

TEKTELIC CLOVER

LoRaWAN® Soil and Ambient Environment Sensor

The TEKTELIC CLOVER Agriculture Sensor provides continuous, real-time monitoring of key **soil and environmental parameters**, including soil moisture, soil temperature, ambient temperature, humidity, and light intensity. **Designed with a rugged IP67 enclosure and long-life battery**, CLOVER enables data-driven optimization of irrigation, crop health, and landscape management. **Leveraging LoRaWAN® connectivity**, it delivers reliable long-range, low-power communication, supporting scalable deployment across agricultural and outdoor environments.



Sensing Functions



SOIL MOISTURE



SOIL TEMPERATURE



AMBIENT TEMPERATURE



AMBIENT RELATIVE HUMIDITY



MOUNTING ORIENTATION STATUS



MOVEMENT OR ORIENTATION CHANGE DETECTION

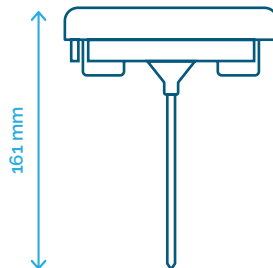
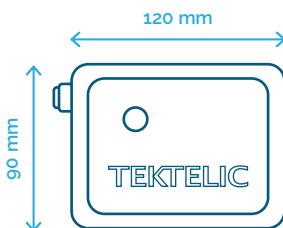


AMBIENT LIGHT

Features

- ✓ **11 year battery life*** enabled by an optimized low-power design for extended maintenance-free operation
- ✓ **Quick and easy device onboarding & data viewing** using TEKTELIC LeapX™ mobile application
- ✓ **Rugged IP67 enclosure** for reliable outdoor performance in agriculture and landscaping zones
- ✓ **Battery status indicator** for referencing battery life and fleet management
- ✓ **Integrated Soil moisture and Soil temperature** sensing for precision irrigation monitoring
- ✓ **TEKTELIC Kona Atlas™ support** for payload encoding and decoding
- ✓ **Ambient temperature and humidity monitoring** for comprehensive environmental insight
- ✓ **Locus™ integration** for centralized device, data, and fleet management
- ✓ **Compatible with standard LoRaWAN® gateways and network servers** for broad interoperability
- ✓ **Accelerometer for orientation and motion detection** notifying the user if device is impacted
- ✓ **Light (lux) measurement** to support crop and irrigation decision-making
- ✓ **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 +60°C |
| Storage Temperature | -40°C to +75°C |
| Operational Relative Humidity | 0% - 100%, Condensing |
| Ingress Protection | IP67 |
| Size | 120 x 90 x 161 mm (Sensor with Prongs) |
| Weight (including batteries) | 224 g |
| Battery | 1 x C Cell LTC (8500 mAh) |

Battery Life

| | |
|---------------------------------|----------------------------------|
| Reporting Period - 15 min @SF7 | 11 Years |
| Reporting Period - 15 min @SF10 | 7 Years (EU868), 5 Years (US915) |

Wireless Parameters

| | |
|-----------------------|---|
| RF Power (Max) | 22 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 | 1.0.2 |

| Sensor Specifications | Range | Accuracy | Resolution |
|---------------------------|--|----------------------|--------------------|
| Ambient Temperature | -20°C to 0°C | ± 0.5°C | 0.1°C |
| | 0°C to 60°C | ± 0.3°C | |
| Ambient Relative Humidity | 0-100% | +/- 4% | 0.5% |
| | 20-80% | +/- 2% | |
| Ambient Light | 0 to 65,535 lux | N/A | 1 lux |
| MCU Temperature | -20°C to 60°C | ± 5°C | 0.1°C |
| Soil Moisture | 1322 kHz to 1402 kHz (120% GWC to 0% GWC) | ± 1 kHz (10% GWC) | 1 kHz (10% GWC) |
| Soil Temperature | -15°C to +60°C | ± 2°C | 0.1°C |

Certifications & Compliance

| | |
|----------------|---------------------|
| Regulatory | FCC, ISED, CE (RED) |
| Product Safety | IEC 62368-1 |
| Environmental | RoHS |

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.