

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 3rd 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

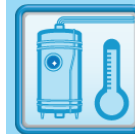
APPLICATION AREAS



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