Features at a Glance

RUGGED PRODUCT WITH LONG RANGE 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, ISED, EU, RCM, and MIC as well as Bluetooth SIG listing.

OVER-THE-AIR UPDATES AND CLOUD PLATFORM CAPABLE

Stay up to date with OTA capabilities from supporting mobile applications as well as Cloud deployment with integrated support with Laird Connectivity's Sentrius™ gateways.

PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Partner with Laird Connectivity's Tier 2 support and engineering to help configure and deploy your application.
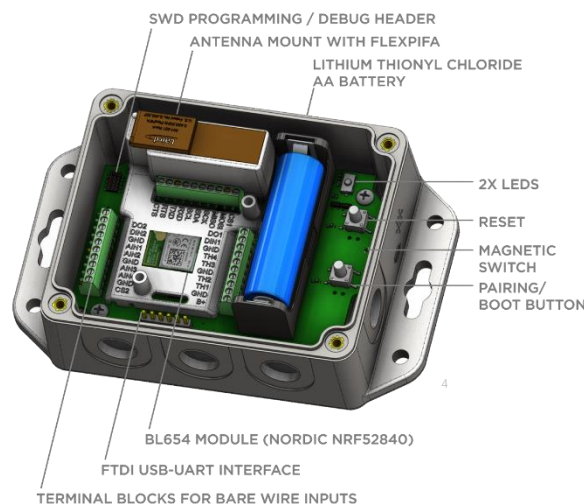
Laird™ CONNECTIVITY

Sentrius™ BT610 I/O Sensor

Long Range Bluetooth 5 Sensors

- **Full Bluetooth 5** features inc. LE Coded PHY (4x Bluetooth Range)
- **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** (-40º to +85º C)

Laird Connectivity's **Sentrius™ BT610** I/O Sensor with Bluetooth 5 turns 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 supports a wide range of interface options as a standalone product or can be coupled with off the shelf sensors for a variety of pre-canned 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, define alarm conditions, and configure the sensors through an associated mobile app (Android and iOS).

- **Two Software Options:**
  - Ready-to-deploy Binary Software + Mobile App
  - Application development environment using nRF Connect SDK / Zephyr RTOS SDK for customizable applications
- **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, ISED, EU, RCM, MIC + Bluetooth SIG
- **Advanced deployment tools** including mobile app (Android and iOS), sensor to cloud ecosystem, and engineering services.
- **Industry-leading support and product development teams:** our engineers help customize and deploy your design.

SWD PROGRAMMING / DEBUG HEADER
ANTENNA MOUNT WITH FLEXPIFA
LITHIUM THIONYL CHLORIDE AA BATTERY
2X LEDS
RESET
MAGNETIC SWITCH
PAIRING/ BOOT BUTTON
BL654 MODULE (NORDIC NRF52840)
FTDI USB-UART INTERFACE
TERMINAL BLOCKS FOR BARE WIRE INPUTS

Zephyr™ Project

NORDIC SEMICONDUCTOR

Bluetooth®

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	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	Mobile App – Android & iOS – Configuration and/or sensor data IoT Gateway – Sensor data to Cloud
	OTA Update	Mobile App – Android and iOS – OTA firmware update
	Programming	Field accessible 10-pin ARM Cortex micro header (cover removed)
Regulatory	Approvals	FCC, ISED, EU, ASNZS, 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