

# Industrial Wireless I/O

## ELPRO 105U-L & 905U-L

Performance, Integrity, Security.

Cost effective wireless I/O for unidirectional applications.



**Powerful, flexible, easy to use**

**Reliable License-free radio bands**

- 905U-L 900MHz FHSS 1W for North & South America, Australia, New Zealand, Asia
- 105U-L 869MHz FF 500mW for Europe and South Africa

**Easy to use with powerful features**

- Standard transmitter-receiver pair configuration or user-configured using ELPRO's WIB-net communications.
- Secure wireless encryption.
- Peer-to-peer, exception-reporting communications for fast, highly efficient wireless networks.
- Simple "back-to-back" system or large multi-node networks.
- Multiple interfaces to different data-buses.

**Compact Wireless I/O**

- Two digital/pulse inputs, one analog input, one thermocouple
- Analog input suitable for 0-20/4-20mA or 0-5V thermocouple type J, K, T with cold-junction compensation fail-safe outputs.
- Setpoint functions on analog and thermocouple inputs

**Powerful Diagnostics**

- Wireless signal strength indication on front of receiver unit

**Lifetime Warranty**



# Specifications 105U-L & 905U-L Wireless I/O

## General

Environmental -40 to 60°C / -40 to 140 °F 0 - 99% RH.  
EMC compliant 89/336 EEC, EN 300 683, AS3548, FCC Part 15.  
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  
(50 msec) 300mA  
Analogue loop supply internally generated, 24VDC 30mA  
low power mode may be configured to cycle loop supply  
Internal monitoring of supply voltage - may be transmitted as an "input"  
(Transmitter unit only)

## Transmitter Inputs

Digital	external	status
Pulse total	external	value
Analog	external	value
Thermocouple	external	value
Setpoint - analog	internal	status
Setpoint - thermocouple	internal	status
Pulse rate	internal	value
Supply voltage	internal	value
Setpoint - supply	internal	status

Input values transmitted as per WIB-net protocol - exception reporting on signal change, and update time. Up to 5 repeater addresses configurable.

## 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 counted as 2 x 16 bit register.

## Analog input

0-20 mA (4-20mA, 0-10mA) / 0-5V  
"floating" differential input, resolution 16 bit, accuracy < 0.1 %

## Thermocouple input

Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation  
Accuracy better than 1degC

## Setpoint Status

High and low setpoints generate internal digital status  
setpoint status sets (on) when analogue value < low setpoint and resets (off) when analogue value > highsetpoint 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 1A

### Analog Output

0-20mA, source output, 12-bit resolution, 0.1% accuracy

### Comms-Fail

Internal status based on configurable time-out value.  
Comms-fail status can be configured to a local output

### Fail-safe

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

### 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

## Radio Transmitter

### 105U-L

Frequency 869.4MHz, transmitter power 500mW  
Approved to EN 300 220  
Line of sight range 5 km; 500 m in obstructed industrial environments.

### 905U-L

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.

## Configuration and Diagnostics

Factory configuration transmitter/receiver matched pair, AI to AO, 2DI to 2DO, SP status to DO3.

User configuration via serial port. Unidirectional units can be configured to network with Multi-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

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Think Wireless... Think ELPRO