



technical datasheet

## WIO-900L Series

Industrial Wireless I/O, transmitters and receivers

- Point-to-point digital and/or analogue I/O transfer
- Easy to use - no configuration necessary
- Secure data encryption
- Intelligent wireless protocol, immediate exception reporting plus configurable high-scan updates
- Power supply 9 – 30V DC  
24V DC analogue loop supply internally generated
- RS232 Configuration and diagnostics port



### WIO-900LT Transmitter unit

- ◆ Powerful 900MHz, frequency-hopping, 1W transmitter.
- ◆ External inputs: two digital/pulse inputs, one analogue input (0-20mA), and one thermocouple mV input.
- ◆ Internally calculated values – analogue and thermocouple setpoint status, pulse count, power supply voltage.
- ◆ Thermocouple input  $-10\text{mV}$  to  $+100\text{mV}$  with cold-junction compensation and linearization for J, K, T or E-type.
- ◆ Local output for setpoint status, generated by comparing analogue input to high and low setpoints.
- ◆ RS232 Configuration and diagnostics port.

### WIO-900LR Receiver unit

- ◆ Three digital contact outputs and one analogue output (0-20mA).
- ◆ Communications failure indication and configurable output.
- ◆ Outputs can be configured as retained or reset (fail-safe) on communications failure.
- ◆ LED indication of radio signal strength

EPS WIO-900 Rev1.3 210610

 **COOPER** Crouse-Hinds

[www.mtl-inst.com](http://www.mtl-inst.com)

## SPECIFICATION

### TRANSMITTER INPUTS

#### Digital/Pulse Input

Two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1V DC on / >3V DC off  
Pulse input max rate 10 Hz, 50 msec on time, pulse input counted as 2 x 16 bit register.

#### Analogue input

0-20mA, "floating" differential input, resolution 16 bit, accuracy < 0.1 %.

#### Thermocouple input

-10mV to +100mV, J, K or T type  
Linearisation with on-board cold-junction compensation, accuracy better than 1°C  
Analogue & thermocouple setpoint status, setpoint status sets (on) when input value < low setpoint and resets (off) when input value > high setpoint, status transmitted as per digital input, setpoint values are settable via front-panel rotary switch or configuration software

### RECEIVER OUTPUTS

#### Digital Output

Three relay-contact outputs, 260V AC, 1A rating

#### Analogue Output

0-20mA, source output, 12-bit resolution, 0.1% accuracy  
Comms-fail, internal status based on configurable time-out value

#### Comms-fail output

OK output, FET, 30V DC, 500mA.

#### Fail-safe

On "comms-fail", outputs user-configurable as retained (last correct value) or reset (fail-safe).

### WIRELESS

Frequency hopping spread spectrum coverage (frequency depends upon model chosen) sub-bands available, 1W.  
Approved to FCC Part 15.247, RS210.

**Line of sight range:** 10miles/16km (1W ERP "effective radiated power"); 20miles/32km with 6dbi gain antenna (4W ERP); 3000 ft / 1000 m in obstructed industrial environments.  
Each transmission may be configured to be sent 1 to 5 times.

### COMMUNICATIONS

Input values are transmitted on immediate change plus timed updates (maximum rate 5 times per second).  
Wireless messages are data encrypted for security protection.

### SERIAL PORT

RS232 RJ45 female DCE, used for configuration and diagnostics.

### LED INDICATION

#### Transmitter unit

Power/OK, Radio TX, DIN1, DIN2, Analogue Setpoint status.

#### Receiver unit

Power/OK, Radio RX, DO1, DO2, DO3, Communications fail LED's also used to provide radio signal strength indication.

### CONFIGURATION AND DIAGNOSTICS

Factory configuration transmitter/receiver matched pair.  
User configuration via serial port. Diagnostics features – read input values, write output values, radio signal strength, monitor communication messages.

## STANDARDS COMPLIANCE

Radio: EN 300 220, Part 15.247, RSS-210, AS4295, AS4768.1  
EMC: 89/336 EEC, AS3548, FCC Part 15, EN301489  
Electrical: EN60950

## GENERAL

### Hazardous area approvals

Class 1 Div 2 (USA/Canada) – pending

### Environmental

**Temperature:** -40 to +60°C

**Humidity:** 0 – 99% RH non-condensing

### Housing

Thermoplastic enclosure

### Dimensions

100 x 22 x 120mm

### Mounting

'T' section 35mm DIN rail to EN 50022

### RF connector

SMA

### Input voltage

9 – 30V DC

### Power consumption (@ 12V DC)

**Receiver:** 100mA

**Transmitter:** - quiescent 40mA

during radio transmission (30 msec) 300mA

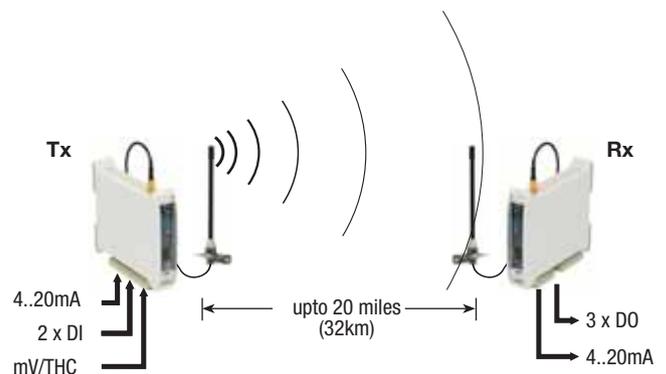
Periodically scans AI to save power

**Analogue loop supply** (internally generated) 24V DC @ 30mA

**Internal monitoring of supply voltage** – may be transmitted as an "input" (Transmitter unit only)

## ORDERING INFORMATION

<b>WIO-900LT-US</b>	902-928MHz 1W USA/Canada FHSS Tx only unit
<b>WIO-900LT-AU</b>	915-928MHz 1W Australia FHSS Tx only unit
<b>WIO-900LT-NZ</b>	921-928MHz 1W New Zealand FHSS Tx only unit
<b>WIO-900LR-US</b>	902-928MHz Rx only unit
<b>WIO-900LR-AU</b>	915-928MHz Rx only unit
<b>WIO-900LR-NZ</b>	921-928MHz Rx only unit
<b>WIO-900LP-US</b>	902-928MHz Tx / Rx pair
<b>WIO-900LP-AU</b>	915-928MHz Tx / Rx pair
<b>WIO-900LP-NZ</b>	921-928MHz Tx / Rx pair



Typical line-of-sight application

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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EPS WIO-900 Rev1.3 210610