

The Land Sentinel is a dedicated real time remote monitoring device designed for the early detection of

any ground movement in all its forms, giving advanced warnings and alerts to any changes in ground conditions.

LAND SENTINEL

REAL-TIME LANDSLIDE MONITORING

Land Sentinel is an **immediately operational** “stand alone” **multifunction sensor**, which can be “screwed” directly into **soft ground / snow cover** (Snow Sentinel model) or inserted into predrilled holes when **ground conditions become harder** (Land Sentinel model).

Located within the body of these units are exclusive SmartSkin Sensors, a consolidated and proprietary technology developed by InSensus Project, which detect any movements in the substratum in the unit measure “micro strain”, this measurable data is transmitted real time to servers for continual monitoring

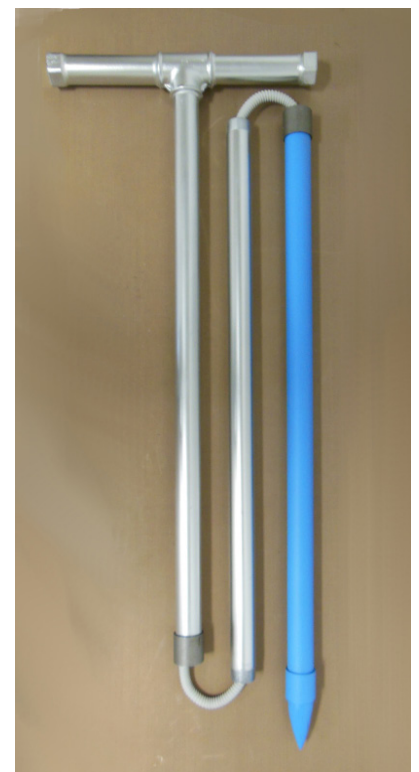
Housed within the section which remains above ground are the electronics and power module which can provide supply for up to 8 years continual monitoring before battery replacement.

The electronics are protected within a 304 stainless steel body and include the following additional sensing components.

Additional integrated sensors complete the picture:

Accelerometer	Monitoring ground vibration
Gyroscope	Trim Measurement
Magnetometer	Detect horizontal moment
Thermometer (1)	Surface thermal probe PT1000 100th of a degree

Thermometer (2)	In ground thermal probe PT1000 100th of a degree
SmartSkin Sensor	In ground micro strain sensors



LAND SENTINEL & SNOW SENTINEL

Multifunction sensor for real-time and remote monitoring of ground movements and for the early identification of landslides.

Material of the supporting and above ground structure: 304 stainless steel

Material of the terminal portion: PVC

Diameter of cylindrical structures (steel and PVC): 60 mm

Length of the underground portion: from 1 to 4 meters (superior on request)

Length of the above ground portion: 1 meter

Degree of protection: IP68

Strain resolution: +/- 1 microstrain

Combined trim sensor (accelerometer, gyroscope, magnetometer): inclination reading on three axes (accuracy of 0.02 °), vibration reading and trigger function for oversampling (full description on request)

Thermometer: Surface thermal probe PT1000 100th of a degree

Connectivity: radio 868 Mhz / 915 Mhz, LoRaWan protocol

Range: min. 7 Km line of sight

Power supply: lithium thionyl batteries, 3.6 V

Autonomy: min 8 years (sampling every 15 minutes and 8.5 Ah battery) and extensible

Installation time and activation: 30 minutes

Optional measurements: laser telemetry

Installation time and activation: 30 minutes

These units are relatively simple to install, at the desired locations holes of 60mm diameter will be required, to a maximum depth of 5m depending on site requirements. Once installed you simply switch them on and pair to the network via a mobile gateway. These units have up to 7km transmission range.

The monitoring units can be configured to transmit data real time every second or at intervals from minutes, hours or days, these monitors also have event alarm configurations which allow for immediate alarm notification and SMS messaging to EFR teams.

