Ontoto

Your data, anywhere

CRICKET IP68

Fully integrated low power NB-IoT telemetry

Overview

The Ontoto Cricket data logger designed to expediently operate in high-density environments that have limited space for equipment, with a considerable portion of the surroundings being underground. The data logger facilitates data collection through the utilization of a single vibrating wire sensor with high accuracy. Ontoto's Cricket Data logger will perform in the harshest conditions without the need for regular in-field visits.

Special Features

- Rated to IP68.
- 10+ years battery life.
- Device configuration with BLE via Ontoto Connect Android or iOS App.
- Remote configuration via downlink messages.
- Samples are automatically synced to the hour.
- Local alarming based on configurable thresholds.
- Optimised data usage with custom packet format to significantly reduce transmission costs.
- Real-time customer support and debugging via the Ontoto Connect App.

Certification

The Ontoto Cricket IP68 has been designed to comply with the Australian Standards:

- AS/NZS 3820:2009 for low voltage battery-powered devices

Site Expectations

- The site needs NB-IoT signal to take advantage of the remote telemetry feature of the device.
- The Ontoto Cricket IP68 is a scientific instrument that needs to be installed correctly in a secure enclosure.

Technical Specifications

Power Sources	• 3.6 V D-cell lithium battery pack
Battery	• Voltage: 3.6 V • Capacity: 14000 mAh • Temperature range: -55°C to +80°C • Long shelf life: less than 1% self-discharge rate at 25°C per year
Battery life*	• 10+ years *sampling every hour, transmitting once a day
Excitation voltage	• 3.3-12 V
On board barometer	• Range: 300-1250 mbar • Resolution: 0.01 mbar • Accuracy: ±0.3 mbar
Transmission	• LTE Cat NB1
Network communication protocols	• MQTT • CoAP
Memory	• 128 MB NAND flash memory, up to 2 million samples of local storage
BLE	• BLE 4.2
Clock accuracy	• ± 2 seconds per day, automatically resynced on a transmission
Operating temperature	• -40°C to +80°C
Dimensions	• 47 x 47 x 160 mm
Weight	• 1350 grams
Environmental	• IP68

Vibrating Wire Specifications

Frequency	
Frequency range	250 to 6500 Hz
Accuracy	0.001% of reading
Resolution	0.01 Hz
Frequency estimation method	Frequency domain
Temperature	
Thermistor type	Configurable, default NTC 3K
Accuracy	±0.1°C
Resolution	0.02°C

Software-as-Service
Free Ontoto Web Portal For User

The Ontoto Web Portal is a free and fully integrated cloud platform.

The features of this portal include:

- Remote configuration for all devices, for example configuring sampling and transmission periods, alarm thresholds and firmware updates.
- View raw and derived data in customisable charts.
- Custom charts can be configured to compare data between multiple data loggers.
- Generate and send customised reports according to client requirements.
- Data from grouped devices can be downloaded into a single CSV file.
- Static water level from Australian Height Datum (AHD), Below Top of the Column (BTOC) and custom datum is derived by using the water level above sensor and dip info entered via mobile app.
- Create and manage users.
- Track and notify device health:
  - » Data fault detection.
  - » Missed reporting cycle detection.
  - » Device malfunction detection.
  - » Site wakeup detection.
  - » Device status and battery, signal strength.
- Data forwarding to SCADA systems via FTP, SFTP and API.

Software-as-Service
Device Management Portal

Ontoto develops partnerships with all its clients to enhance their experience of managing their data. For clients with a larger number of users and devices, access is provided to Ontoto's free Device Management Portal. This provides all the functionality of the Ontoto Web Portal with additional features to enable advanced management of devices, including:

- Quality assurance.
- Firmware update management.
- Debug log Information.
- SIM and data usage management.
- Device production record.
- User management.
- Support ticket system.
- Billing system.

Ontoto Connect App
(iOS and Android)

The Ontoto Connect mobile app allows onsite management of the data logger to be undertaken wirelessly via BLE. There is no need to connect a laptop directly to the device.

The key features of the Ontoto Connect App are:

- **Data logger configuration**
  Configure the device name, sampling period, transmission period, and alarm threshold.
- **Firmware update**
  Available firmware updates can be downloaded from the Ontoto server and uploaded to the device.
- Sensor Setup
  A sensor can be assigned to the device by entering the serial number, allowing for calculation of water level according to the calibration coefficients.
- **Sensor Test**
  The device will scan through each connected sensor. The measurements of each sensor and any detected errors will be displayed.
- **Network Test**
  Tests for NB-IoT connectivity and signal strength and displays any detected faults.
- **Update the device location**
  The location of the device will be updated with the GPS coordinates of the phone and transmitted to the Ontoto Web Portal.
- **Read data log**
  The device stores all recorded data in persistent memory for redundancy and auditing purposes. The data log is processed into a CSV file.
- **Real-time debug log streaming**
  While using the app, the debug log received from the device is automatically streamed to the Ontoto server, allowing for seamless debugging during deployment.

Warranty

Ontoto Pty Ltd will warrant the entire product for 5 years from the date of delivery for parts and labour.