Secure, Scalable Wireless Sensors for Long Range IoT Applications

Ezurio'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 Ezurio's field proven and reliable RS1xx Series hardware, providing **LoRaWAN** options in **868, 915, and 923 MHz** frequencies. The RS1xx multi-sensor works with Ezurio'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/IMDA 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 Ezurio RG1xx gateways for simple, out-of-the-box cloud connectivity

Key Features

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

Rugged Durabilty 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 Reliabilty
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, ASNZS, NCC, IMDA and Bluetooth SIG listing.

Platform for Building Actionable IoT Intelligence
Route sensor data to the cloud with Ezurio's simplified wireless connectivity deployment.

Personal Support for Your Implementation
Support works with Ezurio engineering to help configure and deploy your application.

Application Areas

- **Cold Chain Management and Food Safety**
- **Agricultural Humidity and Environmental Monitoring**
- **Industrial Heating and Cooling**

Interested in our RS1xx External Series?
Visit https://www.ezurio.com/iot-devices/lorawan-iot-devices/sentrius-rs1xx-lora-enabled-sensors

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%) The humidity sensor is designed to work in environments where humidity is maintained between 20%RH and 80%RH. The sensor can work below 20%RH and above 80% RH, however the environment must be non-condensing.
External Open/Closed Sensor (magnet/contact)	Range	Typical operating range of 25 ~ 35mm at ambient temperature. Actual range may vary depending on environment.
	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 Ezurio 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. Open/Closed Assembly Operating Temp.	-25°C to +50°C (temperature range dictated by standard AA battery chemistry) -40°C to +85°C
	Storage Temperature	-40° to +50°C
Regulatory	Approvals	FCC, IC, CE, ASNZ, NCC, IMDA and 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 – 915 MHz External Open/Closed + integrated Temp / Humidity – North America
455-00041	Sentrius™ RS1xx Multi-Sensor – 868 MHz External Open/Closed + integrated Temp / Humidity - Europe
455-00071	Sentrius™ RS1xx Multi-Sensor – 923 MHz External Open/Closed + integrated Temp / Humidity - Taiwan
455-00072	Sentrius™ RS1xx Multi-Sensor – 923 MHz External Open/Closed + integrated Temp / Humidity – New Zealand (AS923)
455-00073	Sentrius™ RS1xx Multi-Sensor – 923 MHz External Open/Closed + integrated Temp / Humidity – Hong Kong
455-00074	Sentrius™ RS1xx Multi-Sensor – 915 MHz External Open/Closed + integrated Temp / Humidity - Australia (AU915)
455-00075	Sentrius™ RS1xx Multi-Sensor – 923 MHz External Open/Closed + integrated Temp / Humidity - Australia (AS923)
455-00100	Sentrius™ RS1xx Multi-Sensor – 923 MHz External Open/Closed + integrated Temp / Humidity – Singapore
455-00046	Open/Closed cable assembly only – 1830 mm length cable (**Single**)
455-00046B	Open/Closed cable assembly only – 1830 mm length cable (**Bulk** – Carton Quantity 50pcs)

Note: The Open/Closed cable assembly is **not** included with the Sentrius sensor enclosure. Each part must be ordered individually. It's a 1:1 ratio of region-specific sensor enclosure to sensor cable assembly. Additionally, sensor cable assemblies available as part of the Sentrius product range are **not** interchangeable between Sentrius sensor enclosures (blue housing) with an RJ45 port. You must connect the appropriate sensor cable assembly with the intended enclosure. If in doubt, please check the product description on the sensor label/part number on the packaging.

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