

BeanDevice® **One-TH**



Wireless **Temperature & Humidity** data logger

low cost & small size

2.4
GHZ

DATASHEET



EcoSensor

www.beanair.com

BeanDevice® One-TH

MADE
IN 
GERMANY

Video



Product Video



Application Video

User Guide



Quick Start



Mechanical Drawing



STEP File



35 mm



35 mm



119 mm

OVERVIEW



High accuracy temperature sensor :
range : -40°C to +75°C
- accuracy : $\pm 0.2^\circ\text{C}$



High accuracy humidity sensor :
range : 0 to 100% RH
- accuracy : $\pm 1.8\%$ RH



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 (LxH) : 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+)



Integrated dew point measurement

APPLICATIONS



AGRICULTURE & FARMING



COLD CHAIN TRACEABILITY



AIR-CONDITIONING SYSTEM (HVAC)



ENVIRONMENT



MEDICAL LAB & CLEAN ROOM

EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The **BeanDevice® ONE-TH** integrates an embedded Data Logger, 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 Wireless Sensor Networks is established.

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

- LowDutyCycle Data Acquisition
- Survey

EXAMPLE : HVAC MONITORING

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

DEW POINT MEASUREMENT

The **BeanDevice® 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® ONE-TH** transmits the information, so the user can prevent the formation of dews.

Remote Configuration & Monitoring

BeanScape® Basic

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

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

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

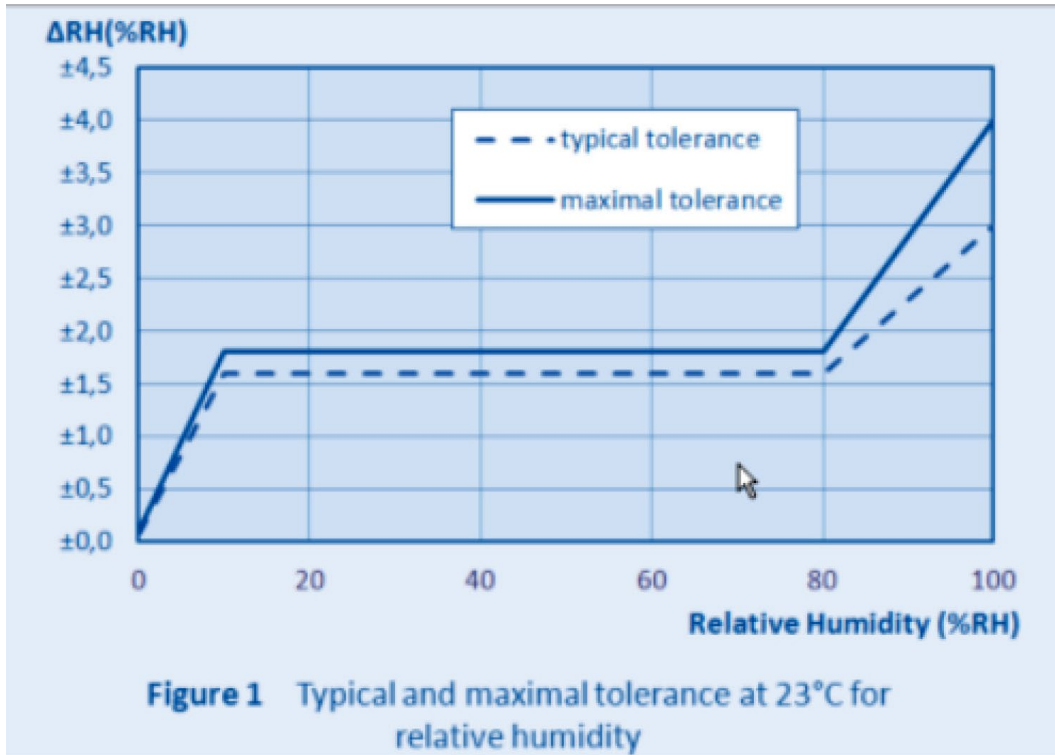


For further information about the different data acquisition modes:

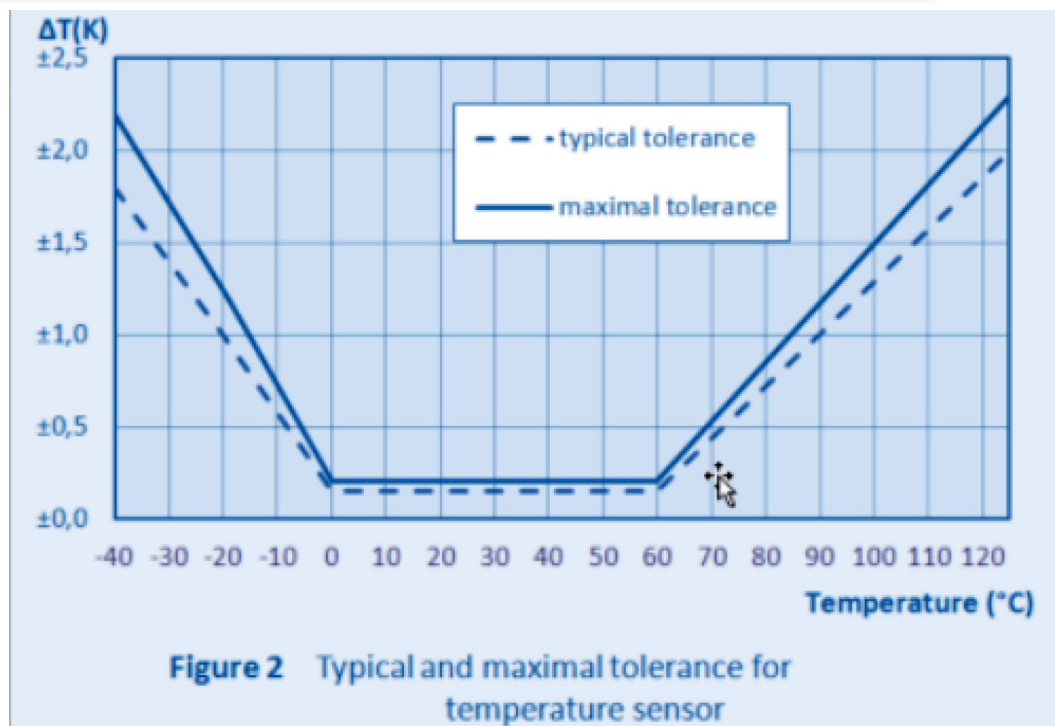
TN-RF-008 – “Data acquisition modes available on the BeanDevice®”




RELATIVE HUMIDITY ACCURACY



TEMPERATURE MEASUREMENT ACCURACY



Technical Specifications

Product Reference	
BND-ONE-TH	
Sensor filter cap mechanical specifications	
Filter cap	Glass grommet and sinter filter
Pressure Resistant	Up to 16 bar
Dew formation resistant	Yes
	
Temperature sensor specifications	
Temperature Sensor technology	Thermistor
Measurement range	- 40°C to +85 °C
Measurement accuracy	±0.2 °C (0 ... 60 °C)
Sensor resolution	0.015 °C
Long term drift	< 0.05 K / year
Response time	< 10s with sensor cap
Humidity sensor specifications	
Humidity Sensor technology	Capacitive polymer humidity sensor
Measurement range	0 to 100% RH
Sensor accuracy (at 23°C)	±1.8% RH (10 ... 80% RH)
Sensor resolution	0.02% RH
Hysteresis (50% rH)	< ±1% RH
Linearity error	< ±1% RH
Response time	<10s with sensor cap
Long term drift	< 0.5 % RH / year
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

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 (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"> · 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 Sensor Networks

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

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

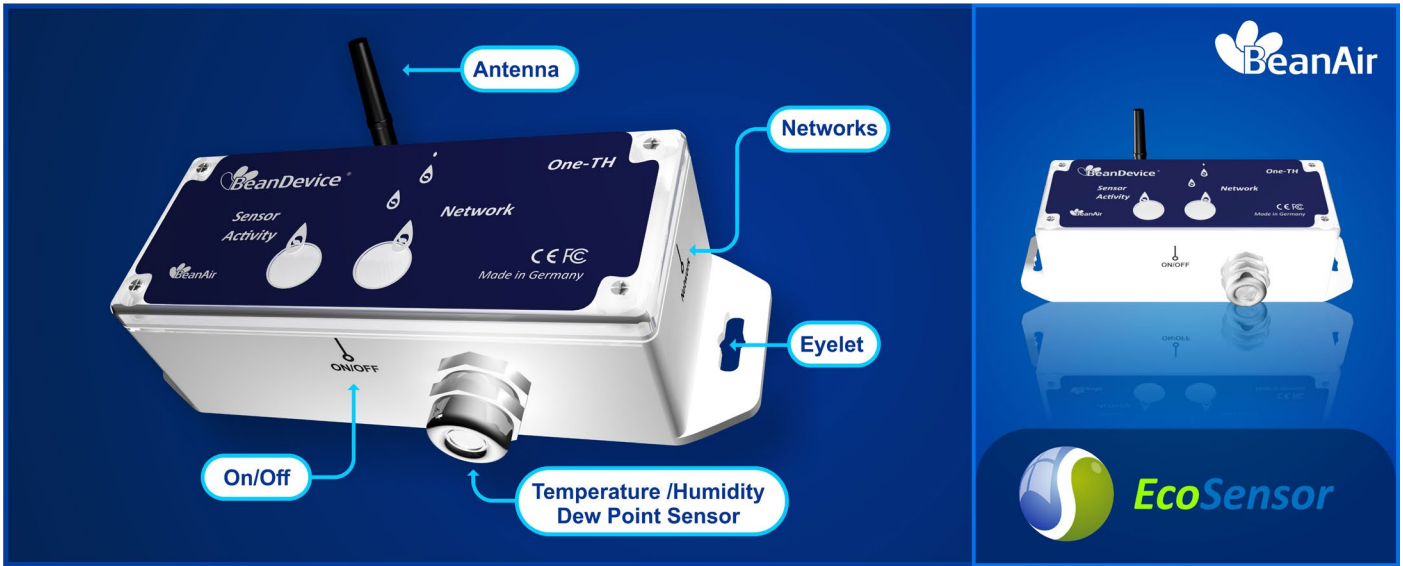


**OPC server is only available on the BeanScape® Premium+



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

Beandevic® One-TH Overview



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

Accessories

	<p>Antenna</p> <p>2.2 dBi omnidirectional antenna</p>
---	--

	<p>Primary Cell</p> <p>Lithium-thionyl chloride primary cell (Li-SOCI₂) 2,2 Ah</p> <p>Ref: PP1.8DMG</p>
--	---

CONTACT US

Headquarter:

BeanAir GmbH
Wolfener Straße 32 - 34
12681 Berlin

Email:

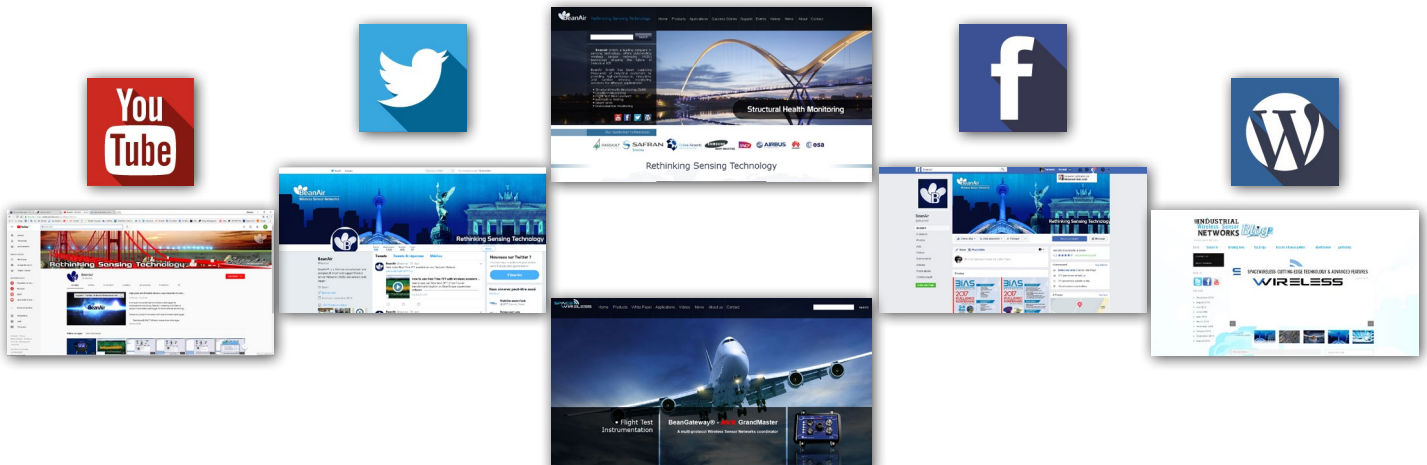
info@beanair.com

Phone number:

+49 30 98366680

Visit our Websites

www.beanair.com



www.space-wireless.com