

WISEPOWER



WISE-IIOT

Vibrational monitoring sensor
for the structural health of
industrial components



Datasheet

Energy Harvesting Technology



WISE-IIOT

The WISE-IIOT sensor is a reliable and easy-to-install solution designed for dynamic and static monitoring of the structural health of industrial components. It can measure vibrations, shocks, temperature, and humidity; it is self-powered thanks to solar and vibrational charging sources and is completely wireless.

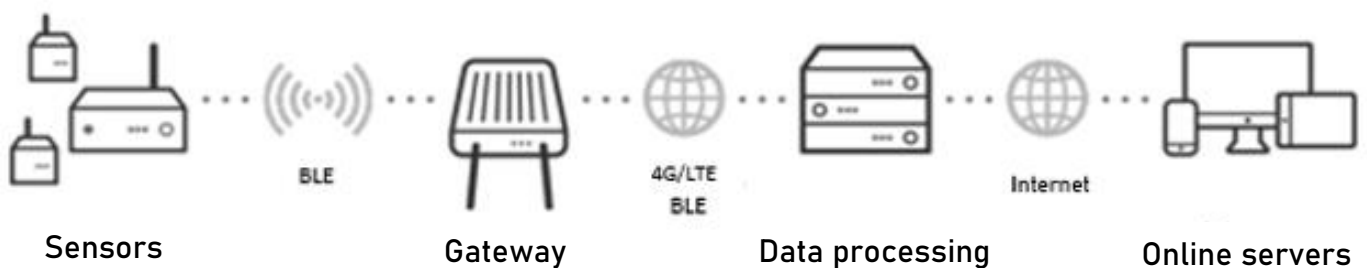
The system operates independently thanks to the BLE connection with the gateway, a central control unit that communicates the data received from the sensor to a dedicated server, managing the data flow of dozens of sensors to create a monitoring network.

The device is equipped with two energy recovery technologies, solar and vibrational, as power sources. The combination of both, along with a backup battery, ensures energy autonomy.

All measurement modes can be parameterized remotely:

1. ODR for data acquisition
2. Axes to acquire
3. Number of samples
4. Sampling frequencs
5. Threshold and range for shocks

The monitoring system consists of sensors that make up the network nodes, a gateway as the control unit, and a dedicated server.





NOTE

The gateway is identified by the code: GTW-001.

Features

- High precision measurement
- Wireless technology
- Energy recovery
- Modular system
- Small size and weight

Economic and logistical advantages

- Remot monitoring for unreachable sites
- Easy entry for new sensors in the network
- Reduction of maintenance costs thanks to reduced dimensions and weight, as well as the long autonomy
- Risk reduction and reliability

SPECIFICHE MECCANICHE E AMBIENTALI

Box	Dimension (LxWxH): 115,1x55,58x63,64
	Weather resistant
IP Rating	IP67
Operating temperature	-40°C a 85°C
Certifications	CE Directive
	2014/30/UE - Electromagnetic compatibility directive (EMC)
	2011/65/CE - RoHS Directive
	2009/125/CE - Ecodesign Directive



	Protection class III (ELV)
	UN 38.3 (Battery)

TECHNICAL SPECIFICATION

Accelerometer

Accelerometer technology	MEMS technology
Range of measure	± 2g / 4g / 8g / 16g
Zero-g Offset	± 25mg
Zero-g Offset variation vs Temperature (°C)	0,25mg
Non-Linearity	0,5% of FS
Cross Axis Sensitivity	2%
Sensibility variation vs Temperature (°C)	0,01% (xy); 0,03% (z)
Noise	130 µg/√Hz

Umidity and temperature sensor

Umidity sensor accuracy	± 3% di RH, 0-80% di RH
Temperature sensor accuracy	±0.4 °C (max), -10 to 85 °C
Operating temperature	-40°C to +125 °C
Operating voltage	1.9 to 3.6 V
Consumption	150 µA active current
	60 nA stand-by

CONSUMPTION @3.3 V

SLEEP mode (shock ON)	9 µA
Data acquisition	3 a 4 mA
Transmission	8,2 mA @6dBm