Features at a Glance

Sentrius™ BT610 I/O Sensor + Ultrasonic/Pressure Assemblies

Open Development device

Long Range Bluetooth 5 Sensor + Ultrasonic/Pressure Assemblies (**sold separately**)

OPEN DEVELOPMENT DEVICE

Develop your own application to gather sensor data from the harshest environments and ensure the wireless signal gets through.

MULTIPLE SENSOR INTERFACE OPTIONS FOR ULTIMATE DESIGN CHOICE

Analog (voltage or current), digital inputs, dry contact, digital outputs, I2C, UART, SPI, and external sensor power source.

BROAD CERTIFICATION AND APPROVALS

Fully certified for FCC, ISED, CE, UKCA, MIC, and AS/NZS as well as Bluetooth SIG listing.

ZEPHYR BASED OPEN-SOURCE FIRMWARE

Application development environment using nRF Connect SDK / Zephyr RTOS SDK for customizable applications

PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Partner with Ezurio's Tier 2 support and engineering to help configure and deploy your application.

Ezurio's **Sentrius™ BT610** I/O Sensor with Bluetooth 5 instantly turns your wired sensors into an IP67-rated battery- operated wireless node, providing robust, secure, and cloud ready messaging. Leveraging Ezurio's BL654 module, it provides full Bluetooth 5 capabilities, including long-range LE Coded PHY support for 4x the range of Bluetooth 4.2, opening up industrial and equipment monitoring applications.

This configuration is designed with tank level monitoring in mind, enabling customers to develop their own application on the device to remotely monitor tank fluid levels using ultrasonic and/or pressure sensors. It enables users to read and report sensor data to the cloud and define alarm conditions.

There are two application development paths on offer;
- Using our Canvas platform firmware and sample applications as the basis for your application giving a head start on your development
- Ground up using Zephyr RTOS board files provided by Laird Connectivity

- **Software / RTOS Environment:**
  - nRF Connect SDK / Zephyr RTOS SDK for customizable applications
- **Option for Canvas Device Management**
  - Application development environment to develop Canvas device management
  - Advanced deployment tools including mobile app (Android and iOS) to register devices, and engineering services support.
- Supports up to **1x ultrasonic** and **2x pressure** sensors
- **Comprehensive Certifications** for FCC, ISED, CE, UKCA, AS/NZS, MIC
- **Industrial temperature range** (-40º to +85º C)
- **Industrial IP67 enclosure**
- **Industry-leading support** works directly with our engineers to help customize and deploy your design.
- **Replaceable large capacity battery**

Tank Monitoring

Level Monitoring

Shared Specifications

Category	Feature	Specification
Chipset	Bluetooth® 5	Ezurio BL654 module with Nordic nRF52840
	Processor	Cortex M4F – 1 MB Flash and 256 k RAM
Antenna	Integrated	Ezurio FlexPIFA
Interfaces	Wired	Internal screw terminal block for sensor connections
		Relevant to this focused application: 4x Analog inputs, 1x sensor power source (supporting 2x sensors)
		Refer to BT610 - Hardware Configuration and Installation Guide for sensor connection guidance.
	Buttons	2x buttons (accessible with cover removed) for reset, configuration, and pairing
	Magnet switch	1x for pairing
	LED Indicator	Red/green indicator visible outside housing for configuration, pairing, and activity indication
Power	Battery	3.6V Lithium Thionyl Chloride AA size - replaceable
Software	Configuration	Application development environment using nRF Connect SDK / Zephyr RTOS SDK for customizable applications
		Example applications provided as support
	Device Manager	Canvas Device Management can be enabled by customer Contact Ezurio for details.
	Programming	Field accessible 10-pin ARM Cortex micro header (cover removed)
Device Programming	Tools	Ezurio USB-SWD Programming Kit (453-00062-K1)
		6 Pin Dupont Connector Male-to-Female header jumper wires cable
Regulatory	Approvals	FCC, ISED, CE, UKCA, AS/NZS, MIC, and Bluetooth SIG
Physical	Dimensions	126.5 mm x 81.5 mm x 40 mm
Environmental	Operating Temp.	-40° to +85°C
Enclosure	Housing	IP67 moulded Polycarbonate plastic housing with pressure equalizing vent and removable cover
	Tamper Detection	Indication provided when cover is removed during operation
	Cable Glands	4x M12 waterproof inlets with IP-rated gaskets for wiring to external sensors
	Plugs	3x M12 waterproof plugs with IP-rated gaskets to cap off inputs where not required
	Mounting	Screws, bracket mounts
Accessories	Included	Magnet (for external activation of pairing mode)
Warranty		1 Year
Customization	Options**	Branding on front label, packaging, or mobile app. Enclosure colors. Custom firmware

**Dependent on commercial case

ULTRASONIC SENSOR (133-00723)

The Ultrasonic sensor enables the BT610 to measure the distances between the sensor and objects such as tank level / bin level applications. A maximum of 1 individual ultrasonic sensor is supported per BT610

Feature	Specification
Sensor Operating Temperature	-40°C to +65°C
Max. measurement distance	10 m
Min.measurement distance	50 cm
Sensor resolution	1 cm
Ultrasonic sensor cable Length	914 mm (+/152 mm)
Ultrasonic sensor dimensions	43.8 mm diameter x 77 mm length
Environmental	IP67 rated sensor
Customization Options*	Ultrasonic sensor cable length, measurement distances

*Dependent on commercial case

PRESSURE SENSOR (133-00724)

The pressure sensor enables the BT610 to measure the pressure in a gas, liquid, or vapor supply lines and wirelessly report the measurement. A maximum of **up to 2** individual pressure sensors is supported per BT610

Feature	Specification
Sensor Operating Temp.	-20°C to +80°C
Media	Gas, vapor, liquid
Pressure Type	Absolute
Full Scale Pressure	300 PSI
Full-scale Accuracy	±0.5 % typical
Response Time	<100 ms
Port/Fitting	¼" NPT
Housing	Wetted part: ASTM S31603 (AISA316L) Housing: ASTM S30400 (AISI304)
Cable length	2m (+/-20 mm)
Supply voltage	+5VDC, 20 mA, 50 mA peak (<100 msec)
Customization Options*	Cable length, full scale pressure, port/fitting

*Dependent on commercial case

ORDERING INFORMATION

Note: Sensor cable assemblies sold **separately**. Order a BT610 I/O Sensor in addition to your chosen sensor assemblies.

Part	Description
450-00121-K1	Sentrius™ BT610 I/O Sensor – including magnet kit
450-00136B	Sentrius™ BT6xx Magnet Kit – bulk (50x magnets)

CABLE ASSEMBLIES

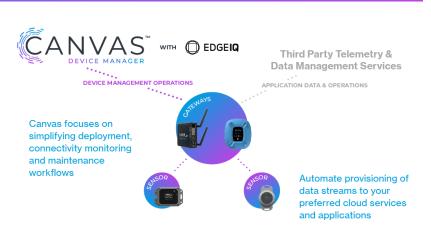| Part	Description
133-00723	Sentrius™ BT6xx Ultrasonic Sensor Assembly
133-00724	Sentrius™ BT6xx Pressure Sensor Assembly
133-00724B	Sentrius™ BT6xx Pressure Sensor Assembly – BULK carton 8 pcs

Introducing

CANVAS™
DEVICE MANAGER

Ezurio's industry leading IoT sensors and gateways are deployed and successfully enhancing business outcomes for customers every day. As these systems grow, ensuring uptime poses larger, more complex tasks demanding additional tools to manage.

Introducing Canvas™ Device Manager, our device management platform that simplifies workflows for configuration and maintenance of IoT device deployments. Easily setup your devices, monitor performance, and keep software up to date across your entire IoT device fleet.

Remote Device Management Platform

Canvas Device Manager expands our world class hardware with software services that support key device management workflows. Product developers benefit from a cohesively designed hardware + software solution ensuring robust connectivity is maintained in the field. Canvas Device Manager will continue to grow alongside our products ensuring compatibility across the ecosystem. Get started with our gateway and sensor open development devices today.

CANVAS™ DEVICE MANAGER WITH **EDGEIQ**

Third Party Telemetry & Data Management Services

DEVICE MANAGEMENT OPERATIONS

APPLICATION DATA & OPERATIONS

Canvas focuses on simplifying deployment, connectivity monitoring and maintenance workflows

GATEWAYS

SENSOR

SENSOR

Automate provisioning of data streams to your preferred cloud services and applications

Why Device Management?

Control your devices
Remotely manage device parameters and monitor performance, keeping your IoT-driven services and revenue streams online.

Deliver end-to-end solutions
View and organize large numbers of devices to quickly build and maintain IoT solutions for your enterprise customers.

Cut the cost of ownership
Reduce time-to-market with pre-provisioned devices, remotely apply software updates and rapidly scale up your solutions.

Ensure your devices are secure
Remotely deploy software updates to your fielded devices, allowing rapid response to the accelerating pace of security attacks.

Keep your devices compliant
Ensure devices are configured the way you need to keep your valuable data streams online.

A path to scalability
API-based access to devices reduces the need for on-site assistance by automating management of a large number of IoT devices.

Supported Features

- Fleet Management
- Provisioning
- Monitoring & Alerts
- Software Management
- Security

Learn more at ezurio.com/iot-software/canvas-device-manager