

WIRELESS DATA LOGGER WITH 4-20mA CURRENT LOOP INPUTS

//APPLICATIONS

2year
Warranty



FEATURED VIDEO

- BeanDevice® AN-420 Main presentation Video
- BeanDevice® AN-420 Configuration Video
- BeanDevice® AN-420 Wireless Range Video

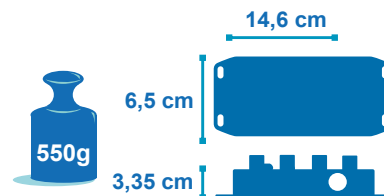
USER MANUAL

- BeanDevice® ProcessSensor user manual

MECHANICAL DRAWING

- BeanDevice® AN-420 drawing

made
in
Germany



//MAIN FEATURES



Wireless data logger with 4-20mA current loop inputs (4 channels)



Wireless transmission IEEE 802.15.4 with antenna diversity



Integrated sensor power supply, software configurable 4.5V to 20V



Integrated rechargeable Lithium-Ion battery



Embedded data logger up to 1 million data points

//EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The **BeanDevice® AN-420** 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 acquisitions are stored on the embedded flash and then transmitted to the **BeanGateway®** whenever a Wireless Sensor Network is established.

The Datalogger function is compatible with all the data acquisition mode available on your **BeanDevice® AN-420** :

- LowDutyCycle Data Acquisition
- Alarm
- Survey
- Streaming & Streaming packet

EXAMPLE : DATA ACQUISITION SYSTEM FOR TECHNICAL BUILDING MANAGEMENT

- The **BeanDevice® AN-420** is configured with its Datalogger feature. A standalone installation of the **BeanDevice® AN-420** will be done (mounted on the walls), without the necessity for any connection to the **BeanGateway®**.
- Once the sensors are connected, each data is recorded on the embedded flash.
- When needed a technician working on the site can send a request for a log transmission. Then the **BeanDevice® AN-420** starts sending all its logs. If all the logs are successfully transmitted to the **BeanGateway®**, the flash memory is erased and new logs will be recorded.



For further information about the Datalogger, please read the following technical note : [TN_RF_007 – “BeanDevice® DataLogger User Guide ”](#)

// REMOTE CONFIGURATION & MONITORING
BeanScape® Basic

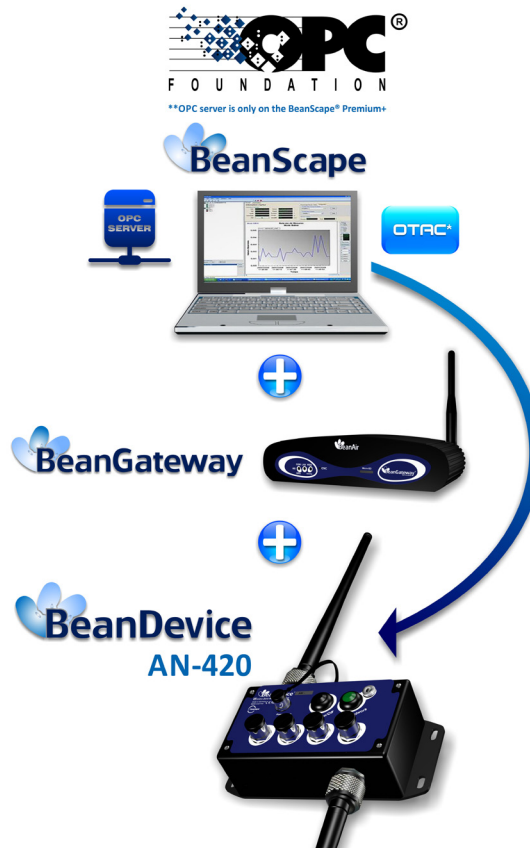
The **BeanScape®** application allows the user to view all the data measurements transmitted by the **BeanDevice® AN-420**. With the **OTAC** (Over-the-Air configuration) feature, the user can remotely configure the **BeanDevice® AN-420**.

SEVERAL DATA ACQUISITION MODES ARE AVAILABLE ON THE BEANDEVICE® AN-420 :

- **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 alarms threshold levels High/Low).
- **Survey Mode** : operates like the Alarm mode but the device sends frequently a beacon frame informing its current status.
- **Streaming Packet Mode** : All measured values are transmitted by packet within a continuous flow at 400 samples per second
- **Streaming Mode** : all measured values are transmitted in real-time within a continuous flow at 100 samples per second maximum.

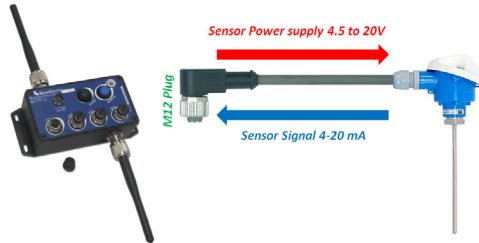
BeanScape® Premium+ Add-on

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®”](#)

//CONFIGURABLE SENSOR POWER SUPPLY



The sensor is directly powered by a high accuracy and adjustable DC/DC converter integrated inside the device. The excitation voltage is remotely configurable through the BeanScape® (4.5 to 20V).

Product Reference

BND-AN420-NCH

N - Number of data acquisition channels:
4 : 4 channels

Example: BND-AN420-4CH
BeanDevice® AN-420 with four channels

Analog data acquisition block specifications

Signal Conditioning	Analog current loop measurement
Number of channels	4 Channels
A/D Converter	16 bits - SAR Architecture (Successive Approximation Register) with temperature compensation
Measurement range	4-20 mA Current Loop measurement
Non-linearity error	± 0.5 LSB
Measurement accuracy(@25°C)	< 0,1% when plugged on external power supply < 0,08% when operating on battery power
Sensor Connector	M12-5Pins coming with an IP rating IP67 Nema 6

Sensor wiring code (M12 Socket)

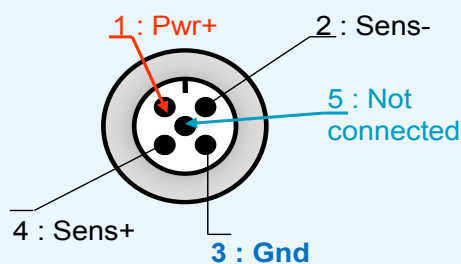
Caption

Pwr+ : sensor power supply (4.5 to 20 Volts)

Gnd : electrical ground

Sens+ : sensor signal + input

Sens- : Not used



Sensor Power Supply specifications

Excitation voltage range	4.5 Volts to 20Volts , configurable from the BeanScape® software
Excitation voltage accuracy on full scale range(@25°C)	±0.1%
Maximum Output Power (@25°C)	2 Watts

Over-the-air configuration (OTAC) parameters

Data Acquisition mode (SPS= Sample Per Second)	<ul style="list-style-type: none"> • Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour • Alarm & Survey mode: 1s to 24 hour • Streaming Packet Mode: 400 SPS maximum • Streaming Mode: 100 SPS maximum
Sampling Rate (SPS = samples per second)	Minimum: 1 SPS Maximum: 400 SPS maximum on each channels
Alarm Treshold	2 high levels alarms & 2 low levels alarms
Sensor power supply	4.5 to 20 Volts
Power Mode	Sleeping, Sleeping with Network Listening & Active
TX Power	-7 dBm/ -1 dBm/ +5 dBm/ +11 dBm/ +15 dBm/ +18 dBm

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	+0 dBm to +18 dBm
Receiver Sensitivity	-95.5 dBm to -104 dBm
Maximum Radio Range	1 Km (L.O.S)
Antenna diversity	2 omnidirectional N-Type antenna , gain of 2.2 dBi , IP67 Nema 6

Embedded Data Logger

Storage Capacity	up to 1 million data points
Wireless data downloading	3 minutes to download the full memory (average time)

Environmental and Mechanical

Enclosure	Aluminum, Watertight IP65 Nema 4 – Fire Protection : ULV94/Getex Enclosure dimensions (w/o antenna) L xWxH : 146.05mm x 65.5mm x 33.5mm Weight : 550g
Shock Resistance	10g during 50ms
Operating Temperature	-20 °C to +65 °C
Norms	CE Labelling Directive R&TTE (Radio) ETSI EN 300 328 ROHS - Directive 2002/95/EC

Power Supply

Integrated Battery Charger	Integrated Lithium-ion battery charger with high precision battery monitoring : <ul style="list-style-type: none"> • Overvoltage Protection, Overcurrent/Short-Circuit Protection, Undervoltage Protection • Battery Temperature monitoring • Current accumulation measurement
Current Consumption @3.3V	<ul style="list-style-type: none"> • During data acquisition : 70mA to 130mA (depends on external sensor power supply) • During Radio transmission : 60 mA @ 0dBm • During sleeping: < 30 µA
External Power Supply	External power supply: +8v to +28v
Rechargeable Battery	Lithium-Ion high density rechargeable battery capacity of 950 mAh

	Option(s)
Power-supply bloc	Wall plug-in, Switchmode power supply 12V @ 1.25A with sealed M8 Plug (IP67 Nema 6)
Calibration Certificate	Calibration certificate linked to national and international standards (COFRAC)

//GETTING STARTING WITH A WIRELESS SENSOR NETWORK

DESCRIPTION	STARTERKIT REFERENCE
Starterkit Wireless System acquisition BeanDevice AN-420 1 x <u>BeanGateway Ethernet (Indoor version), Ref. : BGTW-ETH-IND</u> 1 x <u>BeanDevice AN-420, Ref. : BND-AN-420-4CH</u> 1 x <u>Beanscape Basic, Ref. : BNSC_BASIC</u>	SK_BND_AN420_4CH_IND
Starterkit Wireless System acquisition BeanDevice AN-420 1 x <u>BeanGateway Ethernet (Outdoor version), Ref. : BGTW-ETH-OUT</u> 1 x <u>BeanDevice AN-420, Ref. : BND-AN-420-4CH</u> 1 x <u>Beanscape Basic, Ref. : BNSC_BASIC</u>	SK_BND_AN420_4CH_OUT

The BeanDevice® AN-420 operates only on our Wireless Sensor Networks, you will need the BeanGateway® and the BeanScape® for starting a wireless sensor networks.



OR



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

//CONTACT US

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