



PRODUCT DATASHEET

NB-IoT 2 PLANE TILT SENSOR

OVERVIEW

NETOP 2 Plane Tilt Sensor is a long -range wireless sensor that can be used to monitor the angle between devices. The devices give two separate outputs of the slope angle as Slope X and Slope Y (Slope X +10 degrees and Slope Y -15 degrees). This sensor is fully compatible with technology by using NB-IoT (Narrowband-IoT).

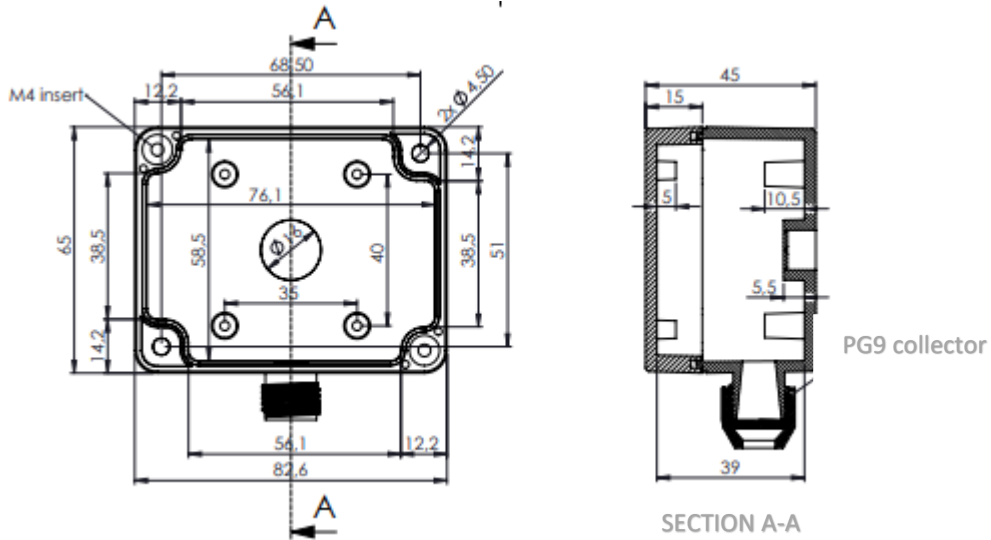




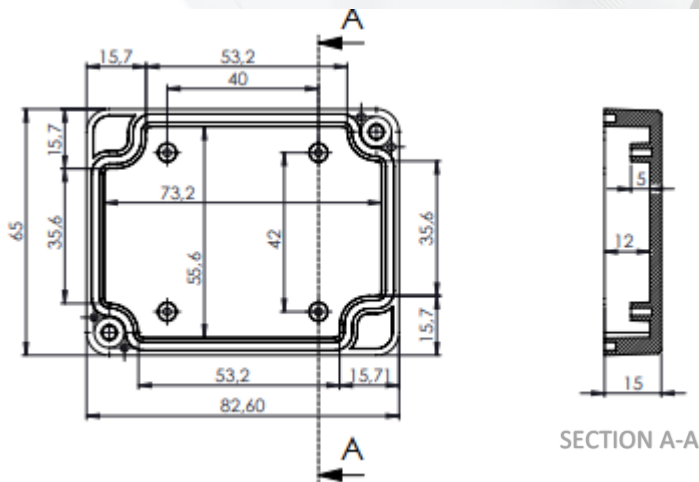
PRODUCT DATASHEET

TECHNICAL DRAWING

Box With Terminal Seal



Cover Page





PRODUCT DATASHEET

KEY FEATURES

Real Plug & Play

Easy to mount & install

Maintenance free

Excellent Extended Range in Buildings

Easy deployment utilizing cellular system

Micro SIM (default)

Ultra-Low Power Consumption

Certificate: RoHS

COMMUNICATION SPECS

NB-IoT (Narrowband-IoT)

Supported bands including B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B72/B73/B85

Internet Protocol Feature: Support MQTT

Extended Coverage: 10-15km with 164 dB maximum coupling loss (MCL)

Antenna Types: Internal (default) or External (depend on request) Antenna

MECHANICS

Housing: ABS (IP65 or higher)

Dimensions: 82.5 x 65 x 45 mm

Operating Temperature: -40°C to +85°C



PRODUCT DATASHEET

POWER SUPPLY

USB/ LIPO Charge / Non-Chargeable Battery

INDICATORS

Green Red Status LED (on board)

2 PLANE TILT SENSOR SPECIFICATIONS

Measurement Range: ± 2.0 g

Accuracy: 0.061 mg

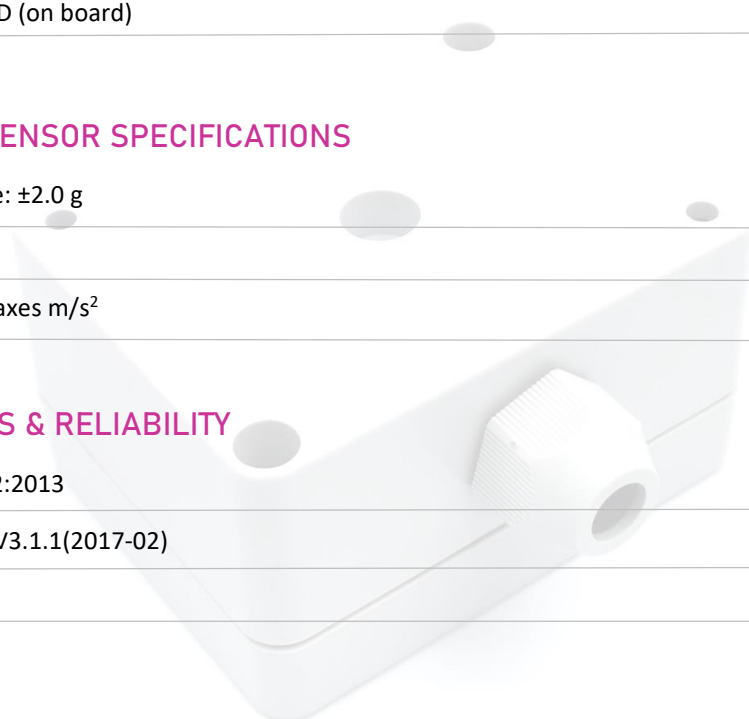
Resolution: For X, Y axes m/s^2

CERTIFICATIONS & RELIABILITY

EN 60950-1;2006/A2:2013

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

EN 55032:2015





PRODUCT DATASHEET

NB-IoT FRAME FORMAT

Packet Size: 60 Byte

012345678|1|000102030405060708091011121314151617181920212223

012345678 bytes: Device ID

1 byte: Connection Type(1->NB-IoT)

INFORMATION

012345678: Device ID

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





PRODUCT DATASHEET

NB-IoT 2 PLANE TILT SENSOR PROTOCOL

01-26-00-59-FF-E8-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-YY-01-2C-25-01-12-0D-EF

01: Selected Slot (1 byte)

26: 2 Plane Tilt Sensor Board ID (1 byte)

0059: 0x0059H -> 89D -> (2 bytes) -> 0.89 X Degree

FFE8: 0xFFE8H -> 65512D -> (2 bytes)

- i. FFE8 – FFFF -> -0x0017H -> -23D -> -0.23 Y Degree

YY-YY: Empty Data (12 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)

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

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



PRODUCT DATASHEET

INFORMATION

01: Selected slot.

26: This slot determines the sensor type.

0059: Indicates the 0.89degree angle on the X-axis

(The value 0059H is converted to decimal. The result 89D.The resulting decimal value is divided by 1000.This value returns the result in degree for the X-Axis.)

FFE8: Indicates the 0.65degree angle on the Y-axis

The value FFE8H is converted to decimal. The result -23D.The resulting decimal value is divided by 1000.This value returns the result in degree for the Y-Axis.)

YYYY: Dummy data (12 bytes)

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).

