

DATASHEET
SFX-AD81



Highlights

- OleumTech® field-proven technology running on the global Sigfox Low-Power Wide Area (LPWA) network
- 1 analog input: 4-20 mA or 0-10 Vdc
- 1 discrete/digital input
- 9-30 Vdc external power 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 Transmitter



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-AD81 Wireless Analog/Discrete 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-AD81 is equipped with a 24-bit high resolution analog input (AI). The input can be configured for supporting a 4-20mA or 0-10 Vdc sensor. The SFX-AD81 is also equipped with a discrete/digital input (DI) for alarms and exception reporting when critical state changes occur. The SFX-AD81 is designed for general purpose use in non-hazardous locations.

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 Analog and Discrete Inputs
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· OleumTech Sigfox Configuration Tool via RS232 (Mini-USB Port)
Analog Input	· 1 Analog Input (4-20 mA/0-10 Vdc - Jumper Selectable), 24-bit ADC
Discrete Input	· 1 Discrete/Digital Input Input: 0-30 Vdc, Dry Contact, Open-drain Output/NPN devices, Debounce Filter 0 - 2000 ms Input as an Event Counter: Up to 50 Hz, 32-bit Value, Count High/Low/All, RAM Only (Volatile Data)
Device Diagnostics	· Health Tag: Supply Voltage

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_C7B7_01
Wirelessly Connects To	· Sigfox Base Stations
Data Reporting Modes	· Analog Input: On Interval or DIN State Change / Discrete Input: On Interval or DIN State Change

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

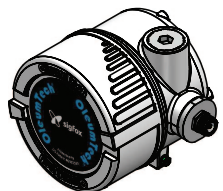
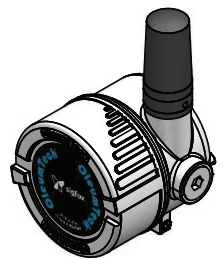
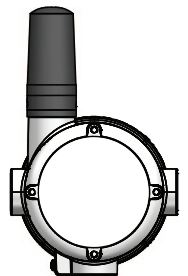
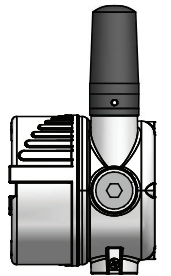
Power Source	· Internal 3.6 Vdc Lithium Battery and, or External 9-30 Vdc Power (Auto-Switching)
Output Power Using Battery	· Supplies 12 V, 20 mA Max Total to Analog Sensors (Use External Power Source If Not Using Battery)
Sensor Power Up Delay	· When Using Battery: 500 ms default (0-30 sec range) / When Using External Power: 100 ms
Internal Battery Life	· Up to 8 Years, Based on User Defined Reporting Intervals ¹
Power Consumption @ 9 Vdc	· Idle: ~7.05 mA / Transmit: ~137.14 mA
Power Consumption @ 30 Vdc	· Idle: ~10.67 mA / Transmit: ~51.76 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-AD81 / Remote Antenna-Ready Option, N Connector: SFX-RCZ1-AD81-P · RCZ2: SFX-RCZ2-AD81 / Remote Antenna-Ready Option, N Connector: SFX-RCZ1-AD81-P · RCZ4: SFX-RCZ4-AD81 / Remote Antenna-Ready Option, N Connector: SFX-RCZ1-AD81-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.

