DATASHEET

WT-MX1

Highlights

- 4 analog inputs (4-20 mA / 0-10 Vdc)
- 2 discrete inputs
- 2 discrete outputs (1.1 Amp cont. / 1.5 Amp pulse)
- Master function: Modbus/HART/LevelMaster
- Self-contained, rugged design
- Multi-drop up to 16 slave devices
- Dedicated 10 Vdc output for powering H-Series Resistive Tank Level Sensors
- IP66, -40 ˚C to 80 ˚C
- 900/915 MHz: up to 10 miles (16.1 km)[1]
- 2.4 GHz: up to 4.3 miles (7 km)[1]
- 868 MHz: up to 5.2 miles (8.4 km)[1]
- Secure AES encryption
- Class I, Division 2 (Zone 2) certified

US Patent #6,967,589

OTC Transmitters | OTC Gateway | Network Infrastructure | Cloud (Analytics)

The Most Flexible Multi-I/O Wireless Transmitter

Long-Range Multi-Function Transmitter

The OleumTech® IO MAX® Wireless Transmitter provides four analog inputs for supporting 4-20 mA or 0-10 Vdc signals. The IO MAX also provides two discrete inputs and two discrete outputs. The WT-MX1 can be configured to operate as a master device interfacing Modbus, LevelMaster ASCII, or HART devices. Multi-drop up to 16 instruments. The IO MAX is powered using an external 9-24 Vdc source. This not only enables its users to customize their power solution, but also allows for the IO MAX to supply continuous power to connected sensors or slave devices if required.

Reliable, Scalable, and Safe

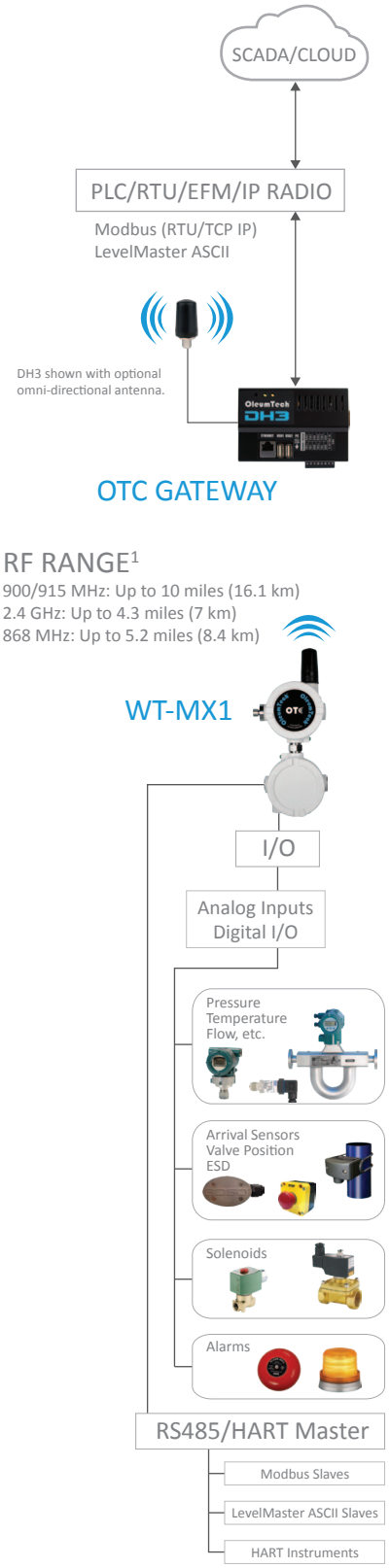
The field-proven wireless transmitter communicates with an assigned wireless gateway within the OTC Wireless Sensor and I/O Network creating a highly scalable network, accommodating virtually any I/O requirement.

The OleumTech wireless transmitter is certified for use in Class I, Division 2 (Zone 2) hazardous locations, and provides a robust RF range.

Technical Specifications

HARDWARE FEATURES	
Device Functionality	· Wireless Transmitter with Support for Analog Inputs and Digital I/O · Master Function: Modbus/LevelMaster/HART (Software Selectable)
Embedded Controller	· Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)
Configuration	· BreeZ® Software for PC
I/O Interface	· 4 Analog Inputs (0-10 Vdc or 4-20 mA), 24-bit ADC, Independently Selectable via DIP Switches · 2 Discrete Inputs (Up to 24 Vdc, For Dry Contact or Open-Drain Output/NPN Devices), 20 ms - 2 s Filter · 2 Discrete Outputs (Open-drain / NPN / 1.1 Amp Sink Current (Continuous), 1.5 Amp Sink Current (2 Sec Pulse)
Accuracy	· ±0.2 % Accuracy for 4-20 mA Input
RS485	· Half-Duplex
Modbus RTU	· Master Function, Read and Write, Multi-drop up to 16 Slave Devices
LevelMaster ASCII	· Master Function, Read Only, Multi-drop up to 16 Slave Devices
HART	· Master Function, Read Only (PV, SV, TV, QV), Multi-drop up to 16 HART Instruments
Power Source	· External 9-24 Vdc (Maximum Voltage Tolerance: 28.8 Vdc)
Output Power with Ext. Power	· Continuous Power: 9-24 Vdc, 100 mA Total Max, Switchable Power to Analog Sensors: 15 Vdc
Sensor Power Up Delay	· Adjustable 0~60,000 ms (Switchable Power Only), 0 = Continuous (External Power Only)
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 kpbs
Output Power (Max)	· 900/915 MHz: 100 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 10 Miles / 16.1 km with Clear Line of Sight[1] · 2.4 GHz: Up to 4.3 miles (7 km) @ 63 mW with Clear Line of Sight[1] · 868 MHz: Up to 5.2 Miles / 8.4 km with Clear Line of Sight[1]
CERTIFICATIONS & COMPLIANCE	
EMC/EMI	· FCC Part 15 (USA), IC ICES-003 (Canada), ACMA (Australia) · AS/NZS CISPR 32 (Australia), EN55032 & EN55024 (EU)
Safety	· Class I, Division 2, Groups A, B, C, D T4; Ex nA IIC T4 Gc · Class I, Zone 2; AEx nA ic IIC T4 Gc / 9-24 Vdc, 0.64 A · ATEX: Sira 18ATEX4010X; Ex nA IIC T3 Gc; II 3 G · IECEx: SIR 18.0002X; Ex nA IIC T3 Ga / 9-24 Vdc, 0.64 A
MECHANICAL SPECIFICATIONS	
Dimensions (WxHxD)	· 6.3 x 12.8 x 4.4-inch / 159 mm x 324 mm x 111 mm
Package Dimensions	· 10.38 x 14.38 x 6.5-inch / 26.4 cm x 36.5 cm x 16.5 cm
Weight	· Net: 5.5 lbs / 2.4 kg ; Package: 6.5 lbs / 3.5 kg
Connection Fitting	· (3) 3/4-inch NPT Female, Pipe Mountable
Enclosure Casing Material	· Type 4X Aluminum; IP66
ELECTRICAL SPECIFICATIONS	
DC Power Input	· 9-24 Vdc (Maximum Voltage Tolerance: 28.8 Vdc)
Power Consumption @ 12 V	· Average Current: 0.35 mA (Tx Pwr @100 mW, Tx Interval @ 60 sec) · Average Current: 0.66 mA (Tx Pwr @100 mW, Tx Interval @ 30 sec) · Average Current: 18.58 mA (Tx Pwr @100 mW, Tx Interval @ 1 sec)
Power Consumption @ 24 V	· Average Current: 0.21 mA (Tx Pwr @100 mW, Tx Interval @ 60 sec) · Average Current: 0.38 mA (Tx Pwr @100 mW, Tx Interval @ 30 sec) · Average Current: 10.44 mA (Tx Pwr @100 mW, Tx Interval @ 1 sec)
GENERAL SPECIFICATIONS - TRANSMITTER	
Operating Conditions	· Ambient Temperature (Class I, Division 2 / Zone 2): -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	· WT-0900-MX1, WT-0915-MX1, WT-2400-MX1, WT-0868-MX1
Wirelessly Connects To	· OTC Wireless Gateway
Configuration Cable	· SX1000-CC2, 20-ft All-in-One Configuration Cable

Networking Diagram



[1] 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.

MADE IN USA