

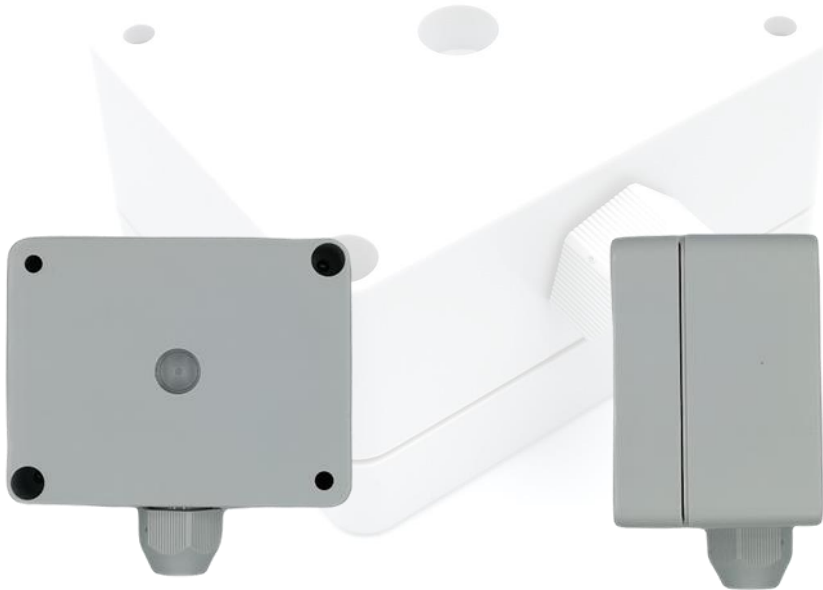


PRODUCT DATASHEET

LoRaWAN SHAKING SENSOR

OVERVIEW

NetOP Shaking Sensor is a long-range wireless sensor. It sends data when it detects any movement/shaking So it can be monitored whether something or somebody is stable/moving or not. This sensor is fully compatible with LPWAN technology by using NB-IoT (Narrowband-IoT).

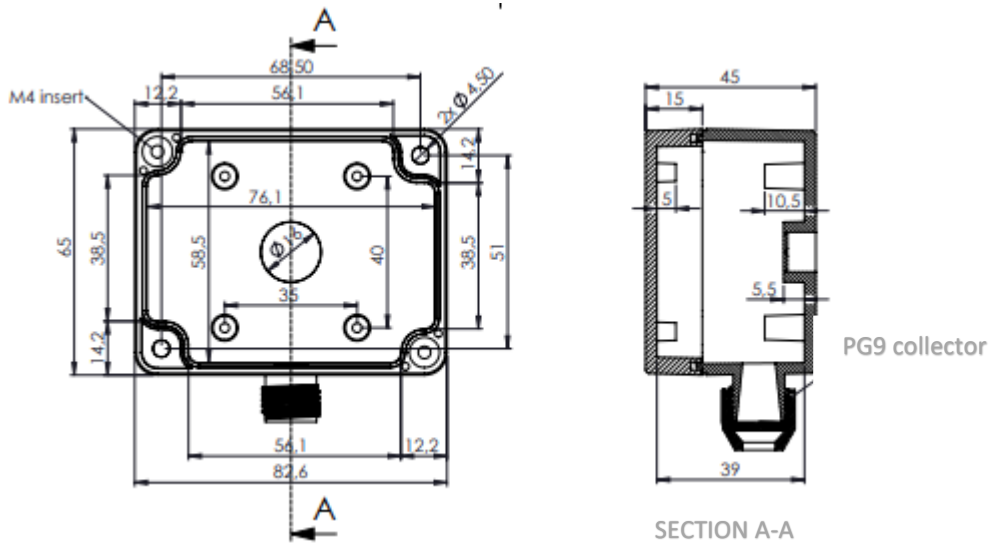




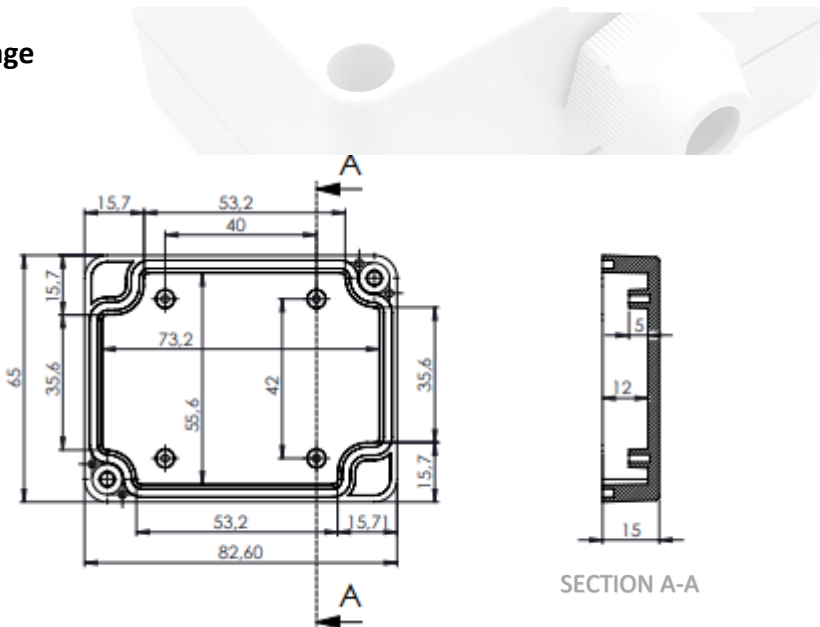
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TECHNICAL DRAWING

Box With Terminal Seal



Cover Page





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KEY FEATURES

Real Plug & Play

Easy to mount & install

Compatible with LoRaWAN™ specification

Maintenance free

Secure communication (AES-128)

Ultra -Low Power Consumption

Certificate: LoRaWAN™

COMMUNICATION SPECS

Compatible with LoRaWAN Specification 1.0.3

The sensor uses Low Power Wide Area Network-LPWAN technology (LoRa) for connectivity

Compliant with Low and High Frequencies (AS923, AU915, CN470, CN779, EU433, EU868, IN865, KR920, RU864, US915 MHz ISM bands)

Supports High power and Low power LoRa RF applications: - Up to +22 dBm at US915 and AU915, - Up to +14 dBm elsewhere

Ultra -low power consumption. Excellent long-term stability.

170 dB maximum link budget

Radio Performance: High RX sensitivity down to -148 dBm

Full ADR, OTAA and ABP support

Long range wireless data transmission



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MECHANICS

Housing: ABS (IP65 or higher)

Dimensions: 82.5 x 65 x 45 mm

Operating Temperature: -40°C to 85°C

POWER SUPPLY

AA Battery 3.6 V Li-SOCI2-Saft LS 14500

INDICATORS

Status LED (on board)

SHAKING SENSOR SPECIFICATIONS

Measurement Range: ± 2.0 g

Accuracy: 0.061 mg

Resolution: For X, Y, Z axes m/s^2

Data Transmission Period: Every Detection

CERTIFICATIONS & RELIABILITY

EN 60950-1;2006/A2:2013

ETSI EN 301 489-17 V3.1.1(2017-02)

EN 55032:2015



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LoRaWAN FRAME FORMAT

Standard packet size: 24 Bytes

00-01-02-03-04-05-06-07-08-09-10-11-12-13-14-15-16-17-18-19-20-21-22-23

1 byte: Connection Type(1->LoRaWAN)

INFORMATION

012345678: Device ID

|1|: Indicates the type of connection the device uses.





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LoRaWAN SHAKING SENSOR PROTOCOL

01-28-01-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-01-2C-25-01-12-BB-BB

01: Selected Slot (1 byte)

28: Shaking Sensor Board ID (1 byte)

01: Shaking State On

YY-YY: Empty Data (14 bytes)

012C: Sleeping Period 0x012CH -> 300D Seconds (2 bytes)

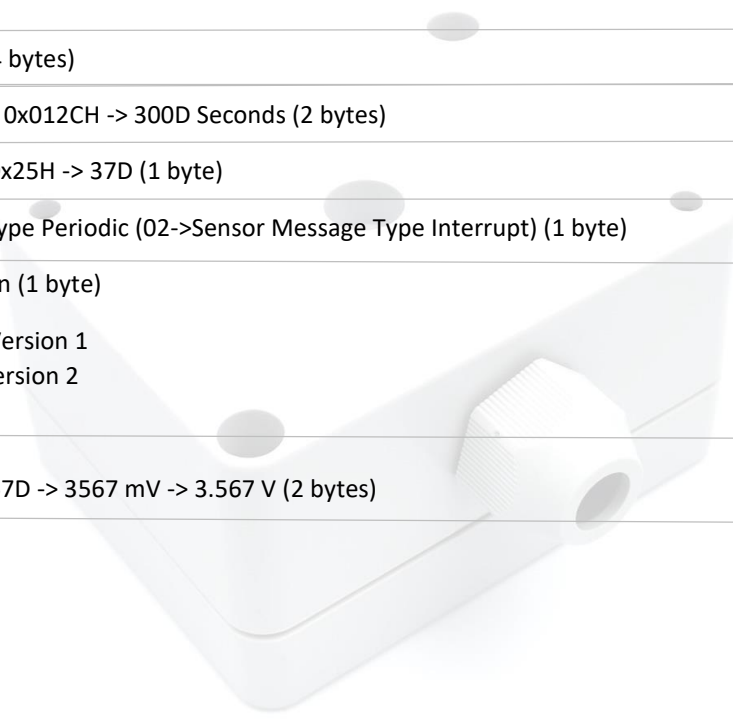
25: Payload Counter 0x25H -> 37D (1 byte)

01: Sensor Message Type Periodic (02->Sensor Message Type Interrupt) (1 byte)

12: Sensor FW Version (1 byte)

- i.Main Version 1
- ii.Sub Version 2

0DEF: 0x0DEFH -> 3567D -> 3567 mV -> 3.567 V (2 bytes)





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INFORMATION

01: Selected slot.

28: This slot determines the sensor type.

01: There is movement when 01 comes.

YYYY: Dummy data

012C: Sleep interval along 300S.

25: Data is live or not. Each measurement is incremented by degree.

01: When the sensor message 02 comes, it enters the interrupt.

12: Sensor firmware version 1.2

0DEF: Outputs the measurement in Volt (3.567V).

