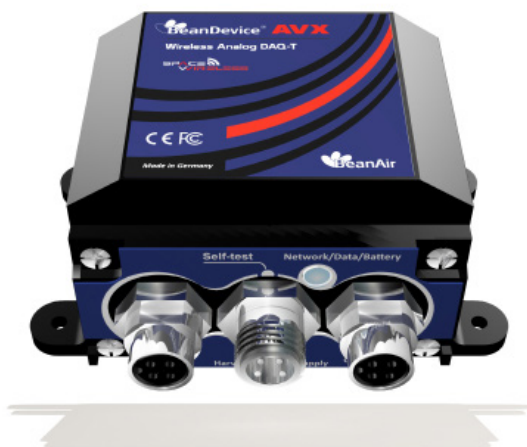
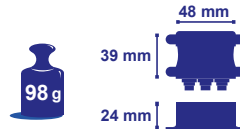


WIRELESS ANALOG DATA ACQUISITION SYSTEMS

APPLICATIONS

made
 in
 Germany



FEATURED VIDEO

**TIME-SYNCHRONIZED AND RUGGED WSN
DEDICATED TO STRUCTURAL HEALTH MONITORING**

TECHNICAL NOTE

DATA ACQUISITION MODE

USER MANUAL

BEANDEVICE USER GUIDE

OVERVIEW

The **Beandevic**[®] **AVX-DAQ-T** is a versatile and time-synchronized wireless DAQ System compatible with temperature and analog sensors:

- Thermocouple E/K/S
- PT100: 3-wires and 4-wires
- Analog voltage sensors (up to 4.096V or $\pm 2.048V$)

The Data Acquisition module (4 channels) is based on a 24-bit Delta-Sigma architecture with selectable analog voltage range. Small and non-intrusive, the **Beandevic**[®] **AVX-DAQ-T** comes with strong mechanical features: waterproof (IP67), lightweight (98g), and small enclosure (48mm x 39mm x 24mm).

No need to use an external power manager, the **Beandevic**[®] **AVX-DAQ-T** integrates a smart power manager and can be power supplied by both USB (5V maximum) and energy harvesting power source (Solar, Vibration, Heat).

IR-UWB (Impulse Radio Ultra Wide Band) radio technology comes with strong features:

- Operates in uncrowded frequencies 3.5GHz to 6.5 GHz
- Jamming awareness mechanism
- Time synchronization with $\pm 5\mu s$ of accuracy

Store&Forward+ function developed by Beanair enables a lossless & deterministic data transmission.

HOW DOES IT WORK ?



MAIN FEATURES

- ✓ IR-UWB (Impulse Radio Ultra Wide Band) radio technology
- ✓ 24-bits delta-sigma ADC with 4 multiplexed channels
- ✓ DAQ Module designed for: PT100 (3-wire or 4-wire), Thermocouple E, K and S and analog sensors (strain gauge, pressure ...)
- ✓ Compatible with any kind of energy harvester source (Solar, TEG, Vibration...)
- ✓ Maximum sampling rate : 500SPS (4 channels enabled) , 2SPS (1 channel enabled)
- ✓ Store&Forward+ Lossless & deterministic data transmission

TECHNICAL SPECIFICATIONS

Product Reference

BND-AVX-DAQ-T

DAQ (Data acquisition) specifications

Number of sensor channels	4 multiplexed channels
A/D Converter	24-bit delta sigma
Sensor compatibility	Thermocouple E,K,S PT100 : 3-wire and 4-wire Analog voltage sensor
Measurement range (for analog voltage sensor only)	Bipolar configuration : ± 1.5 mV to ± 2.048 V Unipolar configuration: 3mV to 4.096V User configurable from the supervision software
Non-linearity error	15 ppm
Measurement accuracy (@25°C)	$\pm 0.1\%$ on full scale
Sensor Connector	Robust M8-8Pin socket , IP67 Rating

External Sensor Power Supply

Excitation voltage	5volts, Maximum Current : 25 mA
Accuracy(@25°C)	$\pm 0.2\%$

Over-the-air configuration (OTAC) parameters

Data Acquisition mode	Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour Alarm Low Duty Cycle mode: 1s to 24 hour Streaming Mode: 100 SPS by default Alarm Streaming Mode: 100 SPS by default
Sampling Rate (SPS = samples per second)	Minimum: 1 SPS Maximum: 400 SPS (4 channels enabled) or 2000 SPS (1 channel enabled)
Alarm Threshold	2 high levels alarms & 2 low levels alarms
Sensor power supply	Enable/Disable sensor power supply
Power Mode	Sleeping with network listening & Active

RF Specifications

Wireless Stack	IEEE 802.15.4A - IR-Ultra Wide Band
WSN Topology	Peer-to-peer/ Star
Raw data rate	6.5 Mbits/s maximum
RF Characteristics	3.5GHz up to 6.5 GHz – 6 Channels
RF Transmit power	-14dBm or -10dBm
Maximum Radio Range	60m (L.O.S.) at 110 Kbits/s
WSN Diagnostic tool	<ul style="list-style-type: none"> · Energy Scan for choosing a suitable RF Channel · BeanDevice® PER (Packet Error Rate) calculation · LQI (Link Quality Indicator) · RF channels Blacklist

Time Synchronization

Time-synchronization accuracy (25°C)	±5µs
TCXO stability over temperature	±5ppm

Environmental and Mechanical

Enclosure	Black anodized aluminum, waterproof IP67 (Nema 6) – Fire Protection : ULV94/Getex Enclosure dimensions L x l x h : 48 mm x 39 mm x 24 mm Weight : 98g
Shocks resistance	100g during 11ms
Operating Temperature	- 20 °C to +65 °C

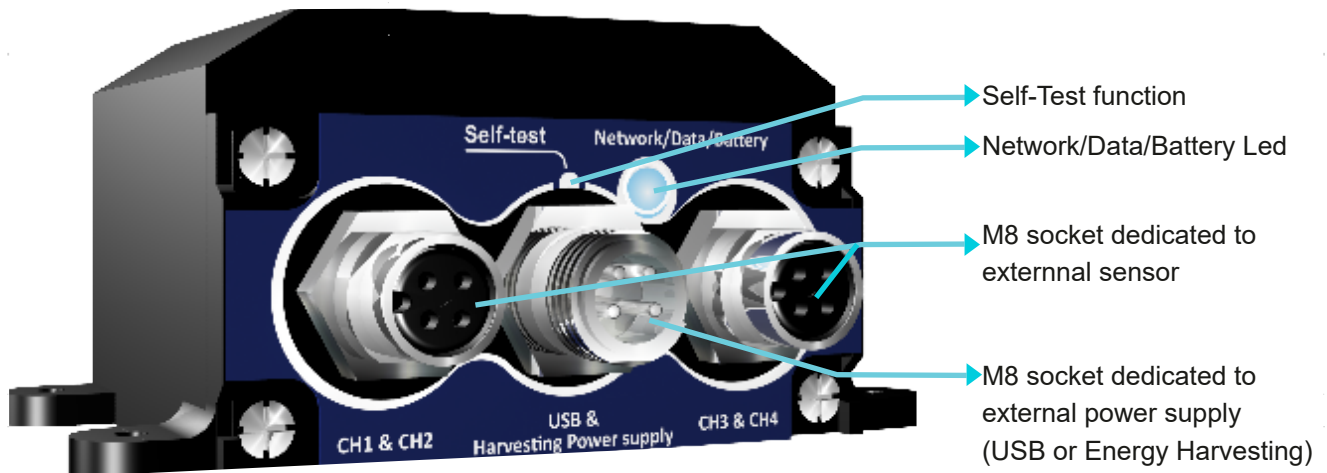
Beandevic Power supply

Integrated battery charger	<ul style="list-style-type: none"> · Integrated Lithium-ion battery charger with high precision battery monitoring · Battery Temperature monitoring
Current consumption @ 3,3V	<ul style="list-style-type: none"> · During data acquisition : 70mA to 130 mA (depends on external sensor power supply) · During Radio transmission : 60 mA @ 0dBm · During sleeping: < 65 µA
External power supply	+4,8v to +17,8v
Rechargeable battery	Lithium-Ion rechargeable battery capacity of 260 mAh

Options

Calibration certificate	Calibration certificate linked to German and international standards (DaKKS)
-------------------------	--

BEANDEVICE FRONT VIEW



CONTACT US

FOR MORE INFORMATION :

info@beanair.com

Visit our website : www.space-wireless.com

OUR YOUTUBE CHANNEL :



Watch our featured videos on Youtube

VISIT OUR WEBSITES



VISIT US !