

DATASHEET  
**SFX-RT1x**



### Highlights

- OleumTech® field-proven technology running on the global Sigfox Low-Power Wide Area (LPWA) network
- SFX-RT11 available with a 2" to 18" RTD sensor
- SFX-RT12 supports third-party RTD sensors
- High accuracy of  $\pm 0.06\%$  @ 0 °C (RT11)
- Advanced local LCD display interface
- Powered by a replaceable internal battery pack
- Battery life up to 8 years<sup>1</sup>
- NEMA 4X / IP66 / -40 °C to 70 °C
- Industrially-hardened self-contained design
- A global solution – Zones RCZ1/2/4
- Remote antenna-ready option available
- Intrinsically Safe, Class I, Div 1 (Zone 0) certified



OleumTech Sigfox Ready Transmitters



Sigfox Base Stations



Sigfox Cloud™



Third-Party Customer IT

## Unlock the True Potential of IoT (Internet of Things)

### Easiest Way to Get Data in the Cloud

The OleumTech® Sigfox Ready SFX-RT11 and SFX-RT12 Wireless RTD Temperature Transmitters are designed for deployment anywhere in the world that Sigfox has network coverage. By leveraging the Sigfox Low Power Wide Area (LPWA) network, you can take advantage of the world's leading Internet of Things (IoT) connectivity service, offering a software-based communications solution where all the network and computing complexity is managed in the Sigfox CLOUD™.

### Designed for Use in Hazardous Locations

The SFX-RT11 and SFX-RT12 are certified for use in Class I, Division 1 (Zone 0) hazardous locations. They are intrinsically safe, designed not to cause a spark, and can be serviced without being removed from a process. The SFX-RT11 is a direct mount type that is available with a 4-wire Platinum 100 ohm Class A RTD sensor. The SFX-RT12 is designed to support a third-party RTD sensor: 2, 3, or 4-wire type.

### Inherently Secure

The Sigfox Ready Transmitters take advantage of the built-in firewall since they are not directly connected to the internet and do not use Internet Protocol. Layered on top of this secure foundation, OleumTech provisions each device with a unique symmetrical authentication key. Each message sent by the transmitter contains a cryptographic token that is computed based on this authentication key and verified by each Sigfox Base Station.

### Extremely Reliable

The Sigfox architecture is based on multiple base stations receiving each broadcasted and repeated message, building redundancy into the solution. Data Integrity, availability, and confidentiality are at the core of the offering.

# Technical Specifications

## HARDWARE FEATURES

Device Functionality	· Class I, Division 1 (Zone 0) IoT Wireless Transmitter Supporting RTD Sensors
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· OleumTech Sigfox Ready Transmitter Configuration Tool via RS232 Serial / Local Display Interface
ADC Resolution	· 24-bit High Resolution Delta-Sigma ADC
Local LCD Display	· 32-Character Display (16x2 Lines) with 4 Function Keys + Read Button
Displayable/Reportable Values	· Temperature Level / Battery Voltage
Device Diagnostics	· Health Tag: Battery Voltage

## RTD TEMPERATURE SENSOR

RTD Element	· Platinum 100 Ohm, Class A (RT11)
Temperature Coefficient	· 0.00385 (RT11)
Probe Lengths	· 2" to 18" / 30.5 to 45.5 cm in 1" / 25 mm Increments
Temperature Range	· RT11: -67 °F to 500 °F (-55 °C to 260 °C); RT12: Temperature Range Depends on Sensor
Accuracy	· RT11: ±0.06% @ 0 °C; RT12: Accuracy Depends on Sensor
Materials	· Probe Cover - Silver Coated Copper / Probe Insulation - PTFE

## WIRELESS COMMUNICATIONS

Sigfox Radio Zones/Regions Supported	· RCZ1: Europe, Oman, South Africa   Certificate ID: P_009D_53CD_01
	· RCZ2: USA, Canada, Mexico, Brazil   Certificate ID: P_009D_D78E_01
	· RCZ4: Australia, New Zealand, Colombia, Peru, Singapore   Certificate ID: P_009D_D78E_01

Wirelessly Connects To	· Sigfox Base Stations
Data Reporting Modes	· Interval Only

## CERTIFICATIONS & COMPLIANCE

EMC/EMI	<ul style="list-style-type: none"> <li>· FCC Part 15 (USA) / IC ICES-003 (Canada)</li> <li>· ACMA (Australia)</li> </ul>
Safety	<ul style="list-style-type: none"> <li>· Class I, Division 1, Groups A, B, C, D T3C; Ex ia IIC T3</li> <li>· Class I, Zone 0; AEx ia IIC T3</li> <li>· ATEX: Sira 13ATEX2142X; Ex ia IIC T3 Ga; II 1 G</li> <li>· IECEx: SIR 13.0054X; Ex ia IIC T3 Ga</li> </ul>

## MECHANICAL SPECIFICATIONS

Dimensions, RT11	· 5.5" (W) x 7.6" (H) x 4.4" (D) / 140 mm (W) x 193 mm (H) x 112 mm (D) - Excludes RTD Length
Dimensions, RT12	· 5.5" (W) x 12.3" (H) x 6.4" (D) / 140 mm (W) x 313 mm (H) x 163 mm (D) - Excludes RTD Length
Package Dimensions	· 10.25" (W) x 14" (H) x 6.5" (D) / 260mm (W) x 356mm (H) x 165mm (D)
Weight, RT11	· Net: 3.7 lbs / 1.7 kg; Gross: 5.25 lbs / 2.4 kg
Weight, RT12	· Net: 4.5 lbs / 2 kg; Gross: 6.5 lbs / 3 kg
Connection Fitting	· RT1: 1/2" NPT Male; RT2: 3/4" NPT Female
Enclosure Casing Material	· Aluminum, NEMA 4X, IP66
Mounting Holes	· 4x M5 Female Threads; Horizontal Spacing: 2.76" (70 mm); Vertical Spacing: 3.70" (94 mm)

## ELECTRICAL SPECIFICATIONS

Power Source	· SX1000-BP3, Internal 3.6 Vdc Lithium Battery
Internal Battery Life	· Up to 8 Years, Based on User Defined Reporting Intervals <sup>1</sup>

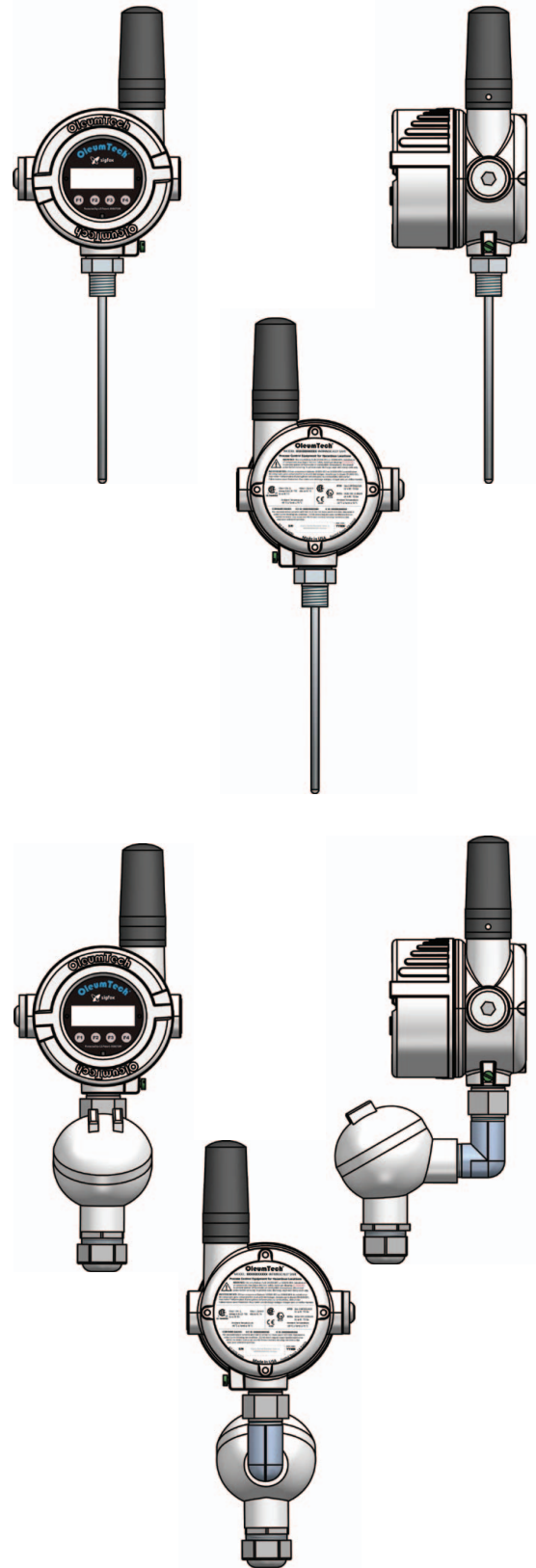
## GENERAL SPECIFICATIONS

Operating Conditions	· Ambient Temperature (Class I, Division 1 / Zone 0): -40 °F to 158 °F (-40 °C to 70 °C) / LCD: -20 °C to 70 °C
	· Ambient Temperature (ATEX/IECEx): -22 °F to 158 °F (-30 °C to 70 °C)
	· Humidity: 0 to 99 %, Non-Condensing

Warranty	· 2-Year Parts and Labor
Country of Origin	· USA

## ORDERING INFORMATION

Model Number(s)	· RCZ1: SFX-RCZ1-RT11 (Direct Mount, Includes RTD)   SFX-RCZ1-RT12 (Multi-Vendor)
	· RCZ2: SFX-RCZ2-RT11 (Direct Mount, Includes RTD)   SFX-RCZ2-RT12 (Multi-Vendor)
	· RCZ4: SFX-RCZ4-RT11 (Direct Mount, Includes RTD)   SFX-RCZ4-RT12 (Multi-Vendor)
Model Number(s) for Remote Antenna-Ready Option	· RCZ1: SFX-RCZ1-RT11-P (Direct Mount, Includes RTD)   SFX-RCZ1-RT12-P (Multi-Vendor)
	· RCZ2: SFX-RCZ2-RT11-P (Direct Mount, Includes RTD)   SFX-RCZ2-RT12-P (Multi-Vendor)
	· RCZ4: SFX-RCZ4-RT11-P (Direct Mount, Includes RTD)   SFX-RCZ4-RT12-P (Multi-Vendor)
Battery Model Number	· Use Only SX1000-BP3, 3.6 V Lithium Battery Pack
Configuration Cable	· SX1000-CC2, 20-ft All-in-One Configuration Cable



<sup>1</sup> Ambient temperature and 140 transmissions per day were used to calculate battery life. The data only applies to a new battery part number SX1000-BP3. Actual battery life may vary depending on environmental factors, application, and usage. Use data shown above only as general point of reference.

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