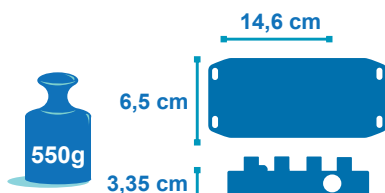


WIRELESS ANALOG DATA ACQUISITION SYSTEM WITH 4-20mA CURRENT LOOP INPUTS

 **2year**
Warranty



 **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

//APPLICATIONS

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

//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
- Survey
- 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 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 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.
- **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.
- **Streaming Packet Mode** : All measured values are transmitted by packet within a continuous flow at 400 samples per second

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®”](#)

//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

Analogue 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)

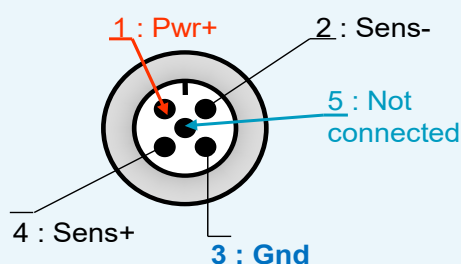
Caption

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 Survey mode: 1s to 24 hour Streaming Packet Mode: 400 SPS maximum
Sampling Rate (SPS = samples per second)	Minimum: 1 SPS Maximum: 400 SPS maximum on each channels
Alarm Threshold	2 high levels alarms & 2 low levels alarms
Sensor power supply	4.5 to 20 Volts
Power Mode	Sleeping with Network Listening & Active
TX Power	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	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 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)

//GETTING STARTING WITH A WIRELESS SENSOR NETWORK

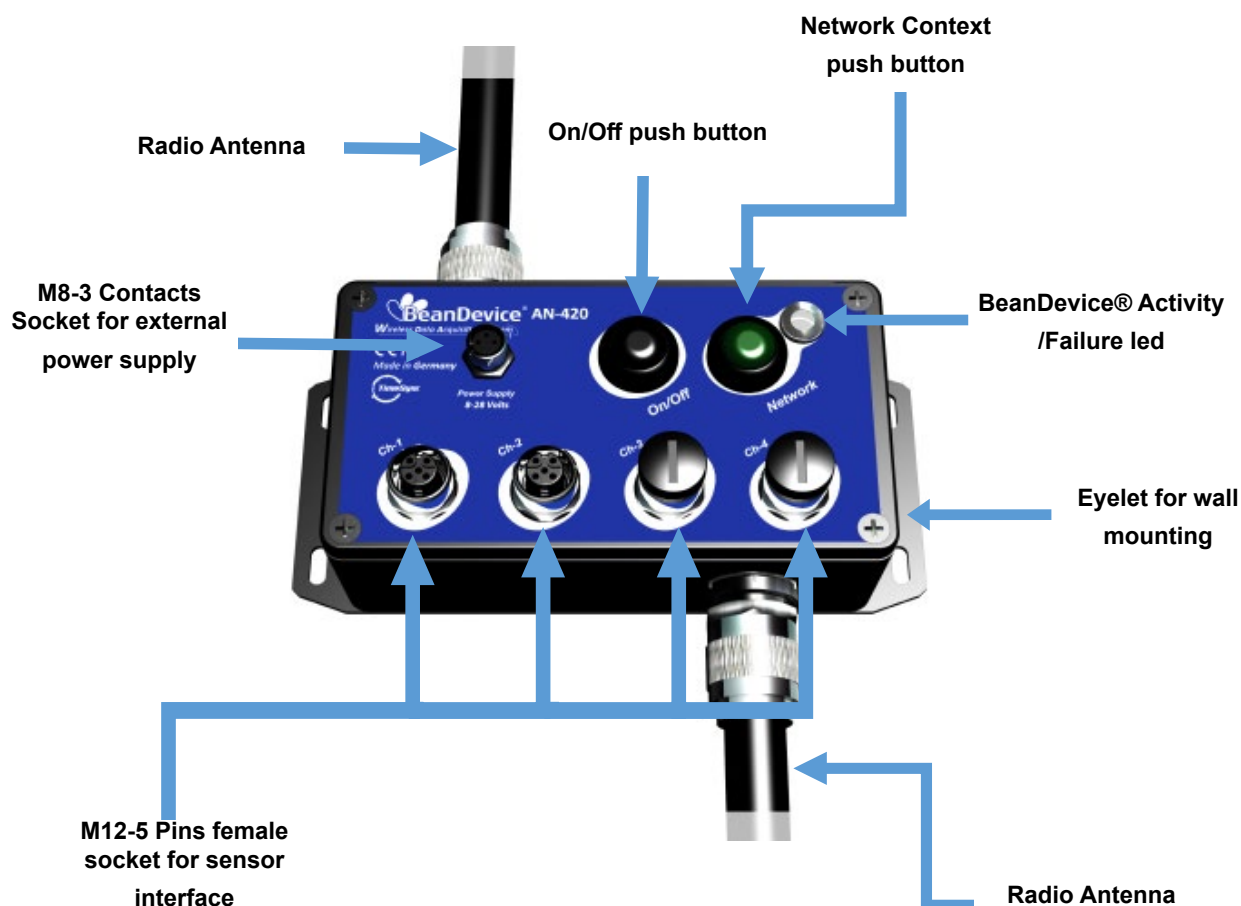
DESCRIPTION	STARTERKIT REFERENCE
Starterkit Wireless System acquisition BeanDevice AN-420 1 x BeanGateway Ethernet (Indoor version), Ref. : BGTW-ETH-IND 1 x BeanDevice AN-420, Ref. : BND-AN-420-4CH 1 x Beanscape Basic, Ref. : BNSC_BASIC	SK_BND_AN420_4CH_IND
Starterkit Wireless System acquisition BeanDevice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



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

//PRODUCT OVERVIEW



//ACCESSORIES



External power supply | Ref: M8-PWR-12V

- . Wall plug-in power supply, Output: 12VDC, M8-3Pins plug
- . AC Power plug: Europe/UK/North america/China/Australia
- . Waterproof - IP67



Molded Cable with M8 plug | Ref: CBL-M8-2M (cable length: 2meters)

- CBL-M8-5M (cable length : 5 meters)
- CBL-M8-10M (cable length : 10 meters)

- . 3pole - Male, PVC with shield protection
- . Waterproof - IP67



Omnidirectiona antenna 5dBi for outdoor use | Ref: HG_OMNI_5_OUT_DBI

- . Waterproof design
- . Outdoor use
- . Professional N-type design reduces stress
- . N-type, Male, Reverse Polarity,
- . VSWR < 2.0 / Length=95mm
- . Wind survival: up to 180Mph / Watertight IP65



N-Type cable (Male/Male) | Ref: CBL_ANT_XXM

. length: 1 meter / 2 meters / 5 meters
. Cable type: RF-5/H155



M12-5 Pins plug for sensor interface | Ref: M12-PL-SENSOR
watertight IP67 - Material: Plastic ABS

M12-5 Pins plug for sensor interface | Ref: M12-AL-SENSOR
watertight IP67 - Material: Aluminum case

//CONTACT US

FOR MORE INFORMATION :

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Visit our website : **www.beanair.com**

Visit our blog : **www.industrial-wsn.com**

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