EcoSensor

WIRELESS TEMPERATURE DATA LOGGER / LOW COST & SMALL SIZE

2year Warranty

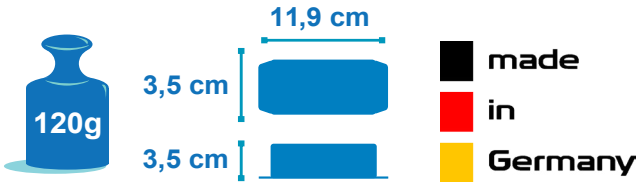
//APPLICATIONS

FEATURED VIDEO

BeanDevice® ONE-T main presentation video

USER MANUAL

BeanDevice® EcoSensor Products Line user manual




TECHNICAL BUILDING MANAGEMENT


COLD CHAIN TRACEABILITY


MEDICAL LAB & CLEAN ROOM


AGRICULTURE & FARMING


TRANSPORT


AIR-CONDITIONNING SYSTEM (HVAC)

// MAIN FEATURES

- Temperature measurement range :
  - 50°C to +150°C (standard accuracy) or
  - 10°C to +60°C (high accuracy)
- Embedded data logger : up to 1 million data points
- Watertight IP67 polycarbonate enclosure
  Weight : 120g,
  Size (Lxlxh) : 119x35x35mm
- Ultra-low power technology IEEE 802.15.4 (up to 7-year battery life) Max wireless range : 300m (L.O.S.)
- 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+)
- High & standard accuracy silicon temperature sensor

//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 informations about the Datalogger, 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.

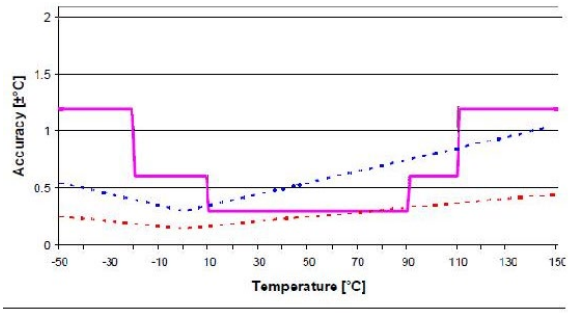
BeanScape ® Premium+ Add-on
The BeanScape® Premium+ integrates an OPC DA server (Data Access). OPC DA is particularly well suited for real time measurement and data sharing. Each data/measurement can be associated to a tag or its attributes and shared with one or many OPC clients.

For further informations about the data acquisition modes, please read the following technical note :
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.

..... DIN A sensor
..... DIN B sensor
_____ Silicon temperature sensor

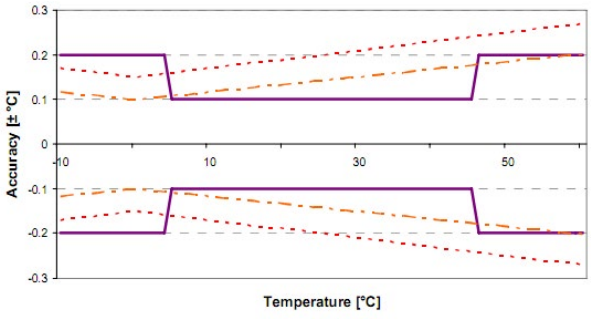


The figure above illustrates the accuracies of the BeanDevice® ONE-T standard accuracy version and DIN A and DIN B platinum sensors.
In the standard calibration the BeanDevice® ONE-T is in the range between 10°C and 110°C more accurate than the DIN B platinum sensor.
An outstanding long term stability makes sure that the accuracy will remain in the described tolerances.

// ACCURATE SILICON TEMPERATURE SENSOR (HIGH ACCURACY VERSION)

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

..... DINA sensor
_____ - - DINY sensor



The following figure illustrates the accuracies of the BeanDevice® ONE-T High accuracy version and DIN A and DIN Y (1/3 DIN B) platinum sensors.
In the standard calibration the BeanDevice® ONE-T is in the range between 5°C and 45°C more accurate than the DIN Y platinum sensor.
An outstanding long term stability makes sure that the accuracy will remain in the described tolerances.

Product Reference		
BND-ONE-T-SA -CL -WP		
SA—temperature sensor accuracy & design · **ST** : standard accuracy	**CL—Sensor Cable length** Sensor cable length in cm	**WP– Wireless Protocol** **IEEE** : IEEE 802.15.4 (2006)
· **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-ONE-T-ST-IEEE**, wireless temperature sensor with 1 probe, standard accuracy (temperature range -25°C to +75°C), no cable length, wireless protocol IEEE 802.15.4

Example 2 : **BND-ONE-T-ST-120-IEEE**, wireless temperature sensor with 1 probe, standard accuracy (temperature range -50°C to +150°C), cable length 120 cm, wireless protocol IEEE 802.15.4

Example 3 : **BND-ONE-T-HA-120-IEEE**, wireless temperature sensor with 1 probe, High accuracy (temperature range -10°C to +60°C), cable length 120 cm, wireless protocol IEEE 802.15.4

Example 4 : **BND-ONE-T-HAEY-25-IEEE**, wireless temperature sensor with eyelet probe for wall mounting , high accuracy (temperature range -10°C to +60°C), cable length 25 cm, wireless protocol IEEE 802.15.4

Temperature probe types	
Probe type HAEY : Temperature probe with eyelet mounting (Length 50 mm, Diameter 6 mm, Hole diameter 5.3 mm)	
Probe type ST & HA (Length 40 mm, Diameter 6 mm)	

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-HA-CL-IEEE BND-ONE-T-HAEY-CL-IEEE	-10 °C to +60 °C
	Standard accuracy temperature probe with cable length: BND-ONE-T-ST-CL-IEEE	-50 °C to +150 °C
	Standard accuracy temperature probe without cable length: BND-ONE-T-ST-IEEE	-25°C to +75°C
Measurement accuracy	**High accuracy temperature probe:** BND-ONE-T-HA-CL-IEEE BND-ONE-T-HAEY-CL-IEEE	±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-ONE-T-ST-CL-IEEE	±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-ONE-T-HA-CL-IEEE BND-ONE-T-HAEY-CL-IEEE	0.0034 °C
	Standard accuracy temperature probe : BND-ONE-T-ST-CL-IEEE	0.1 °C

RF Specifications	
Wireless Protocol Stack	IEEE 802.15.4 (2006 version)
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 (L.O.S)
Antenna	Omndirectional antenna 2.2dBi

Over-the-air configuration (OTAC) parameters	
Data Acquisition mode	Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour
	Survey mode: 1s to 24 hour
Alarm Threshold	2 high levels alarms & 2 low levels alarms
Power Mode	Sleeping with Network Listening & Active
TX Power	18 dBm

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	
Enclosure	Polycarbonate, Watertight IP67 | Nema 6 – Fire Protection : ULV94
	Enclosure 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

Power supply	
Current consumption @3.3 Volts	· During data acquisition : 20 to 30 mA
	· During Radio transmission : 40 mA @ 5dBm , 70 mA @ 18 dBm
	· During sleeping : < 10 µA
Included primary cell	Lithium-thionyl chloride battery with 2200 mAh capacity (AA size)

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

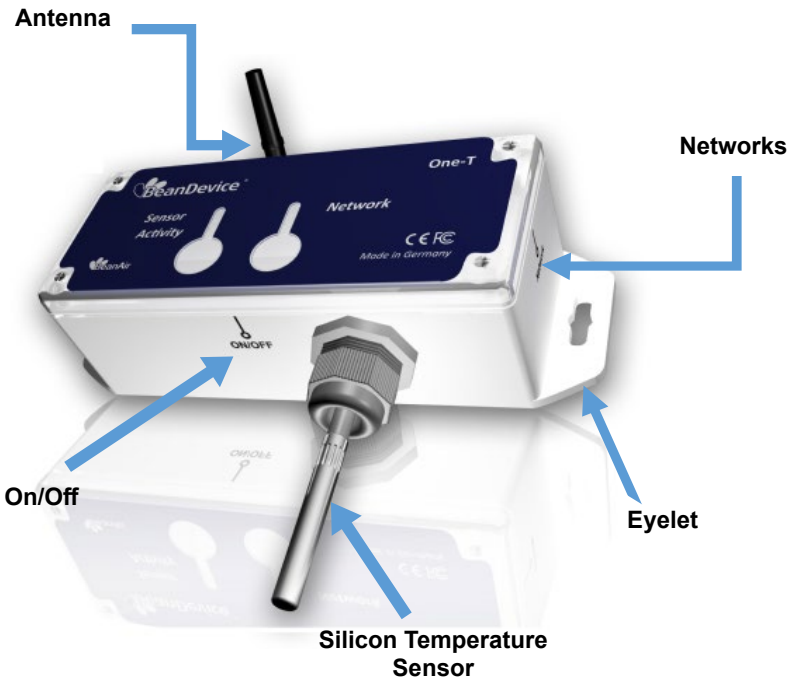
//GETTING STARTING WITH A WIRELESS SENSOR NETWORK

DESCRIPTION	STARTERKIT REFERENCE
Starterkit with BeanDevice® ONE-T + BeanGateway® Indoor 1 x BeanGateway Ethernet ***(Indoor version), Ref. : BGTW-ETH-IND*** 1 x BeanDevice ONE-T, ***Ref. : BND-ONE-T-ST*** 1 x Beanscape Basic, ***Ref. : BNSC_BASIC***	**SK_ONE_T_IND**
Starterkit with BeanDevice® ONE-T + BeanGateway® Outdoor 1 x BeanGateway Ethernet ***(Outdoor version), Ref. : BGTW-ETH-OUT*** 1 x BeanDevice ONE-T , ***Ref. : BND-ONE-T-ST*** 1 x Beanscape Basic, ***Ref. : BNSC_BASIC***	**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.

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

//PRODUCT OVERVIEW



//ACCESSORIES

Lithium-thionyl chloride primary cell (Li-SOCl2) 2,2 Ah |
Ref: PP1.8DMG

2.2 dBi omnidirectional antenna

//CONTACT US

FOR MORE INFORMATIONS :

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