

BeanDevice® **One-T**



Wireless **temperature** sensor  
with built-in data logger

2.4  
GHZ

**DATASHEET**



**EcoSensor**

[www.beanair.com](http://www.beanair.com)

# BeanDevice® One-T

MADE  
IN   
GERMANY

## Video



Application Video

## User Guide



## Quick Start



## Mechanical Drawing



## STEP File



35 mm



35 mm



119 mm

## OVERVIEW



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



High & standard accuracy silicon temperature sensor



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.)



Watertight IP67 polycarbonate enclosure  
Weight : 120g,  
Size (LxHx) : 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



AGRICULTURE & FARMING



COLD CHAIN TRACEABILITY



AIR-CONDITIONING SYSTEM (HVAC)



TECHNICAL BUILDING MANAGEMENT



TRANSPORT



MEDICAL LAB & CLEAN ROOM

## EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The **BeanDevice® ONE-T** integrates an embedded datalogger, which can be used to log data when a Wireless Sensor Networks can not be easily deployed on your site. All the data acquisition are stored on the embedded flash and then transmitted to the **BeanGateway®** when a network is established.

The dataLogger function is compatible with all the data acquisition mode available on your **BeanDevice® ONE-T** :

- LowDutyCycle Data Acquisition
- Survey

### EXAMPLE : COLD CHAIN TRACEABILITY

- In standalone operation, the **BeanDevice® ONE-T** stores all the measurements on its embedded datalogger. Thus, a direct connection with the **BeanGateway®** 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®** 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 ”**

## Remote Configuration & Monitoring

### BeanScape® Basic

The **BeanScape®** application allows the user to view all the data transmitted by the **BeanDevice® ONE-T**.

With the **OTAC** (Over-the-Air configuration) feature, the user can remotely configure the **BeanDevice® ONE-T**.

### SEVERAL DATA ACQUISITION MODES ARE AVAILABLE ON THE BEANDEVICE® 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® 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**.

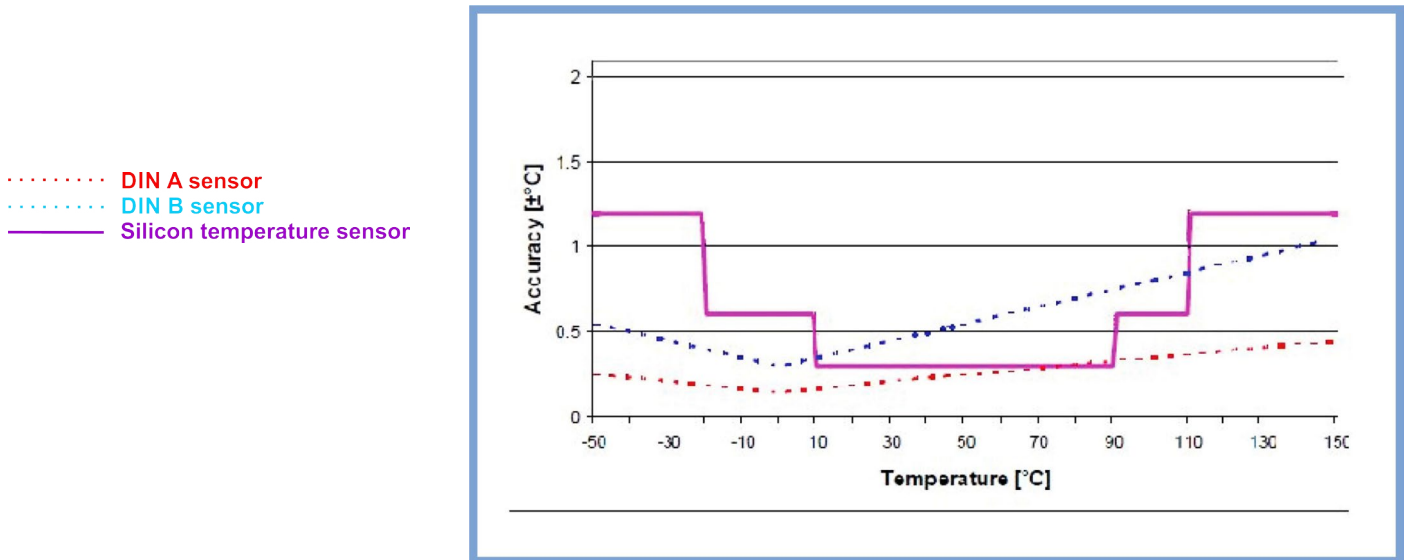
 For further information about the different data acquisition modes:

TN-RF-008 – “Data acquisition modes available on the **BeanDevice®**”



## Accurate silicon temperature Sensor (Standard Accuracy version)

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

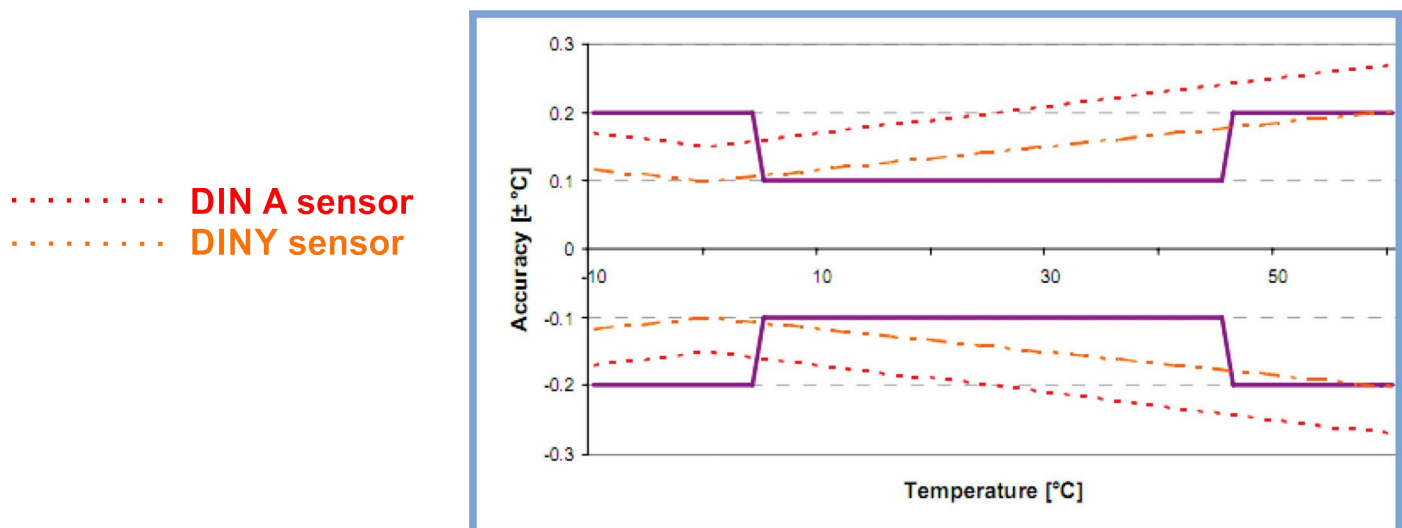


The figure above illustrates the accuracies of the BeanDevice® ONE-T standard accuracy version and DIN A and DIN B platinum sensors.

In the standard calibration the BeanDevice® 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)



## Technical Specifications

Product Reference	
BND-ONE-T- <b>SA-CL</b>	
<b>SA—temperature sensor accuracy &amp; design</b> <ul style="list-style-type: none"> <li>· <b>ST</b> : standard accuracy</li> <li>· <b>HA</b>: High accuracy</li> <li>· <b>HAEY</b>: High accuracy with eyelet probe for wall mounting (minimum cable length 25 cm)</li> </ul>	<b>CL—Sensor Cable length</b> Sensor cable length in cm <b>Maximum cable length:</b> 150 cm If this field is empty: no cable length
<p><b>Example 1</b> : BND-ONE-T-ST, wireless temperature sensor with 1 probe, standard accuracy (temperature range -25°C to +75°C), no cable length</p> <p><b>Example 2</b>: BND-ONE-T-HA-120, wireless temperature sensor with 1 probe, High accuracy (temperature range -10°C to +60°C), cable length 120 cm</p> <p><b>Example 3</b>: BND-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</p>	

Temperature probe types	
<i>Probe type HAEY</i>	Temperature probe with eyelet mounting (Length 50 mm, Diameter 6 mm, Hole diam. 5.3 mm)
<i>Probe type ST &amp; HA</i>	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

## 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-ONE-T- <b>HA-CL</b> BND-ONE-T- <b>HAEY-CL</b>	-10 °C to +60 °C
	Standard accuracy temperature probe with cable length: BND-ONE-T- <b>ST-CL</b>	-50 °C to +150 °C
	Standard accuracy temperature probe without cable length: BND-ONE-T- <b>ST</b>	-25 °C to +75 °C
Measurement accuracy	<b>High accuracy temperature probe:</b> BND-ONE-T- <b>HA-CL</b> BND-ONE-T- <b>HAEY-CL</b>	±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
	<b>Standard accuracy temperature probe :</b> BND-ONE-T- <b>ST-CL</b>	±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	<b>High accuracy temperature probe:</b> BND-ONE-T- <b>HA-CL</b> BND-ONE-T- <b>HAEY-CL</b>	0.0034 °C
	<b>Standard accuracy temperature probe :</b> BND-ONE-T- <b>ST-CL</b>	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

## Technical Specifications

### 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 (LxHx) : 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"> <li>· During data acquisition : 20 to 30 mA</li> <li>· During Radio transmission : 60 mA</li> <li>· During sleeping : &lt; 10 <math>\mu</math>A</li> </ul>
Included primary cell	Lithium-thionyl chloride battery with 1800 mAh capacity (AA size)

### Option(s)

Calibration	DakKS connected calibration
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### 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 Sensor Networks

DESCRIPTION	STARTERKIT REFERENCE
<b>Starterkit with BeanDevice® ONE-T + BeanGateway® Indoor</b> 1 x <a href="#">BeanGateway Ethernet (Indoor version), Ref. : BGTW-ETH-IND</a> 1 x <a href="#">BeanDevice ONE-T, Ref. : BND-ONE-T-ST</a> 1 x <a href="#">Beanscape Basic, Ref. : BNSC_BASIC</a>	SK_ONE_T_IND
<b>Starterkit with BeanDevice® ONE-T + BeanGateway® Outdoor</b> 1 x <a href="#">BeanGateway Ethernet (Outdoor version), Ref. : BGTW-ETH-OUT</a> 1 x <a href="#">BeanDevice ONE-T, Ref. : BND-ONE-T-ST</a> 1 x <a href="#">Beanscape Basic, Ref. : BNSC_BASIC</a>	SK_ONE_T_OUT

The **BeanDevice® ONE-T** operates only on our Wireless Sensor Networks , you will need the **BeanGateway®** and the **BeanScape®** for starting a wireless sensor networks.



OR

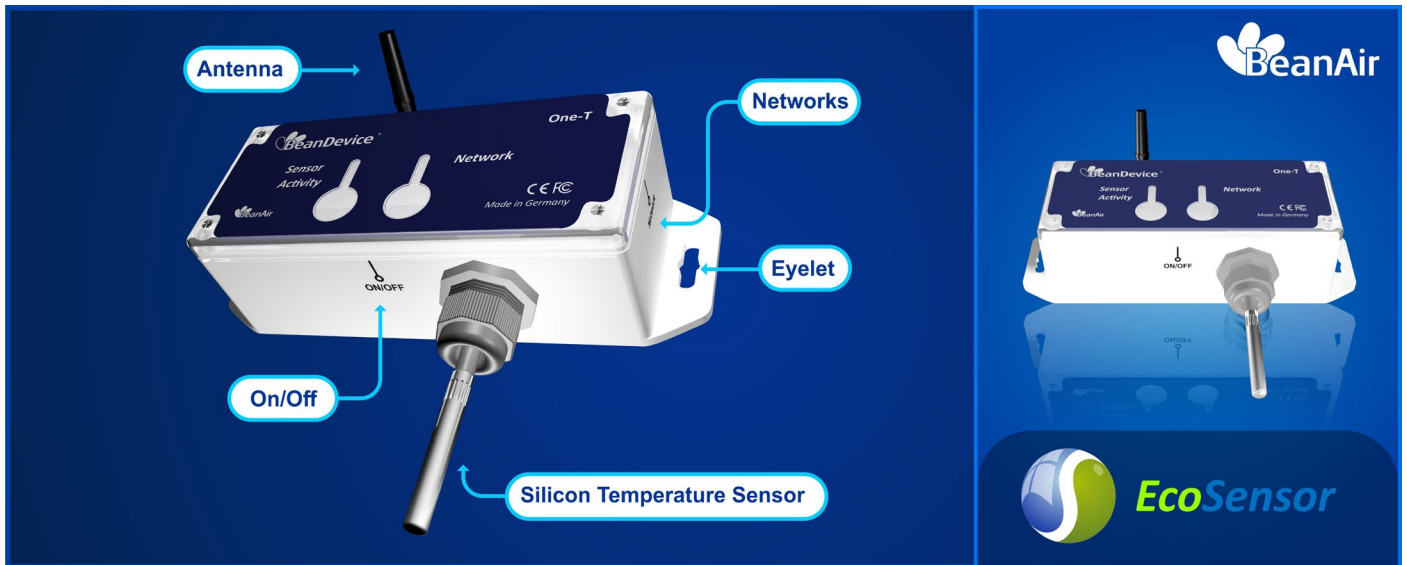


WSN Supervision Software



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

## Beandevic® One-T Overview



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## Accessories



## CONTACT US

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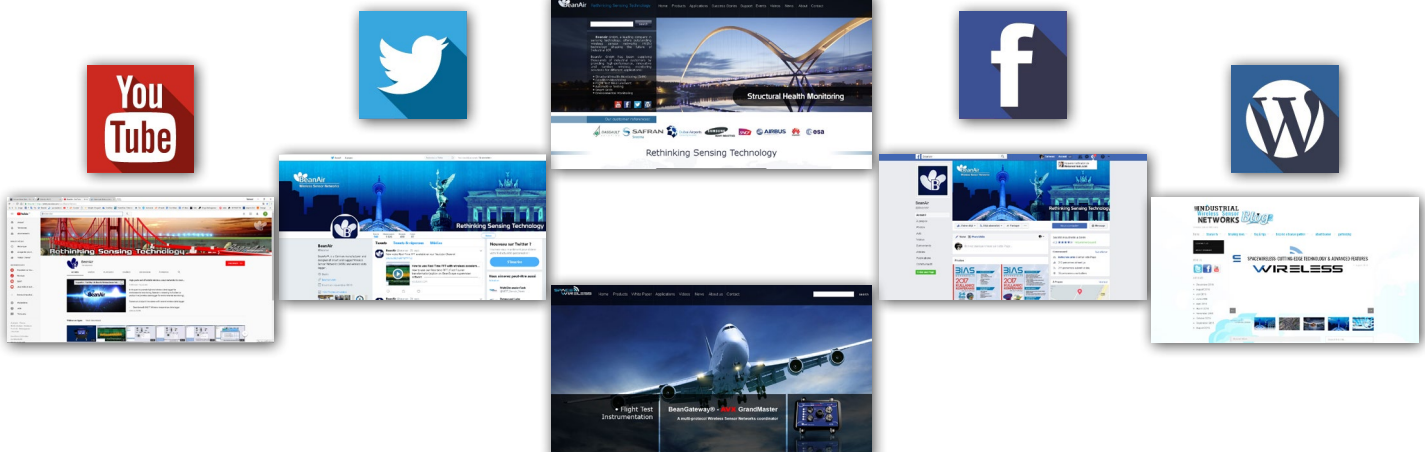
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