

ACCELER'O



The **ACCELER'O** sensor is based on a motion sensor and targets industrial preventive maintenance applications with a high vibration range.

APPLICATIONS

- Detection of acceleration drift on civil engineering structure or industrial equipment

BENEFITS & KEY FEATURES

- LoRaWAN®, Class A
- Easy to use and deploy
- Measurements and data transmission at a regular period or upon event, or acceleration delta between 2 measures
- 10 years autonomy (standby sample frequency of 1Hz, 1 frames/day)
- Measurement range and accuracy :
 - 3 axis (x, y, z) Acceleration :
 - Range $\pm 400g$ ($\pm 3.2g$ accuracy)
 - Range $\pm 200g$ ($\pm 1.6g$ accuracy)
 - Range $\pm 100g$ ($\pm 0.8g$ accuracy)
 - Sampling frequency up to 1kHz
- IP67

CERTIFICATION

- RED, UKCA, RoHS



ACCELER'O is an autonomous LoRaWAN® IoT device. It monitors the acceleration of the equipment on which it is installed.

It will send statistical information on the measured acceleration and allows to monitor potential drifts.

It can also log shock events and send alarms or send batch frames periodically.

Battery powered, the sensor has a life of over 5 years when acceleration threshold crossed every 10 minutes and 12 radio transmission per day.

ACCELER'O is provided with 2 magnets with very high force (2x150N), but it can also be fastened using:

- screws,
- a pole mounting bracket,
- an adhesive strip.

ACCELER'O is suitable for outdoor installations thanks to its IP68 enclosure, and its anti-UV treated material.

Installation and commissioning are quick and easy. **ACCELER'O** is equipped with:

- a magnetic switch for activation or deactivation;
- an NFC identification tag (product code, serial number, batch number).

ACCELER'O is delivered with a default configuration that can be reconfigured using the downlink, according to its ZCL application layer, for example:

- threshold of acceleration detection;
- number of confirmations before alert;
- periodicity on life frame.

THE LARGEST IOT PRODUCTS RANGE FOR YOUR PROJECT

WATTECO is a European leader in the design and manufacture of smart IoT devices to suit all remote reading and data collection solutions.

WATTECO is a LoRa Alliance® member.

TECHNICAL DATA

RADIOFREQUENCY	Frequency (MHz)	Transmit Power (dBm)	Receiver Sensitivity (dBm)
	EU: 863-870	+14	-140

FIRMWARE

Protocol	LoRaWAN®, Class A
Activation method	Activation by Personalization (ABP) or Over-The-Air Activation (OTAA)
Data encryption	AES128
Application layer	ZCL (ZigBee Cluster Library) – to be interpreted by the remote server
Measurement cycles	Continuous measurement (1Hz by default under the acceleration threshold)
Transmission cycles	Configurable from 10 minutes to 24 hours
Alarm thresholds	Battery voltage: range 0.1 to 3.6V in 0.1V steps (3V by default)

ACCELERATION MEASUREMENT

Range	±100g / ±200g (default value) / ±400g
Accuracy	± 0,8g (±100g) / ± 1,6g (±200g) / ± 3,2g (±400g)
Sampling frequency *	Standby frequency 0,5...10Hz / Acquisition frequency 50...1000Hz

POWER SUPPLY

Voltage	3.6V / 360mAh – Non replaceable lithium battery
Autonomy in a range of +10°C to +25°C	10 years: acceleration threshold crossed every 10 minutes & 1 transmission per day

USER INTERFACES

NFC Tag	Product code, serial number, batch number
LED	Sensor status
Magnetic switch	Reset, On/Off

ENCLOSURE	Size (mm)	Fastenings	IP rating	Fire resistance
UV-resistant ASA plastic	110,4x75x42 (with magnets)	Magnets (supplied) pole mounting bracket or adhesive strip (not supplied)	IP67	UL94-V0HB

ENVIRONMENT	Operating conditions	Storage conditions
	-20°C to +60°C +0%rH to +95%rH (non condensing)	+10°C to +30°C +20%rH to +60%rH

DIRECTIVES & STANDARD

Radio Equipment Directive 2014/53/EU, RoHS



* Sampling frequency will impact the lifespan of the product, it is possible to set the Standby sampling frequency to more than 10Hz, but this will have a huge impact on battery lifespan (going from 10 years to less than 1 year). For specific configuration and lifespan calculation, please contact us: <https://support.watteco.com/support-form/>

PRODUCT NUMBER

REFERENCE	DESCRIPTION
50-70-197	LoRaWAN® ACCELER'O SENSOR