

DC Current Sensor
Included

Highlights

- Helps monitor the integrity of a CP system
- DC current input: 0-100 Amp
- Voltage input: 0-50 Voltage DC input for monitoring cathodic rectifier DC Voltage output
- Up to a 10-year battery life¹
- Self-contained, rugged design
- Installs in minutes
- IP66, -40 °C to 80 °C (-40 °F to 176 °F)
- 900 MHz / 915 MHz / 2.4 GHz / 868 MHz
- Secure AES encryption

US Patent #6,967,589



OTC Transmitters

OTC Gateway

Local
Controller

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



Network Infrastructure



Cloud (Analytics)

Wireless Cathodic Protection Monitoring System

Around-the-Clock Monitoring

The OleumTech® OTC Wireless Cathodic Protection Transmitter Kit is designed to help monitor the integrity of a cathodic protection system by monitoring both current and voltage. The SM-CP1 provides its users the flexibility of selecting the current range: 0-20, 0-40, 0-80, or 0-100 Amp. It also provides a 0-50 Voltage DC input for monitoring cathodic rectifier DC Voltage output. The SM-CP1 features high resolution 24-bit analog to digital conversion (ADC). This kit includes a DC Current Sensor. This ultra-low-power transmitter is powered by a replaceable battery pack that provides up to a 10-year life.¹

Reliable, Scalable, and Safe

The field-proven wireless transmitter communicates with an assigned wireless gateway within the OTC Wireless Sensor and I/O Network creating a highly scalable network, accommodating virtually any I/O requirement.

Technical Specifications

HARDWARE FEATURES

Device Functionality	· Wirelessly Monitors Integrity of Cathodic Protection System
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· Standard RS232 Serial / BreeZ® Software for PC
DC Current Input	· 0-100 Amp Range
Voltage Input	· 0-50 Vdc Input for Rectifier Output
Power Source	· Transmitter: Self-Contained, Internal 3.6 Vdc Lithium Battery · DC Current Sensor: 12 Vdc Supplied by Transmitter
Internal Battery Life	· Over 10 Years, Based on User Defined Reporting Intervals ¹
Device Diagnostics	· Health Tags: Battery Voltage, Received Signal Strength Indication (RSSI), RF Refresh, RF Timeout

WIRELESS COMMUNICATIONS

Radio Band	· ISM Band (License-Free)
900 MHz / 915 MHz	· FHSS, FSK, AES Encryption 256-bit (900 MHz), 128-bit (915 MHz)
2.4 GHz	· DSSS, AES Encryption 128-bit
868 MHz	· LBT-AFA, AES Encryption 128-bit
Bit Rate	· 900/915 MHz: 9600 bps / 115.2 kbps; 2.4 GHz: 250 kbps; 868 MHz: 80 kbps
Output Power (Max)	· 900/915 MHz: 10 mW; 2.4 GHz: 63 mW; 868 MHz: 25mW
Receiving Sensitivity	· 900/915 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps · 2.4 GHz: -101 dBm @ 250 kbps; 868 MHz: -106 dBm @ 80 kbps
RF Range	· 900/915 MHz: Up to 7500 Feet / 1.4 Miles / 2.3 km with Clear Line of Sight ² · 2.4 GHz: Up to 1.9 Miles / 3.1 km with Clear Line of Sight ² · 868 MHz: Up to 1.5 Miles / 2.4 km with Clear Line of Sight ²

CERTIFICATIONS & COMPLIANCE

EMC/EMI	<ul style="list-style-type: none"> · FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia) · AS/NZS CISPR 32 (Australia), EN55032 & EN55024 (EU)
Safety	<ul style="list-style-type: none"> · 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 12.6" (H) x 4.4" (D) / 127 mm (W) x 320 mm (H) x 112 mm (D)
DC Current Sensor Dimensions	· 3" (W) x 3.5" (H) x 1.3" (D) / 76 mm (W) x 89 mm (H) x 33 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)
Package Weight	· ~7 lbs / 3.2 kg
Connection Fitting	· (3) 3/4" NPT Female Ports (2 Plugged)
Enclosure Casing Material	· Type 4X Aluminum; IP66

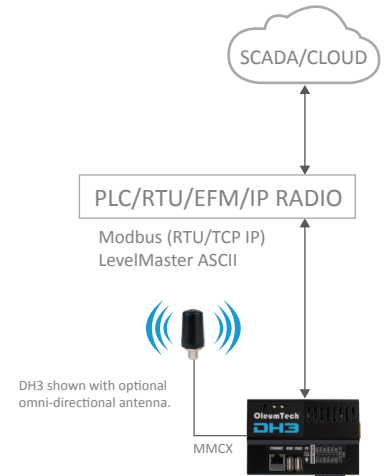
GENERAL SPECIFICATIONS

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 Numbers	· SM5000-CP1 (900), SM5010-CP1 (915), SM5400-CP1 (2.4), SM5020-CP1 (868)
Wirelessly Connects To	· OTC Wireless Gateway
Configuration Cable	· SX1000-CC2, 20-ft All-in-One Configuration Cable
Replacement Battery	· Use OleumTech SX1000-BP2 Only

Networking Diagram



OTC GATEWAY

OTC TRANSMITTERS

Point-to-Multipoint
"Star Topology"



¹Ambient temperature and one transmission per 1 min interval without any retries were used to calculate battery life. 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.

²The 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.

