# Industrial Wireless I/O

## ELPRO 905U-L

### Performance, Integrity, Security


## Powerful, flexible, easy to use

- Small I/O capability - use where a simple one-way link is required.
- Uni-directional, one way communications.
- Transmitter and receiver units factory-configured as a matching pair, or user-configurable as part of a larger wireless I/O network.
- Secure data enryption.
- *WIB-net* intelligent wireless protocol, peer-to-peer communications, immediate exception reporting plus configurable high-scan updates, multi-hop mesh repeater.
- Up to 3000 wireless units per network
- Power supply 9 – 30VDC, 24VDC analog loop supply internally generated.
- RS232 Configuration and diagnostics port
- Compatible with the 905U Wireless I/O and Wireless Gateway family.
- Class 1 Div 2 hazardous areas approval.

### 905U-L-T Transmitter unit

- Powerful 900MHz frequency-hopping 1W transmitter.
- External inputs – two digital/pulse inputs, one analog input (0-20mA, 4-20mA), and one thermocouple mV input.
- Internally calculated values – analog and thermocouple setpoint status, pulse count, power supply voltage.
- Thermocouple input –20 to +100mV with cold-junction compensation and linearization for J, K , T or E-type.
- Local output for setpoint status: generated by comparing analog input to high and low setpoints.
- RS232 Configuration and diagnostics port.

### 905U-L-R Receiver unit

- Three digital contact outputs and one analog output (0-20mA, 4-20mA).
- 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

# 905U-L Wireless I/O Range
# Range Specifications

ELPRO Technologies is an ISO 9001:2008 Quality Assured Company.

## Different Models

905U-L-T Input Transmitter unit
905U-L-R Output Receiver unit

## Standards Compliance

Radio: EN 300 220, Part 15.247, RSS-210, AS4295, AS4768.1

EMC compliant 89/336 EEC, AS3548, FCC Part 15, EN301489

Hazardous rating: Class 1 Div 2 (USA/Canada)

Electrical: EN60950

## General Specifications

Environmental -40 to 60°C / -40 to 140°F, 0–99% RH (non-condensing)

Housing - DIN-rail thermo-plastic enclosure.
100 x 22 x 120 mm / 3.9 x 0.9 x 4.7 inches.

SMA connector for antenna or coaxial cable connection.

Power Supply 9 – 30 VDC.

Power consumption @12VDC – Receiver 100mA.

Transmitter 40mA quiescent, during radio transmission (30 msec) 300mA.

Periodically scans AI to save power.

Analog loop supply internally generated, 24VDC 30mA.

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

Hazardous rating: Class 1 Div 2 (USA/Canada) pending.

## Transmitter Inputs

**Digital/Pulse Input**, two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off.

Pulse input max rate 10 Hz, 50 msec on time, pulse input counted as 2 x 16 bit register.

**Analog input**, 0-20 mA, 4-20mA, span and zero configurable (default 4-20mA), "floating" differential input, resolution 16 bit, accuracy < 0.1 %.

**Thermocouple input**, -20mV to +100mV, J, K or T type linearization with on-board cold-junction compensation, accuracy better than 1degC.

**Analog & 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, 260VAC, 1A rating.

**Analog Output**, 0-20mA, 4-20mA, configurable span and zero (default 4-20mA), source output, 12-bit resolution, 0.1% accuracy.

**Comms-Fail**, internal status based on configurable time-out value. Comms-fail output. ok output, FET, 30VDC, 500mA.

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

## Wireless

Frequency hopping spread spectrum 902-928MHz, sub-bands available, 1W Approved to FCC Part 15.247, RS210.

Line of sight range 20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments.

Radio distances can be increased by up to 5 intermediate repeater units.

Each transmission may be configured to be sent 1 to 5 times.

## Communications

ELPRO *WIB-net* wireless protocol, enabling peer-to-peer 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, Analog 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. Unidirectional units can be configured

to network with Mulit-I/O and Gateway units.

Diagnostics features – read input values, write output values, radio signal strength, monitor communication messages.

Specifications subject to change without notice

**THINK WIRELESS... *THINK ELPRO***

ELPRO Technologies

COOPER Bussmann


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