Ontoto

Your data, anywhere

Overview

The Ontoto Vibrating Wire is a compact, versatile datalogger with ultra-low power consumption and fully integrated cloud solution, ideal for long-term remote telemetry applications. The device has been designed to be easily installed at a greenfield site or as a retrofit. Configuration of the datalogger is completed using the Ontoto Connect App on a mobile phone.

Special Features

- 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 Vibrating Wire has been designed to comply with the Australian Standards:
- AS/NZS 3820:2009 for low voltage battery-powered devices

Site Expectations

- The device must be installed in a location with clear view of the sky to communicate with the satellite
- The Ontoto Vibrating Wire is a scientific instrument that needs to be installed correctly in a dry secure enclosure.

Power Options

The Ontoto Vibrating Wire has been designed to operate with lithium-based batteries power supply.

Technical Specifications

Power Sources	• 3×3.6 V D-cell lithium battery pack
Battery	• Voltage: 3.6 V • Capacity: 3 x 19000mAh • Long shelf life: less than 1% self-discharge rate at 25°C per year
Battery life*	• 10 years *sampling 8 channels every 4 hours, transmitting once a day
Excitation voltage	• 5-12 V
Transmission	• Satellite via L-band (1525-1660 MHz)
Memory	• 128MB NAND flash memory, up to 8 million samples of local storage
BLE	• BLE 4.2
Clock accuracy	• +/- 2 seconds per day, automatically resynced on a transmission
Operating temperature	• -20°C to +70°C
Dimensions	• 8 channels: 155 x 85 x 30 mm • 2 and 4 channels: 105 x 85 x 30 mm
Weight	• 8 channels: 200 grams • 2 and 4 channels: 140 grams

Vibrating Wire Specifications

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

Vibrating Wire Satellite Data Logger | Remote Telemetry Data Logging

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 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 network connectivity.
- **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 (excluding the batteries) for 5 years from the date of delivery for parts and labour.

Equipment Configuration

The Ontoto Vibrating Wire data loggers can be installed as a new installation or as a retrofit. All equipment required for the installation is provided.

New installation equipment

Data Logger	
Antenna	
Battery Pack	
Stainless Steel Enclosure	
Steel Post with Flange	
Earth Stake and clamp	
Earth Clip and Bonding Strap	
DIN Rail	

Retro fit installation equipment

Data Logger	
Antenna	
Battery Pack	
DIN Rail	

Full Set Up of Vibrating Wire