

BeanDevice® 2.4GHz ONE-TH

Wireless IIOT Temperature & humidity sensors | built-in datalogger

PRODUCT VIDEO



APPLICATION VIDEO



USER GUIDE



QUICK START



MECHANICAL DRAWING

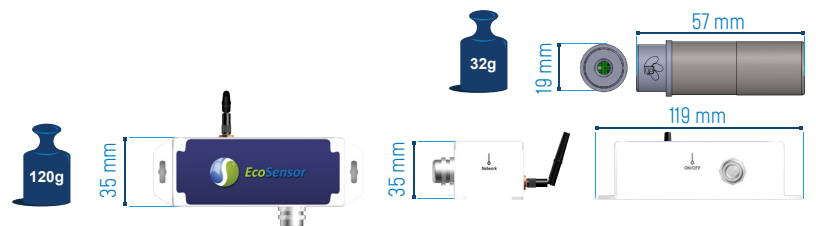


STEP FILE



2year
Warranty

MADE IN GERMANY



MAIN FEATURES

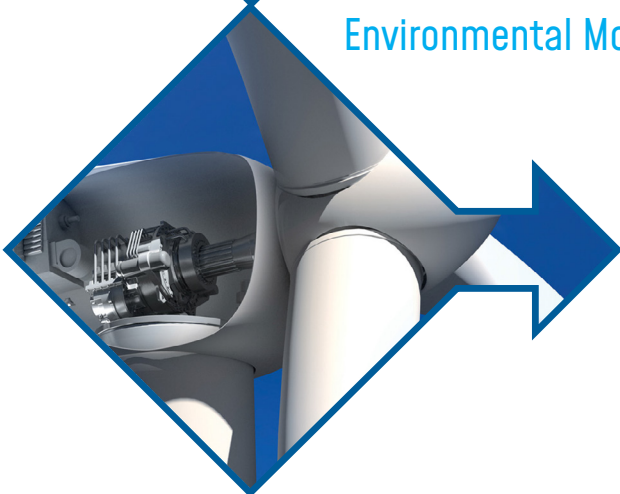
- High accuracy temperature sensor :
-range : -40°C to +75°C
- accuracy : ±0.2°C
- Ultra-low power technology IEEE 802.15.4 (up to 7-year battery life) Max wireless range: 300m (L.O.S.)
- Embedded data logger :
up to 1 million data points
- High accuracy humidity sensor :
-range : 0 to 100% RH
- accuracy : ±1.8% RH
- Waterproof IP67 polycarbonate enclosure
Weight: 120g - Size (LxLxh): 119 x 35 x 35 mm (without sensor probe)
- OPC server allowing real time access from your IT system to the BeanScope® (available on BeanScope® Premium+)
- Primary cell capacity: 2200 mAh (AA size) Lithium-thionyl chloride technology
- Integrated dew point measurement

APPLICATIONS



structural Health Monitoring

Environmental Monitoring



Condition Monitoring

EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The [BeanDevice® 2.4GHz ONE-TH](#) integrates an embedded datalogger, which can be used to log data when a Wireless IIOT Sensors can not be easily deployed on your site. All the data acquisition are stored on the embedded flash and then transmitted to the [BeanGateway® 2.4GHz](#) when a Wireless IIOT Sensors is established.

The dataLogger function is compatible with all the data acquisition mode available on your [BeanDevice® 2.4GHz ONE-TH](#) :

- LowDutyCycle Data Acquisition
- Survey

EXAMPLE : HVAC MONITORING

- In standalone operation, the BeanDevice® 2.4GHz ONE-TH stores all the measurements on its embedded datalogger. Thus, a direct connection with the BeanGateway® 2.4GHz is not needed.
- The temperature & humidity in the HVAC system are monitored and all the acquired measurements are logged on the embedded flash.
- Data logs can be transmitted to the BeanGateway® 2.4GHz on request. Once a successful transmission is done, the user can choose to erase automatically the logs from the datalogger memory, so new ones can be stored



For further information about data logger, please read the following technical note :
TN-RF-007 – “BeanDevice® DataLogger User Guide ”

BeanDevice® 2.4GHz ONE-TH

DEW POINT MEASUREMENT

The **BeanDevice® 2.4GHz ONE-TH**, comes with DewPoint measurement capability which makes it suitable for Greenhouses monitoring. The dew point is the temperature at which the water vapor in a sample of air at constant barometric pressure condenses into liquid water at the same rate at which it evaporates. When the air temperature cools to the dew point temperature, or if the dew point rises to equal the air temperature, the **BeanDevice® 2.4GHz ONE-TH** transmits the information, so the user can prevent the formation of dews.

REMOTE CONFIGURATION & MONITORING

BeanScape® 2.4GHz Basic

The **BeanScape® 2.4GHz** application allows the user to view all the data measurements transmitted by the **BeanDevice® 2.4GHz One-TH**. With the OTAC (Over-the-Air configuration) feature, the user can remotely configure the **BeanDevice® 2.4GHz ONE-TH**

SEVERAL DATA ACQUISITION MODES ARE AVAILABLE ON THE BEANDEVICE® 2.4GHz ONE-TH:

- **Low Duty Cycle Data Acquisition mode (LDCDA)** : the data acquisition is immediately transmitted by radio. The transmission frequency can be configured from 1s to 24h.
- **Survey Mode** : the measured value is transmitted by radio whenever an alarm threshold (fixed by the user) is detected (4 alarms threshold levels High/Low). Meanwhile, the device sends frequently a beacon frame informing its current status.

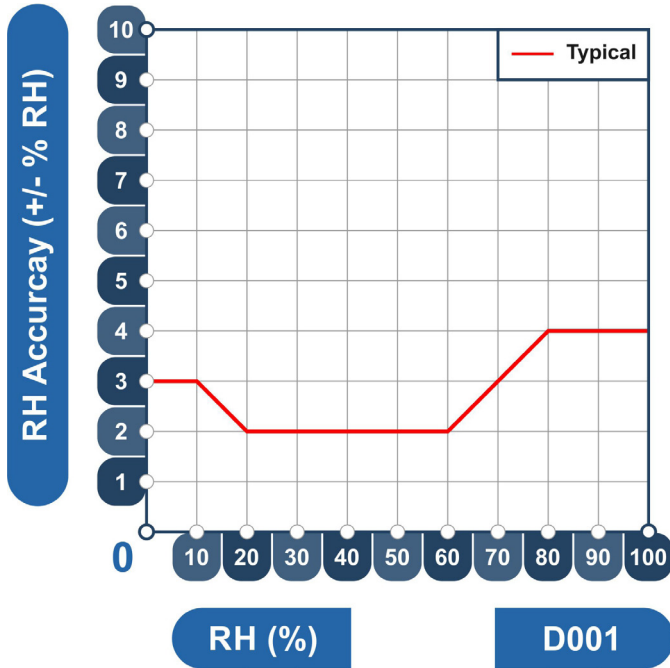
BeanScape® 2.4GHz Premium+ Add-on

The **BeanScape® 2.4GHz Premium+** integrates an OPC DA server (Data Access). OPC DA is particularly well suited for real time measurement and data sharing. Each data/measurement can be associated to a tag or its attributes and shared with one or many OPC clients

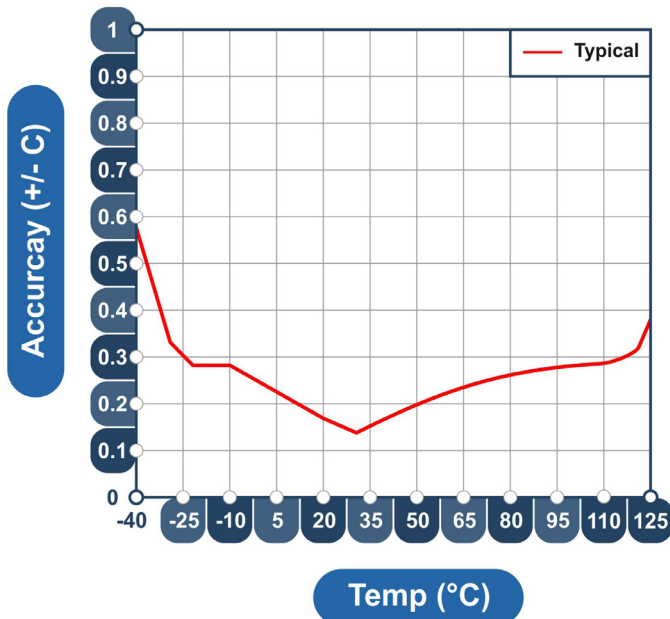


For further information about data logger, please read the following technical note :
TN-RF-008 – “Data acquisition modes available on the BeanDevice®”

RELATIVE HUMIDITY ACCURACY



TEMPERATURE MEASUREMENT ACCURACY



TECHNICAL SPECIFICATIONS
PRODUCT REFERENCE
BND-2.4GHZ-ONE-TH-CL

CL : Cable length in cm (minimum cable length 20 cm, maximum cable length 150 cm)

TEMPERATURE SENSOR SPECIFICATIONS

| | |
|-------------------------------|-----------------------|
| Temperature Sensor technology | Thermistor |
| Measurement range | - 40°C to +85 °C |
| Accuracy (5°C to 60°C) | ±0.2 °C |
| Sensor resolution | 0.015 °C |
| Long term drif | < 0.05 K / year |
| Response time | < 20s with sensor cap |

HUMIDITY SENSOR SPECIFICATIONS

| | |
|-------------------------------|---------------------------------------|
| Humidity Sensor technology | Capacitive polymer humidity sensor |
| Measurement range | 0 to 100 %RH |
| Accuracy | ±2 %RH (Temp: 25°C, range: 20-60 %RH) |
| Repeatability | ±0.1 %RH |
| Sensor resolution | 0.01% RH |
| Hysteresis (10 %RH to 70 %RH) | < ±1% RH |
| Response time | <20s with sensor housing |
| Long term drif | 0.25 % RH / year |

RF SPECIFICATIONS

| | |
|----------------------|---|
| Wireless Technology | Ultra-Low-Power and license-free 2.4Ghz radio technology (IEEE 802.15.4E) |
| Network Topology | Point-to-Point / Star |
| Data rate | 250 Kbits/s |
| RF Characteristics | ISM 2.4GHz – 16 Channels |
| TX Power | +18 dBm |
| Receiver Sensitivity | -95.5 dBm to -104 dBm |
| Max. Radio Range | 300 m (Line of Sight) , 30-80m (Non Line of Sight) |
| Antenna | Omndirectional antenna 2.2dBi |

TECHNICAL SPECIFICATIONS

SENSOR HOUSING

| | |
|-------------------------|---|
| Dimensions | Diameter 18 mm, Length: 57 mm |
| Sensor housing | Waterproof (IP66) stainless steel with 30-45µm of pore size |
| Pressure Resistant | Up to 16 bar |
| Operating Temperature | -40°C to +85°C |
| Dew formation resistant | Yes |

OVER-THE-AIR CONFIGURATION (OTAC) PARAMETERS

| | |
|-----------------------|---|
| Data Acquisition mode | Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour Alarm mode: 1s to 24 hour |
| Alarm Threshold | 2 high level alarms & 2 low level alarms |
| Power Mode | Sleep & Active |

EMBEDDED DATA LOGGER

| | |
|---------------------------|--|
| Storage capacity | up to 1 000 000 data points |
| Wireless data downloading | 3 minutes to download the full memory (average time) |

ENVIRONMENTAL AND MECHANICAL

| | |
|-----------------------|---|
| Casing | Polycarbonate, Waterproof IP67 – Fire Protection : ULV94 Casing dimensions (LxHxh) : 119 mm x 35 mm x 35 mm Weight (battery included): 120g |
| Operating Temperature | -40°C to +75°C |
| Norms | FCC & CE compliant ROHS - Directive 2002/95/EC |

POWER SUPPLY

| | |
|--------------------------------|--|
| Current consumption @3.3 Volts | <ul style="list-style-type: none"> • During data acquisition : 20 to 30 mA • During Radio transmission : 60 mA • During sleeping : < 10 µA |
| Included primary cell | Lithium-thionyl chloride battery with 1800 mAh capacity (AA size) |

OPTION[S]

| | |
|-------------|-----------------------------|
| Calibration | DakkS connected calibration |
|-------------|-----------------------------|

CHOOSE AN ULTRA LOW POWER WIRELESS SENSOR

| | |
|----------------------------|--------------------------------------|
| RF transmission in minutes | Battery life (temperature room 25°C) |
| Every 2 minutes | 22 months |
| Every 5 minutes | 51 months |
| Every 10 minutes | 102 months |

BeanDevice® 2.4GHz ONE-TH

GETTING STARTED WITH A WIRELESS IIOT SENSORS

The **BeanDevice® 2.4GHz ONE-TH** operates only on our Wireless IIOT Sensors, you will need the **BeanGateway® 2.4GHz** and the **BeanScope® 2.4GHz** for starting a Wireless IIOT Sensors.



BeanAir
Rethinking Sensing Technology



+ **OR** **+**



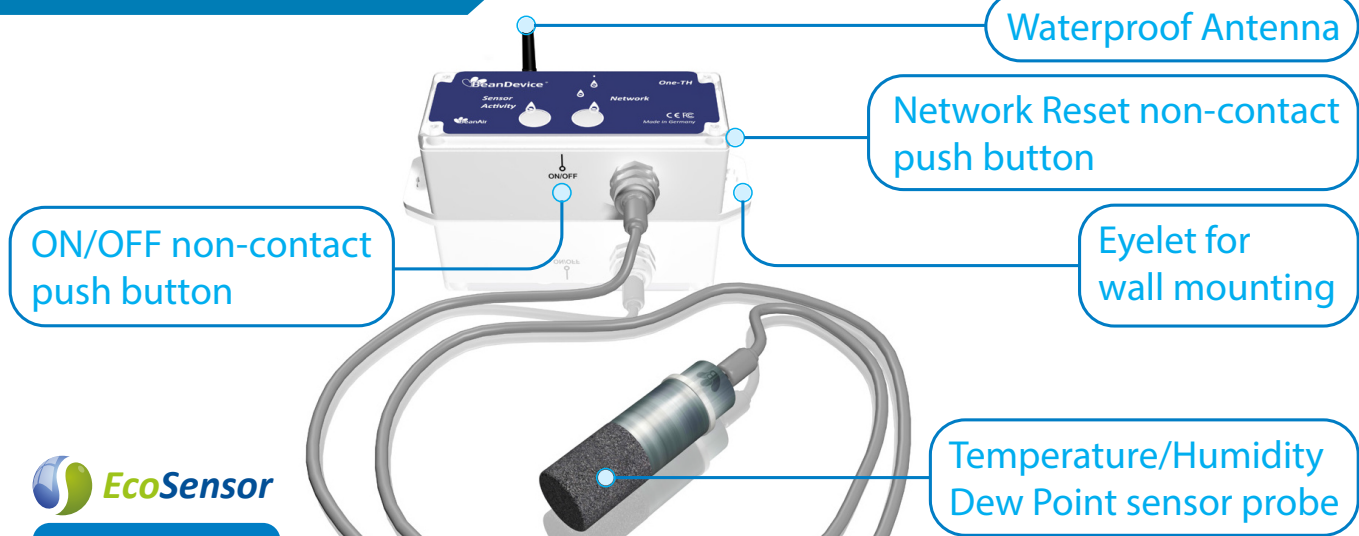
BeanGateway



BeanScope
Wireless IIOT Sensors Supervision Software

Product specifications are subject to change without notice.
Contact Beanair for latest specifications

BEANDEVICE® 2.4GHz ONE-TH OVERVIEW



BeanDevice 2.4GHz ONE-TH

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BeanDevice® 2.4GHz ONE-TH

ACCESSORIES

Antenna

2.2 dBi omnidirectional antenna



Primary Cell

Lithium-thionyl chloride primary cell (Li-SOCl₂) 2.2 Ah
Ref: PP2.2DMG

CONTACT US

Headquarter:

BeanAir GmbH
Wolfener Straße 32 - 34
12681 Berlin

Email:

info@beanair.com

Phone number:

+49 30 98366680



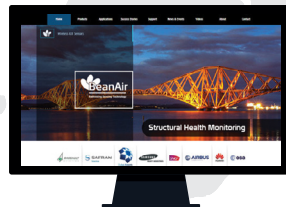
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