

DATASHEET
SFX-TR81



Highlights

- OleumTech® field-proven technology running on the global Sigfox Low-Power Wide Area (LPWA) network
- 2 user-configurable temperature inputs
- Supports 2, 3, and 4-wire RTD sensor(s)
- Supports type J and K Thermocouple sensor(s)
- 9-30 Vdc line-powered or optional battery
- Battery life up to 8 years¹
- IP66, -40 °C to 80 °C (-40 °F to 176 °F)
- Industrially-hardened self-contained design
- A global solution – Zones RCZ1/2/4
- Remote antenna-ready option available



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-TR81 Wireless Temperature Transmitter is 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™.

Deploy Anywhere

The SFX-TR81 is equipped with two user-configurable temperature inputs for general purpose use in non-hazardous locations. The RTD input mode supports Platinum-100 ohm 2/3/4-wire type RTD sensors. The Thermocouple input mode supports type J or K. RTD and Thermocouple inputs can be used in any mix or combination. Temperature sensors are sold separately.

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	· General Purpose IoT Wireless Transmitter with RTD and Thermocouple Inputs
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· OleumTech Sigfox Configuration Tool via RS232 (Mini-USB Port)
RTD Input(s)	· Supports RTD Sensor (PT-100 ohm), 2/3/4-wire type
Thermocouple Input(s)	· Supports Thermocouple Sensor Type J or K
Temperature Accuracy	· Sensor Dependent
Device Diagnostics	· Health Tag: Supply Voltage

WIRELESS COMMUNICATIONS

	· RCZ1: Europe, Oman, South Africa Certificate ID: P_009D_53CD_01
Sigfox Radio Zones/Regions Supported	· RCZ2: USA, Canada, Mexico, Brazil Certificate ID: P_009D_D78E_01
	· RCZ4: Australia, New Zealand, Colombia, Peru, Singapore Certificate ID: P_009D_C7B7_01
Wirelessly Connects To	· Sigfox Base Stations
Data Reporting Modes	· Interval only

CERTIFICATIONS & COMPLIANCE

EMC/EMI		· FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia)
Safety		· CAN/CSA-C22.2 No. 61010-1-2012 · UL Std. No. 61010-1-2012 · IEC/EN 61010-1-2010 · Device is not intended for use in hazardous locations

MECHANICAL SPECIFICATIONS

Dimensions	· 5" (W) x 12.8" (H) x 4.25" (D) / 127 mm (W) x 325 mm (H) x 108 mm (D)
Package Dimensions	· 10.25" (W) x 14" (H) x 6.5" (D) / 260 mm (W) x 356 mm (H) x 165 mm (D)
Weight	· Net: 3.0 lbs / 1.4 kg ; Gross: 4.0 lbs / 1.8 kg
Connection Fittings	· (3) 3/4" NPT Female (2 Plugged)
Enclosure Casing Material	· Aluminum, NEMA 4X, IP66
Mounting Holes	· (4) M5 Female Threads; Horizontal Spacing: 2.76" (70 mm); Vertical Spacing: 3.70" (94 mm)

ELECTRICAL SPECIFICATIONS

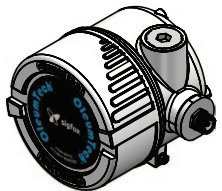
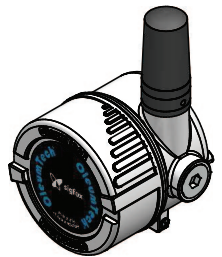
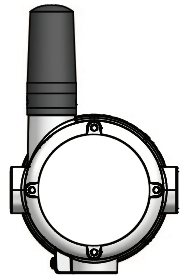
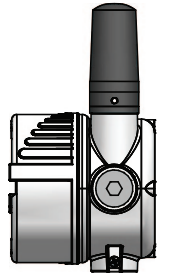
Power Source	· Internal 3.6 Vdc Lithium Battery and, or External 9-30 Vdc Power (Auto-Switching)
Internal Battery Life	· Up to 8 Years, Based on User Defined Reporting Intervals ¹
Power Consumption @ 9 Vdc	· Idle: ~6.79 mA / Transmit: ~149.87 mA
Power Consumption @ 30 Vdc	· Idle: ~10.58 mA / Transmit: ~60.27 mA

GENERAL SPECIFICATIONS

Operating Conditions	· Ambient Temperature (Non-Hazardous Applications): -40 °C to 80 °C (-40 °F to 176 °F) · Humidity: 0 to 99 %, Non-Condensing
Warranty	· 2-Year Parts and Labor
Country of Origin	· USA

ORDERING INFORMATION

Model Number(s)	· RCZ1: SFX-RCZ1-TR81 / Remote Antenna-Ready Option, N Connector: SFX-RCZ1-TR81-P · RCZ2: SFX-RCZ2-TR81 / Remote Antenna-Ready Option, N Connector: SFX-RCZ2-TR81-P · RCZ4: SFX-RCZ4-TR81 / Remote Antenna-Ready Option, N Connector: SFX-RCZ4-TR81-P
Battery Model Number	· Use Only SX1000-BP2, 3.6 V Lithium Battery Pack
Configuration Cable	· WX-1001-CA2, 15-ft USB to Mini-USB Cable or SX1000-CC2, 20-ft All-in-One Configuration Cable



¹ Ambient temperature and 140 transmissions per day were used to calculate battery life. The data only applies to a new battery part number SX1000-BP2. Actual battery life may vary depending on environmental factors, application, and usage. Use data shown above only as general point of reference.

