



Analog 4-channel

EDGE DEVICES - WIRELESS DATA LOGGERS LS-G6-ANALOG-4-MON

The Trimble® Analog Data Logger is a 4-channel device that admits most inputs from analog sensors, allowing it to easily connect any voltage, current, resistive, transducer such as load cells, strain gauges, pressure cells, pressure sensors, thermometers, flow sensors to your monitoring systems. 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 data logger is capable of transmitting data via long-range radio to a gateway connected to the Internet up to 9 miles/ 15 km. away. One gateway can also support dozens of data loggers in the same network, depending on the reporting period, through a star or tree network topology.

In terms of energy consumption, Trimble data loggers are autonomous battery-powered devices with C-size batteries that can last up to 10 years with minimal to zero maintenance required.

The analog data logger is IP68 certified and tested from -40 °C to +80 °C. The analog data logger 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.





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FEATURES

- ▶ Compatibility with digital sensors like:
 - ± 10 V single ended and differential
 - 4–20 mA
 - Ratiometric and 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.
- ▶ User-friendly Trimble Geotech app for Android included.
- ▶ Web browser software for network, device and data management.
- ▶ Data processing with formulas to convert raw readings into engineering unit values.

ADVANTAGES

- ▶ Allows you to wirelessly connect to a wide catalog of industrial & 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 Trimble Geotech app.
- ▶ Customer support from a expert team of geotechnical monitoring.
- ▶ Pioneer company in the field, long history in monitoring large-scale civil infrastructure.

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.





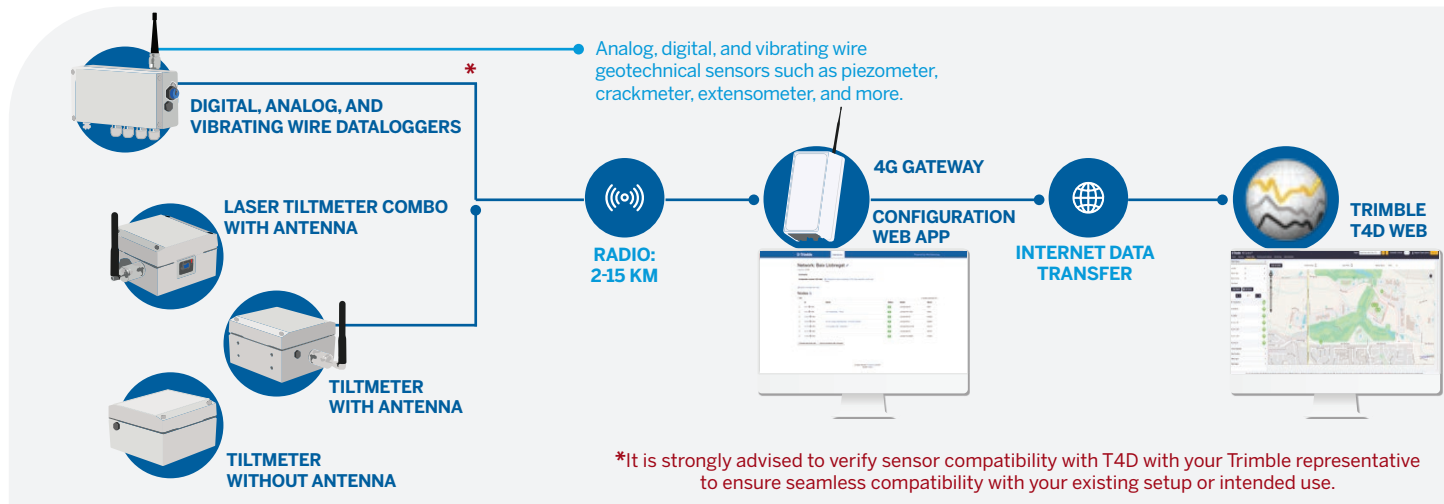
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GENERAL SPECIFICATIONS			
Channels	4 channels (isolated)		
Input types	Voltage, Current Loop, Potentiometer, Full Weatstone Bridge		
Reporting period*	Selectable from: 30 s, 1, 2, 5, 10, 15, 30 min, 1, 2, 4, 6, 12, 24 h		
Time synchronization discipline by radio	Better than ±30 seconds		
Battery type	4 x 3.6 V C-Size user-replaceable, high-energy density batteries ¹		
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)		
Device configuration	Trimble Geotech app for Android included		
App advanced functionalities	<ul style="list-style-type: none">Field sample collection and signal coverage testing when the sensor is connected to the app.Wiring recommendations to assist on-site sensor installation.		
Sensor-specific app functionalities	Warmup time configuration (ms or s). Output power options.		
INPUT TYPE SPECIFICATIONS			
Voltage ²	Measuring ranges: ±10 V DC		
	Accuracy	-40° C to +85° C	0° C to 50° C
	±10V DC	±0.05% FS	±0.05% FS
	±2V DC	±0.03% FS	±0.01% FS
Current loop (2-3 wires)	Measuring range: 4–20 mA		
	Accuracy	-40 °C to +50 °C	± 0.05 % FS
Ratiometric and potentiometer signals	Accuracy	0 to 50 °C	± 0.02 % FS
Full wheatstone bridge	Accuracy	0 to 50 °C	± 0.1 % FS
Thermistor	Accuracy	0 to 50 °C	± 0.2 % FS
PT100	Accuracy	50°C	± 0.8° C
MECHANICAL			
Box dimensions (W x L x H)	100 x 200 x 61 mm (3.9 x 7.9 x 2.4 in)		
Overall dimensions	145 x 220 x 61 mm (5.5 x 8.67 x 2.4 in)		
Operating temperature	-40 °C to +80 °C (-40 °F to +175 °F)		
Housing materials	Aluminum alloy		
Weather protection	IP68 ³		
Weight (excluding batteries)	1.1 kg		
External antenna	114 mm		
MEMORY			
Memory structure	Circular buffer		
Maximum Memory Records	130,000 readings (time and 4 sensors)		
RADIO SPECIFICATIONS			
Radio band	ISM sub 1 GHz		
Operating frequency bands	Adjustable		
Bidirectional communications	Remote sampling rate change / clock synchronization		
Maximum link budget	151 dB / 157 dB		
Radio configuration	LoRa / LoRaWAN		
Radio range	Range open sight	15 km	
	Range city street	4 km	
	Range manhole in a city street	2 km	
	Tunnel	4 km	

IoT-based Geotechnical Monitoring

SYSTEM INSTALLATION



- 1 Recommended batteries: Saft LSH 14.
- 2 Tests performed using differential voltage measurements.
- 3 Water ingress protection also depends on the quality and condition of the cable coming from the sensor. Additionally, the cable's curvature near the cable gland can reduce this protection.

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