



Reports to Wireless Gateway  
(Sold Separately)

## HIGHLIGHTS

- 4x analog inputs (4-20 mA/0-10 VDC)
- 2x digital/discrete inputs
- 2x digital/discrete outputs
- RS485/HART port (master only)  
Supports Modbus/LevelMaster/HART
- Multi-drop up to 16 slave devices
- 9-24 VDC external power input
- Class I, Division 2 (Zone 2)
- -40 °F to 176 °F (-40 °C to 80 °C)
- 900 MHz: Up to 10 miles (16.1 km)<sup>1</sup>
- 2.4 GHz: Up to 4.3 miles (7 km)<sup>1</sup>
- Secure AES encryption

## The Most Flexible, Self-Contained Multi-I/O Wireless Transmitter.

### ANALOG INPUTS

The 4 analog inputs (24-bit ADC) can be independently set for any combination of 4-20 mA or 0-10 VDC via DIP switches. IO MAX<sup>®</sup> Transmitter provides wiring options for either continuous power (9-24 V) or switchable power (12 V) output to sensors.

### DIGITAL I/O

The 2 digital inputs can be set as normally open or normally closed and are rated up to 24 VDC (supports dry contact or NPN devices). The 2 digital open-drain outputs can sink up to 1 Amp of current.

### MASTER FUNCTIONALITY

The IO MAX Transmitter can be software-configured to operate as a Modbus, LevelMaster ASCII, or HART master and multi-drop up to 16 devices or instruments.

### EXTERNAL POWER INPUT

The IO MAX Transmitter 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.

### BreeZ<sup>®</sup> SOFTWARE

The IO MAX Transmitter is configured using BreeZ<sup>®</sup> Software by OleumTech, provided free of charge.

### COMMUNICATES WITH WIRELESS GATEWAY

IO MAX is one of many Wireless Transmitters that communicates with an OleumTech Wireless Gateway within its network, creating a highly scalable network, accommodating virtually any I/O requirement.


## HARDWARE FEATURES

Device Functionality	<ul style="list-style-type: none"> <li>Wireless Transmitter: Multiple Analog Inputs, Digital I/O</li> <li>Master Function: Modbus/LevelMaster/HART (Software Selectable)</li> </ul>
Embedded Controller	<ul style="list-style-type: none"> <li>Ultra-Low Power RISC Microcontroller with Internal FLASH (Field Upgradeable)</li> </ul>
Configuration	<ul style="list-style-type: none"> <li>BreeZ<sup>™</sup> Software for PC (Version 5.2 or higher)</li> </ul>
I/O Interface	<ul style="list-style-type: none"> <li>4x Analog Inputs (0-10 VDC or 4-20 mA), 24-bit ADC, Independently Selectable via DIP Switches</li> <li>2x Discrete Inputs (Up to 24 VDC, For Dry Contact or Open-Drain Output/NPN Devices), 20 ms - 2 s Filter</li> <li>2x Discrete Outputs (Open-drain / NPN / 1 Amp Sink Current)</li> </ul>
Accuracy	<ul style="list-style-type: none"> <li>±0.2 % Accuracy for 4-20 mA Input</li> </ul>
RS485	<ul style="list-style-type: none"> <li>Half-Duplex</li> </ul>
Modbus RTU	<ul style="list-style-type: none"> <li>Master Function, Read and Write, Multi-drop up to 16 Slave Devices</li> </ul>
LevelMaster ASCII	<ul style="list-style-type: none"> <li>Master Function, Read Only, Multi-drop up to 16 Slave Devices</li> </ul>
HART	<ul style="list-style-type: none"> <li>Master Function, Read Only (PV, SV, TV, QV), Multi-drop up to 16 HART Instruments</li> </ul>
Power Source	<ul style="list-style-type: none"> <li>External 9-24 VDC</li> </ul>
Output Power with Ext. Power	<ul style="list-style-type: none"> <li>Continuous Power: 9-24 VDC, 1 Amp Total Max, Switchable Power to Analog Sensors: 12 VDC</li> </ul>
Sensor Power Up Delay	<ul style="list-style-type: none"> <li>Adjustable 0-60,000 ms (Switchable Power Only), 0 = Continuous (External Power Only)</li> </ul>
Self-Diagnostics	<ul style="list-style-type: none"> <li>Contains Comprehensive Self-Checking Software and Hardware for Continuous Monitoring of Operation</li> </ul>

## WIRELESS COMMUNICATIONS

Type: 900 MHz / 2.4 GHz	<ul style="list-style-type: none"> <li>ISM Band, Spread Spectrum</li> <li>900 MHz: FHSS (Frequency Hopping), FSK, AES Encryption 256-bit (900 MHz), 128-bit (915 MHz)</li> <li>2.4 GHz: DSSS (Direct-Sequence), AES Encryption 128-bit</li> </ul>
Bit Rate	<ul style="list-style-type: none"> <li>900 MHz: 9600 bps / 115.2 kbps ; 2.4 GHz: 250 kbps</li> </ul>
Output Power	<ul style="list-style-type: none"> <li>900 MHz: Up to 100 mW; 2.4 GHz: 10 mW or 63 mW</li> </ul>
Receiving Sensitivity	<ul style="list-style-type: none"> <li>900 MHz: -110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps</li> <li>2.4 GHz: -100 dBm</li> </ul>
RF Range	<ul style="list-style-type: none"> <li>900 MHz: Up to 10 miles (16.1 km) @ 100 mW with Clear Line of Sight<sup>1</sup></li> <li>2.4 GHz: Up to 4.3 miles (7 km) @ 63 mW with Clear Line of Sight<sup>1</sup></li> </ul>

## CERTIFICATIONS & COMPLIANCE

EMC/EMI	 <ul style="list-style-type: none"> <li>FCC Part 15 (USA)</li> <li>IC ICES-003 (Canada)</li> </ul>
Safety Pending	<ul style="list-style-type: none"> <li>Class I, Division 2, Groups A, B, C, D T4; Ex nA IIC T4</li> <li>Class I Zone 2 AEx nA IIC T4</li> <li>ATEX</li> <li>IECEx</li> </ul>

## MECHANICAL SPECIFICATIONS

Dimensions (WxHxD)	<ul style="list-style-type: none"> <li>7.0 x 13.5 x 4.5-inch / 178 mm x 343 mm x 114 mm</li> </ul>
Package Dimensions	<ul style="list-style-type: none"> <li>10.38 x 14.38 x 6.5-inch / 26.4 cm x 36.5 cm x 16.5 cm</li> </ul>
Weight	<ul style="list-style-type: none"> <li>Net: 5.75 lbs / 2.6 kg; Gross: 6.75 lbs / 3.1 kg</li> </ul>
Connection Fitting	<ul style="list-style-type: none"> <li>2x 3/4-inch NPT Female, 1/4-inch (6.35 mm) Mounting Holes, Pipe Mountable</li> </ul>
Enclosure Casing Material	<ul style="list-style-type: none"> <li>Type 4X Aluminum; IP66</li> </ul>

## ELECTRICAL SPECIFICATIONS

DC Power Input	<ul style="list-style-type: none"> <li>9-24 VDC</li> </ul>
Power Consumption @ 12 V	<ul style="list-style-type: none"> <li>Average Current: 0.35 mA (Tx Pwr @100 mW, Tx Interval @ 60 sec)</li> <li>Average Current: 0.66 mA (Tx Pwr @100 mW, Tx Interval @ 30 sec)</li> <li>Average Current: 18.58 mA (Tx Pwr @100 mW, Tx Interval @ 1 sec)</li> </ul>
Power Consumption @ 24 V	<ul style="list-style-type: none"> <li>Average Current: 0.21 mA (Tx Pwr @100 mW, Tx Interval @ 60 sec)</li> <li>Average Current: 0.38 mA (Tx Pwr @100 mW, Tx Interval @ 30 sec)</li> <li>Average Current: 10.44 mA (Tx Pwr @100 mW, Tx Interval @ 1 sec)</li> </ul>

## GENERAL SPECIFICATIONS - TRANSMITTER

Operating Conditions	<ul style="list-style-type: none"> <li>Ambient Temperature (Class I, Division 2): -40 °F to 176 °F (-40 °C to 80 °C)</li> <li>Ambient Temperature (Non-Hazardous Applications): -40 °F to 185 °F (-40 °C to 85 °C)</li> <li>Humidity: 0 to 99 %, Non-Condensing</li> </ul>
Warranty	<ul style="list-style-type: none"> <li>2-Year Parts and Labor</li> </ul>
Country of Origin	<ul style="list-style-type: none"> <li>USA</li> </ul>

## ORDERING INFORMATION

Transmitter Model Numbers	<ul style="list-style-type: none"> <li>900 MHz: WT-0900-MX1, WT-0915-MX1; 2.4 GHz: WT-2400-MX1, WT-2410-MX1</li> </ul>
Wirelessly Connects To	<ul style="list-style-type: none"> <li>Wireless Gateway: DH1, DH2, or DH3</li> </ul>

<sup>1</sup> 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.

## NETWORKING DIAGRAM

