Description
The ELPRO 905U-K Wireless I/O is a small I/O transmitter that extends long-range, license-free communications to sensors in local, remote, or difficult-to-reach locations. Designed for low power consumption and easy plug-in of ELPRO BU-5 battery packs, the ELPRO 905U-K provides reliable continuity in environments typical of industrial applications with power constraints.

Capable of transferring analog, pulse, or discrete inputs, and powering a loop-powered analog device (24 Vdc, 50 mA), the ELPRO 905U-K offers a simple-to-deploy and highly reliable solution.

Features
• 902–928 MHz frequency and up to 1W RF power
• Link process inputs to single or multiple outputs (peer to peer)
• Multiple power supply options, including battery-only supply with ultra-low power consumption (reverts to sleep mode)
• Input-only transmitter unit (2 or 4 DI/PI, 1 AI) that can be connected to multiple I/O and/or gateway units, with up to 3000 units in a system
• Peer-to-peer communications with exception reporting, reliable self-checking via update time, and secure data encryption
• External inputs plus internally calculated values, including analog set point status, pulse rate and pulse total, power/battery supply voltage, and power supply alarm
• Can connect to up/down counter transducers, such as shaft-encoders
• Configurable repeat transmissions to enhance message reliability
• Set point, pulse count, and rate available. Additional Internal I/O points provided for health monitoring
• Class I Div 2 hazardous areas approval (US/Canada)

Applications
• High-level alarms
• Security gate control
• Emergency shower notification
• Flow meter monitoring
• Storage tank monitoring
• Pipeline cathodic protection
• Pump stop-start
• Lighting bank control
• Power reticulation relay fault notifications
• Weather station reporting
• Bearing condition monitoring
Specifications

**SPECIFICATION** | **DESCRIPTION**
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**Transmitter and Receiver** |  
Frequency | 902–928 MHz  
915–928 MHz  
915–928 MHz configured for Australia
Transmit power | 1W  
Transmission | Frequency hopping spread spectrum (FHSS)
Modulation | Frequency shift keying
Channel spacing | 50 x 250 kHz  
Data rate | 19.2 kbps with forward error correction
Range (LoS) | 20 miles (32 km) @ 4W EIRP  
9.3 miles (15+ km) @ 1W EIRP (other countries)
Antenna connector | Female SMA standard polarity

**Input and Output** |  
Digital inputs | TTL voltage 0–1.5 Vdc (on), 3.5–13 Vdc (off)  
Surge protected, not isolated  
Voltage-free/NPN contacts  
2 DI (external, status)
Analog inputs | 0–24 mA or 0–10V (selectable, over range indication 0–25 mA)  
Floating differential inputs, common mode voltage 27V  
Resolution 12-bit, accuracy <0.1%
24 Vdc @ 50 mA for external loops provided
Pulse inputs | As per digital input specifications Above.  
Maximum pulse rate 10 kHz (50 kHz possible on PI1 using a configurable divider)  
Pulse width minimum 0.2 ms, volt-free contacts 300 Hz
2 PI (pulse total, count, rate)

**Serial Port** |  
RS-232 | 9-pin DB-9 female connector (used for programming only)
Data rate (bps) | 9600 bps
Serial settings | 8 data bits, 1 stop, no parity

**Protocols and Configuration** |  
System address | Configurable system address
Protocols supported | ELPRO WIBnet™ up to 4 retries, CRC error checking
User configuration | E-series configuration utility
Configurable parameters | Individual I/O mappings, analog and digital debounce, update time, analog set points and sensitivities
Security | 64-bit encryption on radio

**LED Indication and Diagnostics** |  
LED indication | OK/active, TX/link (refer to product manual for further information)
Reported diagnostics | I/O status

**Power Supply** |  
Nominal supply | 6–30 Vdc, under/over voltage protection  
9 Vdc battery supply
Average current draw | 10 mA @ 12 Vdc (idle) + analog loop 2 (internally generated, 24 Vdc/50 mA)
Transmit current draw | 300 mA @ 12 Vdc
Battery (optional ELPRO 6U/5-2) | 6 x AA alkaline batteries 9V, up to 1.4 year service life depending on input configuration
Enclosure: specifications as per 905U-K enclosure  
Temperature: dependant on battery type used

**General** |  
Size | 6.7” x 2.5” x 1.4” (170 mm x 64 mm x 36mm)
Housing | Powder-coated aluminum
Mounting | Panel mount/connector and cable lead
Terminal blocks | Weatherproof connector with 3.2' (1m) lead
Temperature rating | –40 to +140°F (–40 to +60°C)
Humidity rating | 0–99% RH noncondensing
Weight | 1 lb (500g)

**Ordering**

**PRODUCT CODE** | **DESCRIPTION**
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EL-905U-K-900-1W | Transmit only, 2DI, 1 AI, 6–30 Vdc external

**Accessories**

**PRODUCT CODE** | **DESCRIPTION**
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Antennas - 900 MHz |  
DG900-1 | Whip antenna, SMA male, angle bracket, –2 dbi gain, 3’ (1m) coaxial cable
WH900-SMA | Whip antenna, SMA male, –2 dbi gain
CDF890EL | Dipole antenna, SMA male, mounting bracket, 2 dbi gain, 16’ (5m) coaxial cable
SG900EL | Collinear antenna, N-type female, 5 dbi gain
SG900-8 | Collinear antenna, N-type female, 8 dbi gain
YU6-900 | Yagi antenna, N-type female, 9 dbi gain
YU16-900 | Yagi antenna, N-type female, 15 dbi gain

**Cables** |  
CC3/10/20-SMA/BNC | Coaxial cable kit, 9.8’ (3m)/32’ (10m)/65’ (20m), N-type to N-type/SMA male/BNC male
CCTAIL-SMA-F/M | Coaxial cable tail, 24” (600 mm), SMA to N-type female or male
CCTAIL-BNC-M | Coaxial cable tail, 24” (600 mm), BNC to N-type female or male
SER-DB9 | Serial RS-232 cable, DB-9 male to DB-9 female, straight through

**Surge Diverters** |  
CSD-SMA-2500 | SMA surge diverter for use with CC10/CC20-SMA
CSD-N-6000 | Coaxial surge diverger, bulkhead N female to N female
MA15/D/1/SI | Power supply surge diverter, 110 Vdc/15A
MA15/D/2/S1 | Power supply surge diverter, 240 Vac/15A
IOP32D | Signal surge diverger, 2 x 2-wire/1 x 4-wire

**Power Supplies** |  
BU5-2 | IP66 battery pack
PS-DINAC-12DC-OK | DIN rail power supply, 100–250 Vac, 12 Vdc/2.5A
PSG80E | DIN rail power supply, 85–264 Vac, 24 Vdc/2.5A

**Mounting Brackets** |  
BR-COL-KIT | Mounting bracket kit for collinear antenna
BR-YAG-KIT | Mounting bracket kit for Yagi antenna

**Compliance** |  
EMC | FCC Part 15, AS 3548  
RF (radio) | FCC Part 15.247; RSS 210; AS 4268.2
Hazardous area | CSA Class I, Division 2
Safety | IEC 60950 (RoHS compliant)

Note: Specifications are subject to change.

① Configured for US  
② Configured for Australia  
③ Typical maximum line-of-sight range (check country regulations, single-hop, repeaters will extend)