BeanAir
WIRELESS IIOT SENSORS

2.4 GHz

BeanDevice® 2.4GHz ONE-T

Wireless IIOT temperature sensor | built-in datalogger

EcoSensor

2year Warranty

MADE IN GERMANY

CE FC ℝ **207-132085**

APPLICATION VIDEO

USER GUIDE

QUICK START

MECHANICAL DRAWING

STEP FILE

120g

35 mm

119 mm

35 mm

MAIN FEATURES

- Embedded data logger : up to 1 million data points

- Ultra-low power technology IEEE 802.15.4 (up to 7-year battery life) Max wireless range: 300m (L.O.S.)

- Temperature measurement range :
  - 50°C to +150°C (standard accuracy) or
  - 10°C to +60°C (high accuracy)

- High & standard accuracy silicon temperature sensor

- Watertight IP67 polycarbonate enclosure Weight : 120g, Size (Lxlxh) : 119x35x35mm

- Primary cell capacity: 2200 mAh (AA size) Lithium-thionyl chloride technology

- OPC server allowing real time access from your IT system to the BeanScape® (available on BeanScape® Premium+)
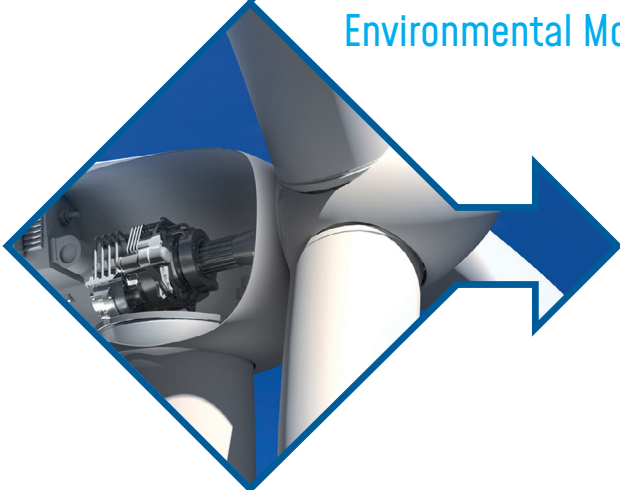
APPLICATIONS

structural Health Monitoring

Environmental Monitoring

Condition Monitoring

Test and Measurment

EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The BeanDevice® 2.4GHz One-T 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 network is established.
The dataLogger function is compatible with all the data acquisition mode available on your BeanDevice® 2.4GHz One-T :

• LowDutyCycle Data Acquisition
• Survey

BeanDevice® 2.4GHz ONE-T

EXAMPLE : COLD CHAIN TRACEABILITY

• In standalone operation, the BeanDevice® 2.4GHz One-T stores all the measurements on its embedded datalogger. Thus, a direct connection with the BeanGateway® 2.4GHz is not needed.

• When the the truck starts moving, the local temperature is monitored and all the acquired measurements are stored on datalogger.

• 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.

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

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-T. With the OTAC (Over-the-Air configuration) feature, the user can remotely configure the BeanDevice® 2.4GHz One-T

SEVERAL DATA ACQUISITION MODES ARE AVAILABLE ON THE BEANDEVICE® 2.4GHz One-T:

• 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 ® 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

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

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ACCURATE SILICON TEMPERATURE SENSOR (STANDARD ACCURACY VERSION)

ACCURACY COMPARISON BETWEEN THE BEANDEVICE ONE-T STANDARD ACCURACY VERSION AND PLATINUM SENSORS

- - - - - DIN A sensor
- - - - - DIN B sensor
——— silicon temperature sensor
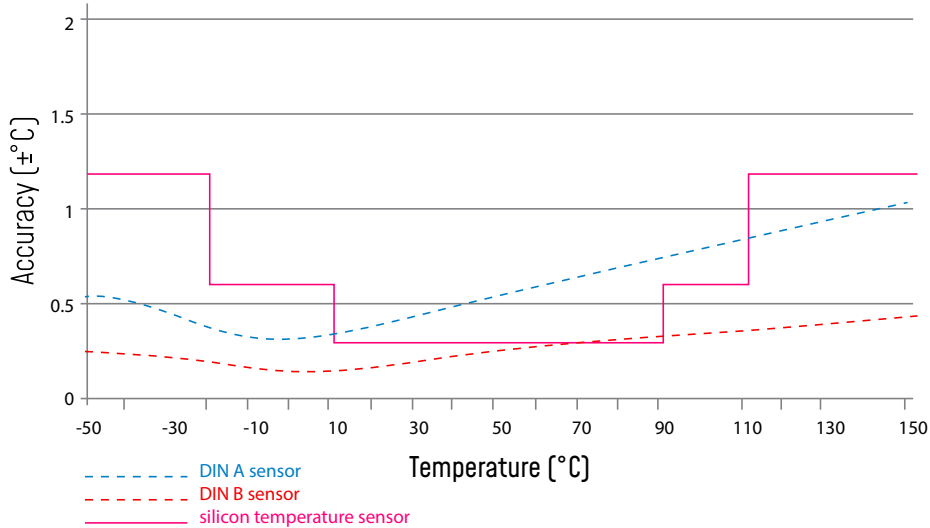
The figure above illustrates the accuracies of the BeanDevice® 2.4GHz One-T standard accuracy version and DIN A and DIN B platinum sensors.

In the standard calibration the BeanDevice® 2.4GHz One-T is in the range between 10°C and 110°C more accurate than the DIN B platinum sensor.

An outstanding long term stability makes sure that the accuracy will remain in the described tolerances.

ACCURATE SILICON TEMPERATURE SENSOR (HIGH ACCURACY VERSION)

- - - - - DIN A sensor
- - - - - DIN Y sensor

BeanDevice® 2.4GHz ONE-T
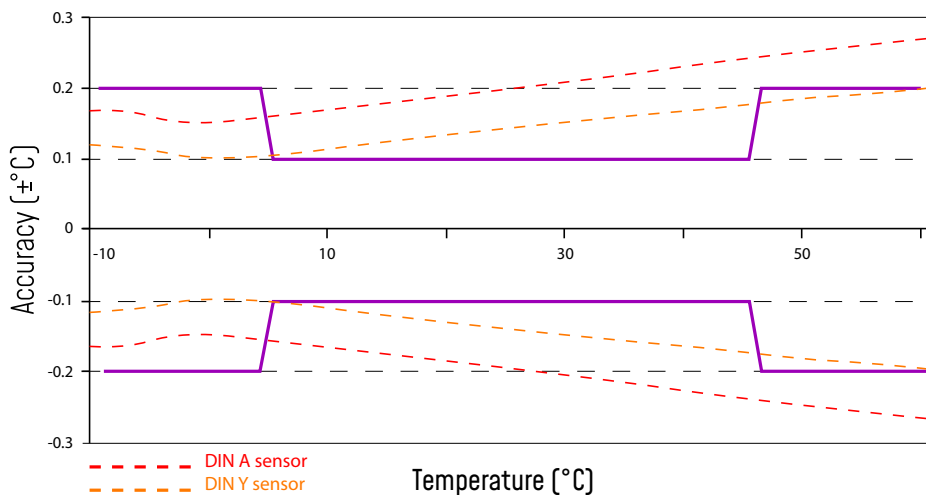
TECHNICAL SPECIFICATIONS

PRODUCT REFERENCE

BND-2.4GHZ-ONE-T-SA-CL

SA—temperature sensor accuracy & design	CL—Sensor Cable length
· ST : standard accuracy	Sensor cable length in cm
· HA: High accuracy	Maximum cable length: 150 cm
· HAEY: High accuracy with eyelet probe for wall mounting (minimum cable length 25 cm)	If this field is empty : no cable length

Example 1: BND-2.4GHZ-ONE-T-ST, wireless temperature sensor with 1 probe, standard accuracy (temperature range -25°C to +75°C), no cable length
Example 2: BND-2.4GHZ-ONE-T-HA-120, wireless temperature sensor with 1 probe, High accuracy (temperature range -10°C to +60°C), cable length 120 cm
Example 3: BND2.4GHZ-ONE-T-HAEY-25, wireless temperature sensor with eyelet probe for wall mounting , high accuracy (temperature range -10°C to +60°C), cable length 25 cm

TEMPERATURE PROBE TYPES	
Probe type HAEY	Temperature probe with eyelet mounting (Length 50 mm, Diameter 6 mm, Hole diam. 5.3 mm)
Probe type ST & HA	Length 40 mm, Diameter 6 mm

RF SPECIFICATIONS	
Wireless Technology	Ultra-Power and license-free 2.4Ghz radio technology (IEEE 802.15.4E)
WSN 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

BeanDevice® 2.4GHz ONE-T

TECHNICAL SPECIFICATIONS

TEMPERATURE SENSOR SPECIFICATIONS		
Temperature Sensor technology	Silicon temperature probe − Probe watertightness : IP67 Mechanical assembly type : steel tube	
Measurement range	High accuracy temperature probe: BND-2.4GHZ-ONE-T-HA-CL BND-2.4GHZ-ONE-T-HAEY-CL	-10 °C to +60 °C
	Standard accuracy temperature probe with cable length: BND-2.4GHZ-ONE-T-ST-CL	-50 °C to +150 °C
	Standard accuracy temperature probe without cable length: BND-2.4GHZ-ONE-T-ST	-25°C to +75°C
Measurement accuracy	High accuracy temperature probe: BND-2.4GHZ-ONE-T-HA-CL BND-2.4GHZ-ONE-T-HAEY-CL	±0.2°C between -10°C and -5 °C ±0.1°C between -5°C and +45°C ±0.2°C between +45°C and +60°C
	Standard accuracy temperature probe : BND-2.4GHZ-ONE-T-ST-CL	±0.3 °C between -10 °C and +60 °C ±(0.3 + 0.012(T-60)) °C between +60 °C and +150 °C +/- (0.3 - 0.012(T+10)) °C between -50 °C and -10 °C
Sensor resolution	High accuracy temperature probe: BND-2.4GHZ-ONE-T-HA-CL BND-2.4GHZ-ONE-T-HAEY-CL	0.0034 °C
	Standard accuracy temperature probe : BND-ONE-T-ST-CL	0.1 °C

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 (Lxlxh) : 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

BeanDevice® 2.4GHz ONE-T

TECHNICAL SPECIFICATIONS

POWER SUPPLY	
Current consumption @3.3 Volts	· 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

GETTING STARTED WITH A WIRELESS IIOT SENSORS

The BeanDevice® 2.4GHz One-T operates only on our Wireless IIOT Sensors , you will need the BeanGateway® 2.4GHz and the BeanScape® 2.4GHz for starting a Wireless IIOT Sensors.

BeanDevice
2.4GHz ONE-T

BeanGateway
Indoor Version

OPC FOUNDATION ®
OPC SERVER

OR

BeanGateway
Outdoor Version

BeanScape
Wireless IIOT Sensors Supervision Software

BeanAir
Rethinking Sensing Technology

BeanDevice® 2.4GHz ONE-T

BEANDEVICE® ONE-T OVERVIEW

Waterproof Antenna

Network Reset
non-contact push button

Eyelet for
wall mounting

ON/OFF non-contact
push button

Temperature Sensor probe

EcoSensor

BeanDevice 2.4GHz ONE-T

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

ACCESSORIES

Antenna
2.2 dBi omnidirectional antenna

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

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