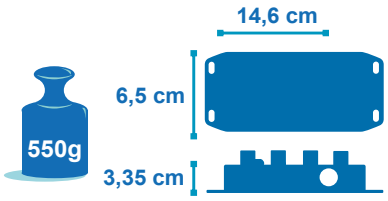
ProcessSensor

SELF-POWERED WIRELESS DATA LOGGER WITH 4-20MA CURRENT LOOP INPUTS

//APPLICATIONS

made in Germany



FEATURED VIDEO

BeanDevice® AN-420 Xtender Main presentation Video

USER MANUAL

BeanDevice® ProcessSensor user manual

MECHANICAL DRAWING

BeanDevice® AN-420 Xtender drawing

// MAIN FEATURES

- Wireless data logger with 4-20mA current loop inputs (4 channels)
- Integrated Lithium-thionyl chloride primary cell 6,5Ah
- Wireless transmission IEEE 802.15.4 with antenna diversity
- Embedded data logger up to 1million data points
- Integrated sensor power supply, software configurable 4.5V to 20V
- Extended operating temperature range : -40°C to +85°C

//EMBEDDED DATA LOGGER UP TO 1 MILLION DATA POINTS

The BeanDevice® AN-420 Xtender 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 Xtender :

- LowDutyCycle Data Acquisition
- Alarm
- Survey

EXAMPLE : DATA ACQUISITION SYSTEM ON WATER TREATMENT PLANT

- The BeanDevice® AN-420 Xtender is configured with its Datalogger feature. A standalone installation of the BeanDevice® AN-420 Xtender 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 Xtender 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 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 Xtender.
With the OTAC (Over-the-Air configuration) feature, the user can remotely configure the BeanDevice® AN-420 Xtender.

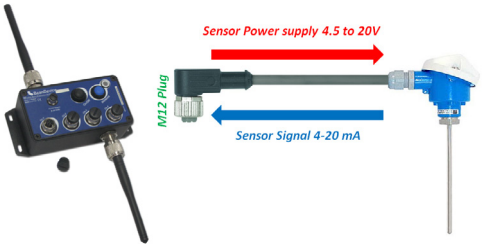
SEVERAL DATA ACQUISITION MODES ARE AVAILABLE ON THE BEANDEVICE® AN-420 XTENDER :

- 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.

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).

//EASY BATTERY MAINTENANCE

Fully designed for an easy battery maintenance, BeanDevice® AN-420 Xtender integrates a battery holder which is sealed to IP67, extending the applications into harsher external environments where dust or water would inhibit equipment operation.

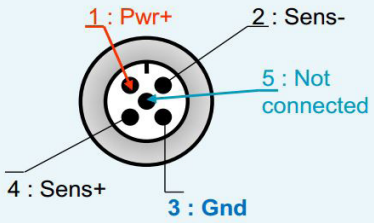
STEP 1 STEP 2 STEP 3

Product Reference	
BND-AN420-XTD-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 Conditionning	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)	< 0,08% 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	• 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
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 dowloading	3 minutes to download the full memory (average time)

	Environmental and Mechanical
Enclosure	Aluminum, Watertight IP65 – Fire Protection : ULV94/Getex Enclosure dimensions (without antenna) L x W x H : 149.1 mm x 77mm x 60.5 mm Weight : 690 g
Shock Resistance	10g during 50ms
Operating Temperature	-40 °C to +85 °C
Norms	CE Labelling Directive R&TTE (Radio) ETSI EN 300 328 ROHS - Directive 2002/95/EC

Power Supply	
Current consumption @ 3,3V	· During data acquisition : 70mA to 130mA (depends on external sensor power supply) · During Radio transmission : 60 mA @ 0dBm · During sleeping: < 30 µA
Primary cell protection	High precision primary cell monitoring : · Overvoltage Protection, Overcurrent/Short-Circuit Protection, Undervoltage Protection · Primary cell Temperature monitoring · Current accumulation measurement
Primary cell	Lithium-thionyl chloride 6,5Ah

	Option(s)
Calibration Certificate	Calibration certificate linked to national and international standards (COFRAC)

ProcessSensor

//GETTING STARTING WITH A WIRELESS SENSOR NETWORK

DESCRIPTION	STARTERKIT REFERENCE
Starterkit Wireless System acquisition BeanDevice AN-420 Xtender 1 x BeanGateway Ethernet ***(Indoor version), Ref. : BGTW-ETH-IND*** 1 x BeanDevice AN-420 Xtender, ***Ref. : BND-AN-420-4CH-XTD*** 1 x Beanscape Basic, ***Ref. : BNSC_BASIC***	**SK_BND_AN420_XTD_4CH_IND**
Starterkit Wireless System acquisition BeanDevice AN-420 Xtender 1 x BeanGateway Ethernet ***(Outdoor version), Ref. : BGTW-ETH-OUT*** 1 x BeanDevice AN-420 Xtender, ***Ref. : BND-AN-420-4CH-XTD*** 1 x Beanscape Basic, ***Ref. : BNSC_BASIC***	**SK_BND_AN420_XTD_4CH_OUT**

The BeanDevice® AN-420 Xtender 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.

//CONTACT US

FOR MORE INFORMATION :

sales@beanair.com
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