Sentrius™ RS1xx Series
External RTD Temperature Probe (Smoker)

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

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

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.

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