EcoSensor

ONE-BN

BeanDevice

Wireless pulse datalogger

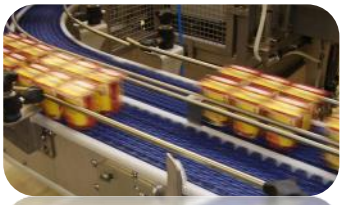
Low cost & small size

Energy Metering (Gas, Water, Electric)

Process control

Technical Building Management

Logistics



Binary sensor & limit switch interfacing

Main features

- 2-channel digital inputs with noise filtering (software configurable)
- Pulse counter function
- Embedded data logger : up to 1 million data points (with events dating)
- 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 (Lxlxh): 119x35x35mm
- Primary cell capacity: 1800 mAh (AA size)
  Lithium-thionyl chloride technology
- OPC server allowing real time access from your IT system to the BeanScape® (available on BeanScape® Premium+)

BeanAir
Rethinking Sensing Technology

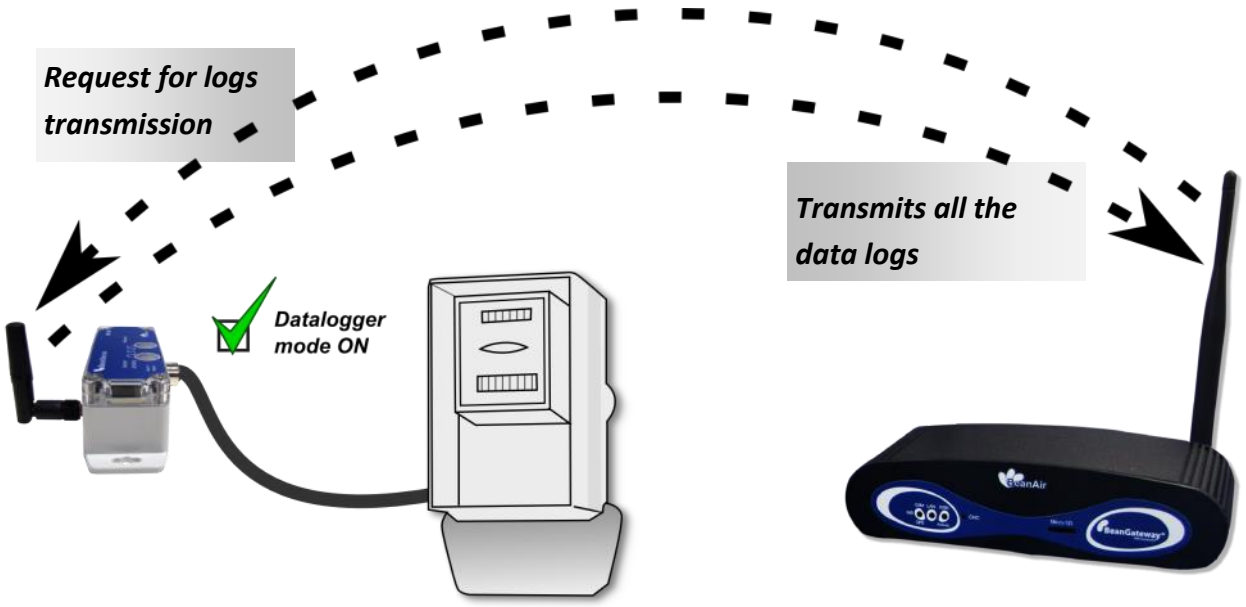
Embedded data logger: up to 1 million data points

The ***BeanDevice® ONE-BN*** 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 Wireless Sensor Networks is established. The Datalogger feature is compatible with all the data acquisition mode available on your ***BeanDevice® ONE-BN***:

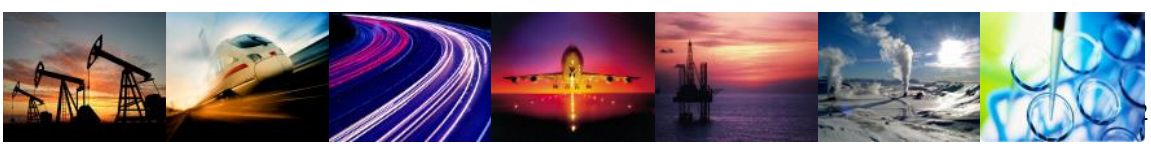
- ***LowDutyCycle Data Acquisition***
- ***Alarm***
- ***Survey***

<u>Example</u>: Energy Metering

- The ***BeanDevice® ONE-BN*** is configured with its Datalogger feature once installed on the Energy Meter. A standalone installation of the ***BeanDevice® ONE-BN*** will be done on the Energy meter, without the necessity to be connected to the BeanGateway®.
- When the Energy meter starts counting, the pulse values are logged on the embedded flash.
- When an operator comes on the site with the BeanGateway®. The ***BeanDevice® ONE-BN*** starts sending all its logs. If all the logs are sucessfully transmitted to the BeanGateway®, the flash memory is erased and new logs will be automatically recorded.



For further informations about the Datalogger, please read the following technical note – <u>TN_RF_007 – "BeanDevice® DataLogger User Guide "</u>



Remote configuration and monitoring

Typical WSN configuration

*Over-the-Air Configuration

BeanScape® Basic

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

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

Several data acquisition modes are available on the **BeanDevice® ONE-BN** :

- **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.
- **Alarm Mode** : the measured value is transmitted by radio whenever an alarm threshold (fixed by the user) is detected (4 alarm threshold levels High/Low).
- **Survey Mode** : operates like the Alarm mode but 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.

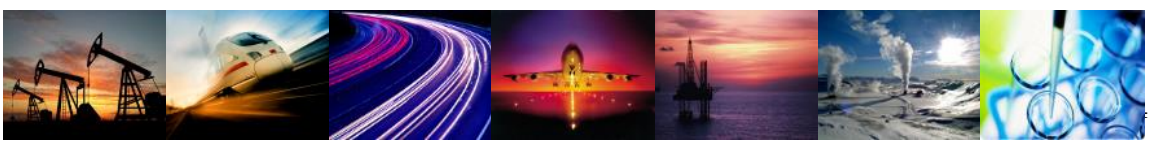
For further informations about the data acquisition modes, please read the following technical note:
TN_RF_008 – "Data acquisition modes available on the BeanDevice®"

Product reference
BND-ONE-BN

3-channel digital input specification			
Measurement range	0-24V (Low level Input : 0 - 0.4V / High Level : 2.3V - 24V)		
Number of digital inputs	2		
Sensor power supply	5 Volts @ 35 mA		
Sensor Acquisition features on each independant channel	***Acquisition Mode***	***Binary***	***Pulse Counter***
	Software filter	0 - 500 ms (Resolution 1 ms)	0 - 500 ms (Resolution 1 ms)
	Max. Input Frequency	1 Hz	40 Hz for a square signal
	Alarm Configuration	Alarm On Edge (channel independant) Alarm On Patterns (multi-channels detection)	Alarm on Counter Value
	Miscellaneous	N.A	Count Edges : Rising / Falling / Both Increasing / Decreasing counter Measurement Range : 0 - 16777215

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	-7 dBm to +18 dBm
Receiver Sensitivity	-95.5 dBm to -104 dBm
Max. Radio Range	300 m (L.O.S)
Antenna	Omndirectional antenna 2.2dBi

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



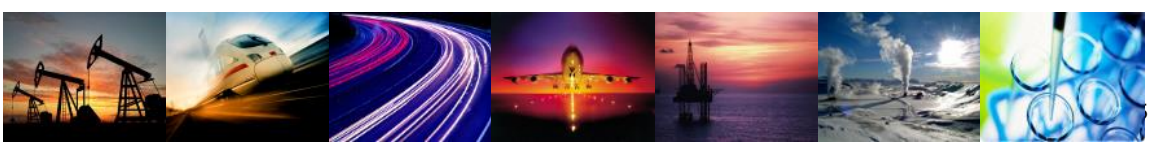
Over-the-air configuration (OTAC) parameters	
Data Acquisition mode	Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour
	Alarm & Survey mode: 1s to 24 hour
Alarm Threshold	2 high levels alarms & 2 low levels alarms
Power Mode	Sleeping, Sleeping with Network Listening & Active
TX Power	-7 dBm / -1 dBm / 5 dBm / 11 dBm / 15 dBm / 18 dBm
Binary/Pulse counter specification	Cf. Digital input table

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 – 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 1800 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

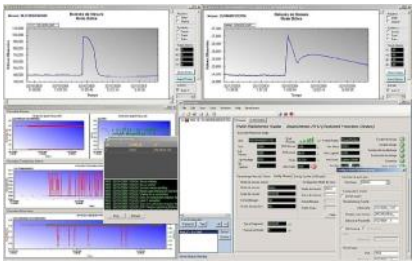


Getting started with a wireless sensor network

OPC Server**

BeanScape

WSN Supervision Software



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

Description	StarterKit Reference
Starterkit Wireless pulse datalogger - BeanGateway Indoor Pack **1 x** BeanGateway Ethernet **(Indoor version), Ref.: BGTW-ETH-IND** **1 x** BeanDevice ONE-BN, **Ref: BND-ONE-BN** **1 x** Beanscape Basic , **Ref: BNSC_BASIC**	SK-ONE-BN-IND
Starterkit Wireless pulse datalogger - BeanGateway Outdoor Pack **1 x** BeanGateway Ethernet **(Outdoor version), Ref.: BGTW-ETH-OUT** **1 x** BeanDevice ONE-BN, **Ref: BND-ONE-BN** **1 x** Beanscape Basic, **Ref: BNSC_BASIC**	SK-ONE-BN-OUT

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

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