

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 location. 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)
TRANSCIVER



PRESSURE



AMBIENT
TEMPERATURE
(MCU THERMOMETER)

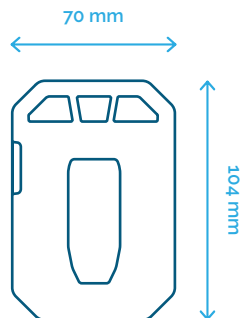


BATTERY VOLTAGE
GAUGE

Features

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

* 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-cell LiD

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
Accelerometer Sensitivity	Sensitivity: -164 dBm tracking and navigation
	-148 dBm cold start
	-157 dBm hot start
BLE Sensitivity (0.1% BER)	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 (RED)
Product Safety	IEC 62368-1
Environmental	RoHS
Certification	IECEX, ATEX Zone 1

*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.

