EDGE DEVICES - WIRELESS DATA LOGGERS

Analog 4-channel

LS-G6-ANALOG-4

The analog data logger admits most inputs from analog sensors, such as voltage, 4-20mA, potentiometer, FWB, thermistor or PT100, allowing it to easily connectany voltage, current, resistive, transducer such as load cells, strain gauges, pressure cells, pressure sensors, thermometers, flow sensors to the Internet. It transforms manual and sporadic data collection to a more regular and automatic process making it the most cost-effective way to capture data from any environment.

The analog datalogger is capable of transmitting data via long-range radio to a gateway connected to the Internet up to 9 miles / 15 kilometers away. One gateway can also support dozens of data loggers in the same network through a star or tree network topology.

FEATURES

Compatibility with analog sensors interfaces, such as:

- 0-10 V single ended/-10 +10 V differential
- 4-20mA
- Potentiometers
- Full weathstone bridge
- Thermistor
- PT100

Low-power, long battery life devices. Mostly does not require external power.

Robust and weather-proof box IP67

Long-range communication through LoRa network

SOFTWARE

User-friendly Android configuration app included.

Web browser software.

Single-gateway network setup with CMT Edge software (dataserver and radio server hosted in the gateway and data access through standard CSV downloads, FTP push, Modbus TCP, API REST and MQTT[1]).

Multi-gateway network setup with CMT Cloud software and advanced features with data access via standard CSV downloads, FTP push, API REST and MQTT push[1].

[1] MQTT available upon request

In terms of energy consumption, Worldsensing Edge dataloggers are autonomous battery-powered devices with C-size batteries that can last up to 10 years with minimal to zero maintenance required. The units are easy to deploy, very robust and do not require recasing as they already hold relevant certifications. The analog data logger is IP67 certified and tested from -40C to +80C.

It can also be used as a standalone logger for manual monitoring and can be easily configured and connected with a USB cable and an Android device.

APPLICATIONS

Structural Health
Ground anchors surveillance.
Measurement of axial forces in struts.
Load measurement in bearings and piles.
Crackmeters, extensometers.
Displacement in deck, joints, heavy-lifting, underpinning.
Process Control
Process measurements: pressure, temperature, displacement, weighing.
Pressure: level sensors, jacking, liquid settlement systems.

ADVANTAGES

Allows you to wireslessly connect to a wide catalog of industrial and geotechnical sensors with analog interface
Suitable for unattended, large scale projects
Very low maintenance equipment due to its robustness and low-power consumption
Easy configuration through the Worldsensing mobile application
Customer support from a expert team of geotechnical monitoring
Pioneer company in the field, long history in monitoring large-scale civil infrastructure

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TECHNICAL SPECIFICATIONS

EDGE DEVICE

Channels	4 channels (isolated)
Input types	Volatge, Current Loop, Potentiometer, Full Weatstone Bridge, Thermistor, PT100
Sampling rate[2]	Selectable from: 30 s, 1, 2, 5, 10, 15, 30 min, 1, 2, 4, 6, 12, 24 h
Time synchronization discipline by radio	Better than ±30 seconds
Battery type	4 x 3.6V C-Size user-replaceable, high energy density batteries[2]
Interfaces	Internal mini USB
Power Output per channel	5 V DC / 12 V DC / 24 V DC (up to 60 mA)
Warmup time	Configurable (65 s MAX)

INPUT TYPE SPECIFICATIONS

VOLTAGE

Measuring ranges	±10 V DC	
Acuracy	**-40° to 85° C**	**0 to 50°C**
±10V DC	±0.05% FS	-
±2V DC	±0.03% FS	±0.01% FS

CURRENT LOOP (2-3 wires)

Measuring range	4-20 mA
Accuracy (-40 to 50°C)	± 0.05 % FS

POTENTIOMETER (POT)

Accuracy (0 to 50°C)	± 0.02 % FS

FULL WEATSTONE BRIDGE (FWB)

Accuracy (0 to 50°C)	± 0.1 % FS

THERMISTOR

Accuracy (0 to 50°C)	± 0.2 % FS

PT100

Accuracy (50°C)	± 0.8° C

[2] Recommended batteries: Saft LSH 14

MECHANICAL

Box dimensions (WxLxH)	100 x 200 x 61 mm
Overall dimensions	145 x 220 x 61 mm
Operating temperature	-40° C to 80° C
Housing material	Aluminum Alloy
Weather protection	IP67
Weight (excluding batteries)	1.1 kg
External Antenna	114 mm

SOFTWARE

Device configuration	Android Mobile Aplication
App advanced functionalities	Auto-setup, configure the threshold used to discard readings, take samples in the field and signal coverage test for an easy installation.
Sensor-specific App functionalities	Warmup time Output power
Data and network management	CMT Edge for single network setup CMT Cloud for multi-gateway setup

MEMORY

Memory Structure	Circular Buffer
Maximum Memory Records	130 000 readings (time and 4 sensors)

SENSOR SPECIFIC APPLICATIONS

DG Slope	Compatible with Serial HD IPI, chains of upt to 16 inclinometers.

BATTERY LIFE ESTIMATION*

Channels & Sampling	Current @12V@24mA	Current @24V@24mA	Voltage @12V@24mA	FWB@5V@0.7kΩ	FWB@5V@1.5 kΩ
Warm uptime	1 second	1 second	1 second		
1 CH 5 min.	6 months	4 months	5 months	1.5 years	1.5 years
1 CH 6 hours	>10 years	>10 years	>10 years	8.5 years	>10 years
4 CH 5 min.	1.5 months	39 days	2 months	1.5 years	7 months
4 CH 6 hours.	8 years	6.6 years	>10 years	8.5 years	>10 years

**Estimations for 4 x saft LSH 14 batteries. Considering laboratory.*

ACCESSORIES

LS-ACC-CELL-1C	Saft LSH 14 C-size spiral cell
LS-ACC-MUSB-C	Data logger mobile cable
LS-MEC-MP-001	External mounting brackets (set of 2) for wall mounting
WS-ACC-POLE-PL8	Plate for pole mounting
WS-ACC-U50	U-bolts and nuts for a pole diameter of less than 50 mm
WS-ACC-U35	U-bolts and nuts for a pole diameter of less than 35 mm

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