

## MULTI FUNCTIONAL LORA SENSOR PLATFORM FOR OPEN/CLOSED, COLD CHAIN MONITORING



Laird Connectivity's Sentrius™ RS1xx Multi-Sensor is a **battery powered, long range sensor platform** leveraging the benefits of LoRaWAN and Bluetooth Low Energy (BLE) connectivity. Its small, rugged form factor contains superior RF performance and multiple sensor capabilities including **Open/Closed** detection alongside **Temp/Humidity**, making it a perfect fit for cold chain applications.

The new Multi-Sensor includes an external IP67 rated magnetic reed switch. It's used to detect and report the **Open/Closed** state of a door. A dwell time parameter is set so that if the door is open for the duration of the open dwell time, an open notification is **sent over LoRaWAN**. Users can choose how often to receive messages while the door remains open.

At its core, the RS1xx Multi-Sensor utilizes Laird's field-proven and reliable RS1xx Series hardware, providing **LoRaWAN** options in **868, 915, and 923 MHz** frequencies. The RS1xx Multi-Sensor works with Laird's Sentrius™ RG1xx Gateway for simple out-of-the-box integration and is compatible with 3<sup>rd</sup> party Cloud and LoRa network ecosystem partners.

- **Multi-wireless:** LoRaWAN (868/915/923 MHz) and Bluetooth v4.2 (Central/Peripheral) with fully integrated high-performance antennas
- **External Open/Closed Sensor:** IP67 rated Open/Closed contact sensor assembly with a 1830mm cable length
- **Internal Temp/Humidity:** Integrated Temperature and Humidity capabilities
- **Fully certified** for FCC/IC/CE/ASNZS/NCC and Bluetooth SIG
- **Simple wireless configuration** using mobile application and BLE.
- **Harsh Environments:** Robust IP65 sensor enclosure to serve many varied installation needs
- **Integrated out of the box networks:** Default configuration with Laird RG1xx gateways for simple, out-of-the-box cloud connectivity

## FEATURES AT A GLANCE



### YOUR WIRELESS NETWORK

Develop a fully-owned private LoRaWAN network to capture, route, and process IoT data for your application - choose from RM1xx modules, RS1xx finished sensors or RG1xx Gateways



### RUGGED DURABILITY WITH A BROAD SENSOR ARRAY

Robust enclosures provide a robust and resilient platform for recording and delivering sensor data from a range of harsh environments



### COMPREHENSIVE SECURITY AND RELIABILITY

Robust multi-layer security at each interface to safeguard your network at every level



### BROAD CERTIFICATION AND APPROVALS

Ready for deployment in multiple regulatory domains - FCC, IC, CE, ASNZ, NCC and Bluetooth SIG listing



### PLATFORM FOR BUILDING ACTIONABLE IOT INTELLIGENCE

Route sensor data to the Cloud with Laird's simplified wireless connectivity deployment



### PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Our Tier-2 support and engineering teams work to help configure and deploy your application

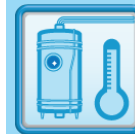
## APPLICATION AREAS



Cold Chain Management and Food Safety



Agricultural Humidity and Environmental Monitoring



Industrial Heating and Cooling

## KEY SPECIFICATIONS

CATEGORY	FEATURE	SPECIFICATION
Chipset	LoRa®	Semtech SX1272
	Bluetooth®	Nordic nRF51822 – 256 k / 32 k
LoRa	Frequencies	863 – 870 MHz (EU), 902 – 928 MHz (US), 915 – 928 MHz (AU + AS923)
Integrated Sensors	Temperature Accuracy Ranges	-10° to +85°C (+/-0.4°C) -40° to +125°C (+/-0.9°C)
	Humidity Accuracy Ranges	0 – 90% RH (+/- 3%) 90 – 100% RH (+/- 4.5%)
External Open/Closed Sensor (magnet/contact)	Range	Operating Distance: 25 – 35mm
	Dimensions	Overall Length – inc. cable & connector: 1830mm, ±30mm Sensor Terminals – 29mm (L) x 19mm (W) x 7mm (H)
	Mounting	4 screw holes (screws NOT included) plus 3M Adhesive backing tape
Antenna	Integrated	Custom Laird antenna for 868, 915, or 923 MHz Ceramic chip antenna for 2.4 GHz
Power	Battery	2 x AA - replaceable
Software	Mobile Application	Android & iOS – Remote sensor display / configuration + Firmware Update
Storage	Data logging	10,000 measurements (256 k of flash memory available)
LED	Status	3 – BLE and LoRa status
Button	User Input	Multi-use – default BLE Pairing
Physical – Main Housing	Dimensions	116 x 131 x 34 mm
Environmental	Enclosure Operating Temp.	-25°C to +50°C (temperature range dictated by standard AA battery chemistry)
	Open/Closed Assembly Operating Temp.	-40°C to +85°C
	Storage Temperature	-40° to +50°C
Regulatory	Approvals	FCC, IC, CE, ASNZ, NCC Bluetooth SIG
Warranty		1-year Warranty



The Sentrius™ RS1xx LoRa/BLE multi-sensor features an integrated antenna and integrated temperature/humidity sensor in a small rugged IP65 enclosure with an external IP67 Open/Closed contact sensor.

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
455-00040	Sentrius™ RS1xx Multi-Sensor – 915MHz External Open/Closed + integrated Temp / Humidity – <b>North America</b>
455-00041	Sentrius™ RS1xx Multi-Sensor – 868MHz External Open/Closed + integrated Temp / Humidity - <b>Europe</b>
455-00071	Sentrius™ RS1xx Multi-Sensor – 923MHz External Open/Closed + integrated Temp / Humidity - <b>Taiwan</b>
455-00072	Sentrius™ RS1xx Multi-Sensor – 923MHz External Open/Closed + integrated Temp / Humidity – <b>New Zealand</b>
455-00073	Sentrius™ RS1xx Multi-Sensor – 923MHz External Open/Closed + integrated Temp / Humidity – <b>Hong Kong</b>
455-00074	Sentrius™ RS1xx Multi-Sensor – 915MHz External Open/Closed + integrated Temp / Humidity - <b>Australia (AU915)</b>
455-00075	Sentrius™ RS1xx Multi-Sensor – 923MHz External Open/Closed + integrated Temp / Humidity - <b>Australia (AS923)</b>
455-00099	Sentrius™ RS1xx Multi-Sensor – 923MHz External Open/Closed + integrated Temp / Humidity – <b>Malaysia (AS923)</b>
455-00100	Sentrius™ RS1xx Multi-Sensor – 923MHz External Open/Closed + integrated Temp / Humidity – <b>Singapore (AS923)</b>
455-00046	Open/Closed cable assembly only – 1830mm length cable ( <b>Single</b> )
455-00046B	Open/Closed cable assembly only – 1830mm length cable ( <b>Bulk</b> – Carton Quantity 50pcs)

**Note:** The open/closed cable assembly is not included with the Sentrius sensor enclosure and each part must be ordered individually. It's a 1-2-1 ratio of region-specific sensor to cable assembly.