



Highlights

- 2x Independently configurable temperature sensor inputs
- Supports 2, 3, or 4-wire RTD
- Supports Type J or K Thermocouple
- Installs in minutes
- IP66, NEMA 4X, -40 °C to 80 °C
- 9-30 Vdc external power or optional battery
- Battery life up to 10 years¹
- 900 MHz / 2.4 GHz / 868 MHz
- Secure AES encryption
- Remote antenna-ready option available



US Patent #6967589



GP Transmitters

GP Gateway

Local
Controller

RTU/EFM/PLC/
DCS/HMI/
Long-haul Radio



Network Infrastructure



Cloud (Analytics)

Wirelessly Monitor Critical Temperature Conditions

Maximum Versatility

The OleumTech® GP-TR81 is a secure, rugged, and reliable General Purpose Wireless Transmitter designed for monitoring up to two temperature levels using RTD and or Thermocouple sensors. The TR81 supports 2, 3, or 4-wire Platinum 100 ohm RTD sensors and Thermocouple type J or K sensors. The temperature inputs can be configured independently to support any mix or combination of RTD and Thermocouple sensors.

Deploy Anywhere

The low-power transmitter can be powered using external power or optional battery pack providing extreme deployment flexibility. When powered by a battery pack, the GP-TR81 can operate for up to 10 years before needing a battery replacement.¹

Industrially Hardened

OleumTech Wireless Transmitters originated from the toughest outdoor oil and gas production locations throughout the world. They are designed to thrive in harsh, extreme weather conditions. Only the highest grade materials go in to building our wireless instruments. The AP81 is backed by a 2-year warranty.

Scalable Solution, Easy to Use

The GP Wireless Sensor Network is comprised of a Wireless Gateway and Wireless Transmitters forming a star or point-to-multipoint network structure. Adding additional Transmitters and managing I/O points are extremely simple with the OleumTech GP Network Configuration Software for PC is offered for free to its users.

Technical Specifications

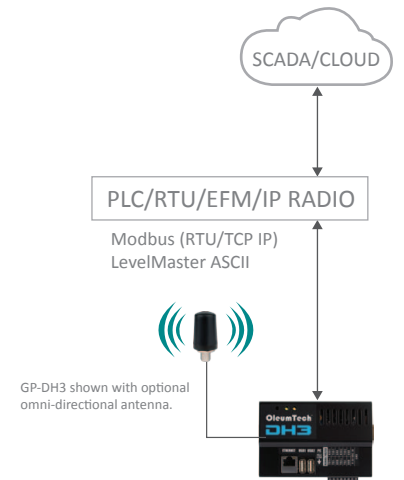
HARDWARE FEATURES	
Device Functionality	· Wireless Transmitter with RTD/Thermocouple Inputs
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· Mini-USB Port to USB - RS232 (PC) / GP Network Configuration Software for PC
Sensor Inputs	· 2x RTD (PT-100 ohm, 2, 3, 4-Wire Type) or Thermocouple Type J or K in Any Mix
Sensor Modes	· Software Controls RTD or Thermocouple Mode (Independently Configurable)
Accuracy	· Sensor Dependent
Power Source	· Internal 3.6 Vdc Lithium Battery and, or External 9-30 Vdc Power (Auto-Switching)
Device Diagnostics	· Health Tags: Supply Voltage, Received Signal Strength Indication (RSSI), RF Refresh, Error Codes
WIRELESS COMMUNICATIONS	
Type: 900 MHz / 915 MHz 2.4 GHz / 868 MHz	· ISM Band, Spread Spectrum · 900 MHz: FHSS (Frequency Hopping), FSK, AES Encryption 256-bit (900 MHz), 128-bit (915 MHz) · 2.4 GHz: DSSS (Direct-Sequence), AES Encryption 128-bit · 868 MHz: LBT (Listen Before Talk), AFA (Adaptive Frequency Agility), AES Encryption 128-bit
Bit Rate	· 900 MHz: 9600 bps / 115.2 kbps; 2.4 GHz: 250 kbps; 868 MHz: 80 kbps
Output Power (Max)	· 900 MHz: 10 mW; 2.4 GHz: 63 mW; 868 MHz: 25mW
Receiving Sensitivity	· 900 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps · 2.4 GHz: -100 dBm @ 250 kbps; 868 MHz: -101 dBm @ 80 kbps
RF Range	· 900 MHz: Up to 7500 Feet / 1.4 Miles / 2.3 km with Clear Line of Sight ² · 2.4 GHz: Up to 2 Miles / 3.2 km with Clear Line of Sight ² · 868 MHz: Up to 5.2 Miles / 8.4 km with Clear Line of Sight ²
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	· 5.5" (W) x 7.6" (H) x 4.4" (D) / 140 mm (W) x 193 mm (H) x 112 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: 3.75 lbs; Gross: 6.75 lbs
Connection Fittings	· 3x 3/4" NPT Female (Bolt Plugs Can Be Removed Using 10 mm Hex Wrench)
Enclosure Casing Material	· Aluminum
Mounting Holes	· 4x 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 or External 9-30 Vdc Power (Non-Switching)
Output Power Using Battery	· Supplies 12 V, 20 mA Max Total to Analog Sensors
Internal Battery Life	· Up to 10 years, Lifespan Based on User Defined Reporting Intervals ¹
Power Consumption @ 9 V	· 34 mA
Power Consumption @ 12 V	· 27.5 mA
Power Consumption @ 24 V	· 21 mA
Power Consumption @ 30 V	· 19 mA
GENERAL SPECIFICATIONS	
Operating Conditions	· Ambient Temperature (Non-Hazardous Applications): -40 °F to 176 °F (-40 °C to 80 °C)
Warranty	· 2-Year Parts and Labor
Country of Origin	· USA
ORDERING INFORMATION	
Model Number(s)	· GP-0900-TR81, GP-0915-TR81, GP-2400-TR81, GP-0868-TR81
External Antenna-Ready Models	· GP-xxxx-TR81-P (Equipped with N Connector Antenna Adapter)
Optional Battery	· Use OleumTech SX1000-BP2 Only
Wirelessly Connects To	· GP Wireless Gateway: GP-DH3 or GP-DH2-W
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 one transmission per 60 sec interval without any retries 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. See OleumTech Battery Life Expectancy Chart for predicted battery life based on reporting interval.

² The maximum RF range data was collected under optimal test conditions, including a clear line of sight between antennas. Actual wireless RF range may vary depending on location, RF interference, weather, antenna type, cable type, and line of sight.

©2018 OleumTech Corporation. All rights reserved. OleumTech is a registered trademark of OleumTech Corporation in the United States. All other trademarks and trade names are the property of their respective holders. Specifications, design, and product descriptions subject to change without notice. This device contains proprietary intellectual property protected by US Patent #6967589. Document ID: 67-4079-001_G

Networking Diagram



GP GATEWAY

GP TRANSMITTERS

