

Features at a Glance

OPEN DEVELOPMENT DEVICE

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

RUGGED PRODUCT WITH LONG RANGE BLUETOOTH LE CONNECTIVITY

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, ISCED, CE, UKCA, AS/NZS, RCM, and MIC 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 Laird Connectivity's Tier 2 support and engineering to help configure and deploy your application.



Sentrius™ BT610 I/O Sensor

Long Range Bluetooth 5 Sensors

- **Full Bluetooth 5** features inc. LE Coded PHY (4x Bluetooth Range)
- **Open development device**
- **IP67-Certified** enclosure with vent
- **Replaceable large-capacity battery**
- **High-gain internal antenna** with IPEX locking connector
- Built on our experience developing the world's **longest-range Bluetooth sensors**
- **Industrial Temp. Range** (-40° to +85° C)

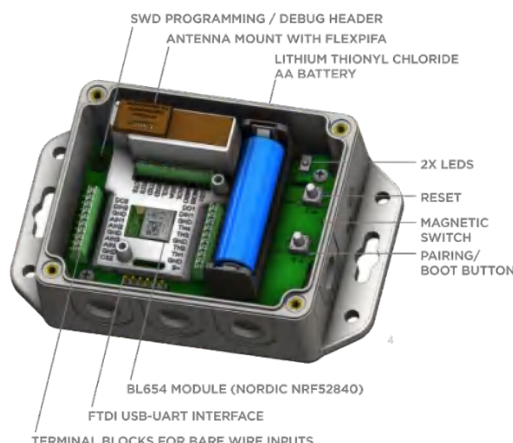
Laird Connectivity's **Sentrius™ BT610** I/O Sensor is an open development device with Bluetooth 5 enabling you to develop the application to turn your wired sensors into IP67-rated battery-operated wireless nodes, providing robust, secure, and cloud ready messaging. Leveraging our BL654 module, it provides full Bluetooth 5 capabilities, opening up industrial and equipment monitoring applications.

The BT610 enables customers to develop their own application on the device to monitor wide range of interface options as a standalone product or can be coupled with off the shelf sensors for a variety of applications, such as HVAC monitoring, three-phase AC current sensing, and tank monitoring solutions. These configurations enable 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.
- **Multiple Industrial Sensing Inputs:**
 - Analog Inputs (0-10 VDC or 4-20 mA)
 - Digital Inputs (Dry contact)
 - Digital Outputs
 - I2C/SPI + UART
 - 3V or 5V Sensor Power Source
- **Comprehensive Certifications** for FCC, ISCED, CE, UKCA, AS/NZS, RCM, MIC + Bluetooth SIG
- **Industry-leading support and product development teams:** our engineers help customize and deploy your design.



Smart Metering / Remote Sense



Automation / Monitoring And Control



Agricultural and Rural IoT / M2M Applications

Shared Specifications

Category	Feature	Specification
Chipset	Bluetooth® 5	Laird Connectivity BL654 module with Nordic nRF52840
	Processor	Cortex M4F – 1MB Flash and 256k RAM
Antenna	Integrated	Laird Connectivity FlexPIFA
Interfaces	Wired	Internal screw terminal block for sensor connections
		4x Analog Inputs – Individually SW configurable as voltage (0-10 VDC) or current (4-20 mA)
		2x Digital Inputs – Dry-contact / 0-30 VDC
		2x Digital Outputs – Open drain, 0-30 VDC, 0.5A maximum current for a resistive load
		1x SPI – 3.3V logic, two individual SPI select lines
		1x I2C – 3.3V logic, 100/400 kbps supported
		1x UART – 3.3V logic, 1.2 – 1000 kbps, full-duplex with flow control support (RTS, CTS)
		1x Sensor Power source, SW selectable 3.3V/5V. 20 mA output, 50 mA peak current (<100 msec)
		Refer to BT610 - Hardware Configuration and Installation Guide for sensor connection guidance.
		Buttons
	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 Laird Connectivity for details.
	Programming	Field accessible 10-pin ARM Cortex micro header (cover removed)
Device Programming	Tools	Laird Connectivity 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 connectors 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

ORDERING INFORMATION

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

OPTIONAL CABLE ASSEMBLIES

Part	Description
133-00719	Sentrius™ BT6xx Thermistor Sensor Cable Assembly
133-00719B	Sentrius™ BT6xx Thermistor Sensor Cable Assembly – BULK carton 40 pcs
133-00720B	Sentrius™ BT6xx 0-20 Arms AC Current Sensor Assembly
133-00721	Sentrius™ BT6xx 0-20 Arms AC Current Sensor Assembly – BULK carton 15 pcs
133-00721B	Sentrius™ BT6xx 0-150 Arms AC Current Sensor Assembly
133-00722	Sentrius™ BT6xx 0-150 Arms AC Current Sensor Assembly – BULK carton 15 pcs
133-00722B	Sentrius™ BT6xx 0-500 Arms AC Current Sensor Assembly
133-00720B	Sentrius™ BT6xx 0-500 Arms AC Current Sensor Assembly – BULK carton 15 pcs
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

Laird Connectivity'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.



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 lairdconnect.com/iot-software/canvas-device-manager