SECURE, SCALABLE WIRELESS SENSORS FOR LONG RANGE IOT APPLICATIONS

Laird Connectivity's Sentrius RS1xx RTD external temperature probe (smoker) is a **battery-powered**, **long range** sensor platform that leverages the benefits of LoRaWAN and Bluetooth Low Energy (BLE) connectivity.

Packaged in a small, rugged form factor containing **superior RF performance** and connected to a stainless-steel probe measuring just 100 millimeters (4 inches) in length, housing a **Class A tolerance PT100 RTD** with a measurement temperature range of 0°C to +180°C (+32°F to +350°F) This new external temperature probe is ideally designed for monitoring low and slow cooking temps mounted inside a smoker and transmitting your **data over LoRaWAN.**

Equally, the probe could be used in any environment from 0°C to +180°C where a shorter stainless-steel probe would be beneficial.

At its core, the RS1xx external RTD temperature sensor utilizes Laird Connectivity's field proven and reliable RS1xx Series hardware, providing **LoRaWAN** options in **868, 915, and 923 MHz** frequencies. The RS1xx works with Laird Connectivity's Sentrius RG1xx Gateway for simple out-of-the-box integration and is compatible with third-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 Sensor Probe:** Class A tolerance PT100 RTD temperature sensor with 1320 mm length, cable
- **Fully certified** for FCC/IC/CE/ASNZS/NCC and Bluetooth SIG
- **Simple wireless configuration** using mobile application and BLE
- **Harsh Environments:** Robust IP65 enclosure to serve many varied installation needs
- **Integrated out of the box networks:** Default configuration with Laird Connectivity's RG1xx gateway 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 Connectivity'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

Food Safety Management

Agricultural 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)
Temperature Probe	Type	Class A tolerance PT100-M222 RTD (IEC 60751 standard)
	Operating Range and Variance	0°C (32°F) to +180°C (350°F) +0.65°C at 0°C through to +1.01°C at 180°C [Class A = ±(0.15 + 0.002*t)°C] (Includes MAX31865 A/D +/- Accuracy 'Over All Operating Conditions' of 0.5°C)
	Dimensions and Connector	Cable length – 1320 mm +20 mm, stainless-steel shaft - 4.0 mm +0.2 mm (dia.) x 100 mm +2 mm (length) RJ45C Connector (IP66~68 rated), user connected
Antenna Power	Integrated	Custom Laird Connectivity antenna for 868, 915, or 923 MHz Ceramic chip antenna for 2.4 GHz
	Battery	2 x AA - replaceable
Software	Mobile Application	Android and iOS – Remote sensor display and/or 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	Enclosure Dimensions Connector	116 x 131 x 34 mm RJ45C Jack (IP66~68 rated), user connected
Environmental	Enclosure Operating Temperature	-25° to +50°C (temperature range dictated by AA battery chemistry, Alkaline/Lithium)
	Storage Temperature	-40° to +50°C
Regulatory	Approvals	FCC, IC, CE, ASNZ, NCC Bluetooth SIG
Warranty		1-year warranty

The Sentrius™ RS1xx LoRaWAN external RTD temperature probe (smoker) features integrated antennas, external temperature probe, and a rugged IP65 enclosure

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
455-00103	Sentrius™ RS1xx LoRaWAN – 915 MHz Ext. RTD Temperature Probe (Smoker) – North America
455-00104	Sentrius™ RS1xx LoRaWAN – 868 MHz Ext. RTD Temperature Probe (Smoker) - Europe
455-00105	Sentrius™ RS1xx LoRaWAN – 923 MHz Ext. RTD Temperature Probe (Smoker) - Taiwan
455-00106	Sentrius™ RS1xx LoRaWAN – 923 MHz Ext. RTD Temperature Probe (Smoker) – New Zealand
455-00109	Sentrius™ RS1xx LoRaWAN – 923 MHz Ext. RTD Temperature Probe (Smoker) – Hong Kong
455-00110	Sentrius™ RS1xx LoRaWAN – 915 MHz Ext. RTD Temperature Probe (Smoker) - Australia (AU915)
455-00111	Sentrius™ RS1xx LoRaWAN – 923 MHz Ext. RTD Temperature Probe (Smoker) - Australia (AS923)
455-00112	100 mm SS RTD Temp Probe, 4.00 mm OD, 1320 mm Length, Cable Assembly ONLY (**SINGLE**)
455-00112B	100 mm SS RTD Temp Probe, 4.00 mm OD, 1320 mm Length, Cable Assembly ONLY (**BULK** – Carton Quantity 50 pcs)

Note: The RTD external temperature probe 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.
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. Users must be sure to connect the appropriate sensor cable assembly with the intended enclosure. Please check the product description on the sensor label / part number on the packaging if in doubt.

Contact Sales - Americas: +1 262 375 4400   Korea: +82 10 2622 3935
                Europe: +44 1628 940 ext. 958   Hong Kong: +852 2923 0610

For documentation, software, sample apps and more visit:
https://www.lairdconnect.com/wireless-modules/lorawan-solutions/sentrius-rs1xx-lora-enabled-sensors