

# 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  
Dimensions: 100 x 22 x 120 mm / 3.9 x 0.9 x 4.7 inches.  
Weight: 182 grams  
SMA connector for antenna or coaxial cable connection.

## Power Supply

9 - 30 VDC.

Receiver power consumption @ 12VDC - 250mA.  
24VDC - 125mA

Transmitter power consumption @ 12VDC - 600mA  
24VDC - 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, 250VAC 1A/30VDC 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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