VIBRATION & IMPACT SENSOR · LORAWAN



Square Impact

Rugged impact, vibration and tilt sensing with the analysis done on the device, for predictive maintenance, shelf stability and structural monitoring over LoRaWAN.

- Impact, vibration and tilt on three axes
- Spectrum analysis on board · wake-on-impact
- LoRaWAN · NFC · Wi-Fi positioning
- 4,000 mAh · 10+ years battery
- Built to last: IP68 & IK06

OVERVIEW

Square Impact measures impacts, vibration and tilt on three axes and analyses them on the device. It tells you how hard something was hit and from which direction, whether it has tilted, and how the vibration is spread across frequencies: the fingerprint that reveals a worn bearing or a loose mounting. It reports on a schedule, on an impact, or when that fingerprint changes noticeably, so you get the signal rather than a stream of raw data.

Typical uses are vibration-based preventive maintenance on machinery, stability alerts on warehouse racking, tilt and stress on beams, and handling and shock analysis in transit. A temperature sensor and Wi-Fi geopositioning are built in. IP68 and IK06, a 4,000 mAh battery for over ten years, mounted with the included screw frame, adhesive or cable ties. Downloadable VSM apps add new analyses later.

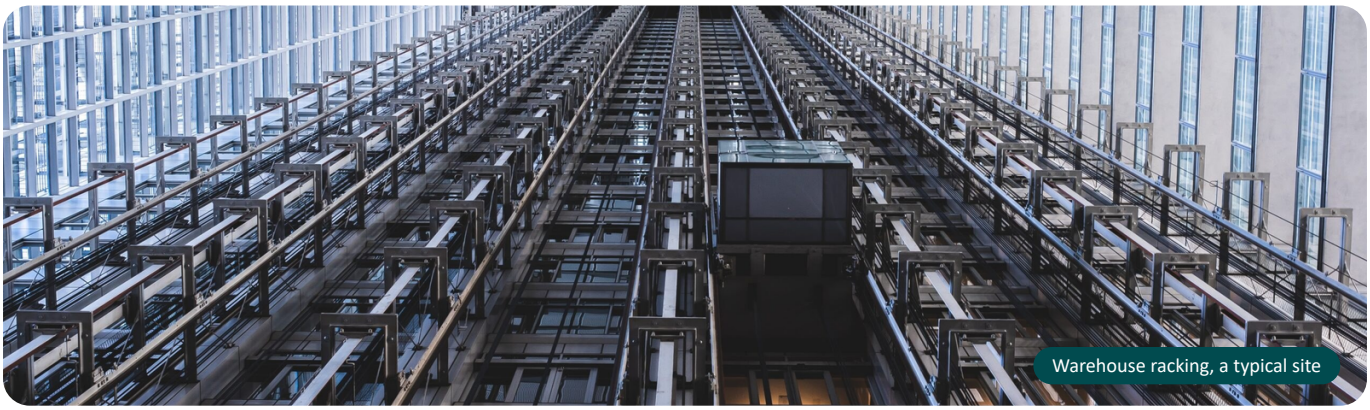
WHY IT MATTERS

Analysis on the device
Peak velocity, direction, tilt and a vibration spectrum are computed on board and sent as a few bytes instead of raw data streams.

Knows when something changed
Energy-change detection reports when the vibration profile shifts, not on every sample.

Racking, beams, machines
Stability alerts, tilt and stress monitoring, vibration-based preventive maintenance.

Built for the plant floor
IP68, IK06, ten-year battery; screw frame included, adhesive or cable-tie mounting too.



Warehouse racking, a typical site

Specifications are subject to change without notice in the interest of continuous product improvement.

Specifications

SENSING

Sensor	3D accelerometer ±2–16 g, temperature ±2 °C
Analysis	Peak velocity per axis, tilt ±90°, vibration spectrum 1–256 Hz in octave bands
Modes	Interval, motion, energy change, wake-on-impact

CONNECTIVITY

Protocol	LoRaWAN 1.0.4, Class A, OTAA
Frequency	EU868 · US915 · AU915 · AS923-1 · AS923-2 · KR920 · IN865
Configuration	NFC (Android) and over the air; alternative VSM apps through the Hugin app or over LoRaWAN
Positioning	2.4 GHz Wi-Fi geopositioning via cloud service
Memory	Built-in data memory

POWER AND HOUSING

Battery	Built-in $LiMnO_2$, 4,000 mAh, 10+ years
IP rating	IP68
Impact rating	IK06
Operating temp	–20 to +60 °C
Dimensions	67.2 × 60.4 × 13 mm
Weight	61 g
Mounting	Screw frame included; adhesive or cable ties

TYPICAL USE

Industrial sites and structures where the vibration or impact pattern is the signal.

- Vibration-based maintenance of motors, fans and pumps
- Stability and impact alerts for warehouse racking
- Tilt and stress in beams and structures
- Machine usage hours from vibration
- Shock and handling of goods in transit
- Theft and movement alerts for high-value assets

WHAT EVERY SENSOR SHARES

Years on one battery

Ultra-low-power design, and cloud-side processing where it saves energy. Battery life depends on the sensor and how often it reports: well over ten years for most sensors.

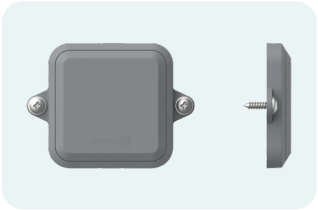
Configured over the air

Every sensor takes its settings over the air, so a change of reporting interval or threshold never means a ladder. Square, Square Xtreme, Puck and Prism can also be set up on site with an Android phone over NFC, and they run downloadable VSM apps: a sensor already on the wall can be given a new task without touching the hardware.

IN THE BOX · MOUNTING



Adhesive or cable ties



Screws, with the included frame

In the box

Square Impact and the screw mounting frame.

Mounting

Screw frame included; adhesive or cable ties

MORE INFORMATION

Product page and downloads: sensative.com/sensors/square-impact
Manuals, payload decoders and integration guides: public.yggio.net/docs
Questions and quotes: sales@sensative.com · Buy: shop.sensative.com or a Sensative reseller

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