



ACCELEROMETER

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MOVE SOLUTIONS ACCELEROMETER

The sensor can acquire the acceleration on the three axes, using a high-end MEMS accelerometer.

Threshold operation with scheduled acquisitions

The sensor acquires 10 seconds of acceleration if a threshold is exceeded on one of the three axes (3 minutes of transmission time).

At the same time, the sensor acquires acceleration at regular intervals for a recording time of 3 minutes (transmission time 40 minutes). Both the threshold and the scheduled sampling interval can be selected by the user through the web interface provided.



APPLICATIONS

Dynamic monitoring of civil structures:

- Bridges
- Dams
- Buildings
- Metal structures
- Skyscrapers
- Historical architectures
- Working sites
- Underground works
- Tunnels

Pairing with LoRaWAN Gateway



DATASHEET

Technology	MEMS technology – triaxial
Default* Resolution	14bit (250µg, 500µg, 1mg)
Nominal** Resolution	20bit
Default* Range	±31.25mg, ±62.5mg, ±125mg
Nominal** Range	± 2g, ± 4g, ± 8g
Cross Axis Sensitivity	1%
Default operation	Threshold exceeding acquisition and scheduled acquisition
Noise density	25 µg/√Hz
Radio channel	LoRaWAN communication protocol
Frequenza canale radio	ISM 868Mhz
Radio coverage	1km (line of sight device-gateway)
Working temperature	-30°C/+85°C
Battery	1 Lithium Battery type "D" 19Ah 3.6V
Battery life	Estimated battery life of 2 years (10 over-threshold events per hour and 2 scheduled acquisition per day, in optimal conditions)
Waterproof class	IP67
Size	75 x 80 x 57 mm
Weight	500 g
Installation	Two-point fixing with M6 * 25mm dowels
Case material	GD-AlSi12 alloy
Corrosion resistance	> 1000 hours in salt spray

* Nominal: the Nominal parameter is the factory parameter of the MEMS accelerometer

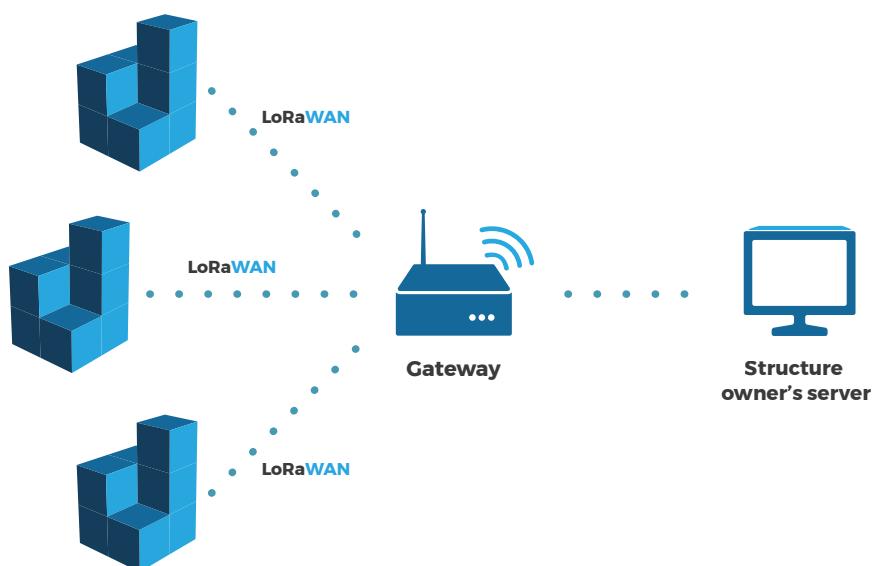
** Default: the Default parameter is the firmware setting developed by Move to maximize the signal to noise ratio and the signal transmission times on LoRaWAN protocol on the European 868 Mhz band



NETWORK SYSTEM

The data transmitted by the sensors is collected first by the Gateway through the LoRaWAN protocol and after sent to a server and database system via Cellular connection.

Each monitoring site is equipped with at least one gateway, which transmits the data through an internet connection (LTE, 3G, GSM or Ethernet) to a set of servers that manage the LoRaWAN protocol and the data received from the sensors. The data is then written into a DB system for storage, and it can be viewed and analyzed through the Cloud platform provided. If the customer uses his own platform for data analysis, these can be extrapolated from the servers through a REST API service.



The Cloud platform displays data anywhere and on any device, to constantly monitor the status of the structure.

Through various graphs, it is possible to view the oscillation trends and mathematically relate them to each other. Moreover, the software verifies any change in the structure over time by monitoring its degradation over the months and years.