	
Operational Temperature	-20°C to 52°C
Storage Temperature	-25° to 55°C
Operational Relative Humidity	5% - 95% Non-Condensing
Ingress Protection	IP67
Size	104 x 70 x 33.8 mm (Non-clip variant)
	104 x 70 x 57.8 mm (Clip variant)
Weight (without batteries)	100 g (add 15 g per battery)
Battery	2 x AA Energizer L91
Battery Life	
Default Reporting Period* @SF7	7 months
Default Reporting Period* @SF10	6 months
Wireless Parameters (LoRa)	
RF Power (Max)	15 dBm
RF Sensitivity	-137 dBm (SF12, 125 kHz)
Channel Plans	EU868, US915, AU915, AS923-1.-2.-3.-4, IN865, KR920
Antenna	Internal
LoRa Device Class	Class A
Specification Version	1.0.4
Sensor Specifications	
GNSS Features	2.5 m position accuracy**
	Support of GPS/QZSS, GLONASS, Galileo, BeiDou
	GNSSs Data logging up to 3,000 entries
	Geofencing up to 4 circular geofences
	TTFF: 60 sec cold start, 5 sec hot start
	Sensitivity: -164 dBm tracking and navigation -148 dBm cold start -157 dBm hot start
Accelerometer Sensitivity	Sample rate: 1, 10, 25, 50, 100, 200, 400 Hz Measurement range: +/-2, +/-4, +/-8, +/-16 g Precision: 16, 32, 64, 192 mg
BLE Sensitivity (0.1% BER)	125 kbps: -103 dBm 500 kbps: -98 dBm 2 Mbps: -91 dBm
Certifications & Compliance	
Regulatory	FCC, ISED, CE
Product Safety	Equipment Safety: IEC 62368-1 ATEX: EN IEC 60079-0 / EN 60079-11 IECEx: IEC 60079-0 / IEC 60079-11
Environmental	RoHS
Certification	IECEx, ATEX Zone 1 II 2 G Ex ia IIC T4 Gb

*Default reporting behavior is: 1 geolocation report every 15 minutes in normal mode and every 1 minute in emergency state
Emergency alarm status: every 15 minutes in normal state, every 1 minute in emergency state
Barometric pressure: every 15 minutes in normal state, every 1 minute in emergency state
**Under open sky conditions

TEKTELIC Communications is a premier supplier of complete LoRaWAN® IoT solutions. Our end-to-end systems combine network infrastructure, devices, and applications to enable easy, fast, and cost-effective deployment for the most demanding IoT challenges.