

905U-G WIRELESS GATEWAY

Databus interface and conversion

ELPRO wireless gateways provide the interface and/or communication between similar/dissimilar industrial databus devices (eg Modbus to Profibus to EtherNet/IP: PLC's to SCADA/DCS etc). Connected via RS232/RS485/RJ-45, register databus values are transmitted/received by radio to and from field and control room devices.

ELPRO's 905U-G series multi-hop repeat five times, support a variety of industrial protocols and can be combined with ELPRO's 905U-I/O and 115S products to create simple to complex I/O and databus networks.



ELPRO TECHNOLOGIES

Industrial Wireless Technology

Product Features

- 865-867/902-928MHz, 1W, FHSS, 19.2kbps radio communications to 20mi/33km with multi-hop repeating.
- Able to connect similar/dissimilar industrial protocols and vendor devices (incorporating: Master/Slave, Slave/Slave, Master/Master networks).
- Simple to complex, point to multi-point communications with forward-error correction (FEC), data integrity check (CRC) and data encryption.
- Eight configurable digital I/O with I/O expansion via ELPRO 115S range.
- AC/DC/battery power options with UPS battery charger.
- Module diagnostics including read/ write of register I/O, reporting of signal strength indication (RSSI), communications logging and internal measurement of low/normal and battery supply voltages.
- Class I Div 2 hazardous area approval (USA/Canada), 902-928MHz only.

**Module/topology/country regulation dependent.*

Application Examples

- Similar/dissimilar databus SCADA/DCS to PLC-PLC communications.
- Moving machinery PLC-PLC/HMI connection/operation.
- Databus cable replacement.
- Smart instrument interface and connection (eg gas analyzer).
- Multi I/O data agglomerater/repeater for large networks.



THINK WIRELESS... THINK ELPRO

905U-G WIRELESS GATEWAY

Databus interface and conversion

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

Model	Industrial Protocol Supported/ I/O Capacity/baud rate
905U-G-MD1	Modbus RTU (Master & Slave), DF1 Up to 4300 I/O points: analog and/or discrete Modbus - RS232/ 485: 300-38400 bps DF1 (full duplex) - RS232: 300-38400 bps
905U-G-ET1	EtherNet/IP (Level 2 I/O Server) Modbus TCP (Class 0, 1: partially class 2 Slave) TCP/IP functions: embedded web system (dynamic HTTP); on-board file system for downloadable web pages via FTP server; email (SMTP) 2048 bytes input/2048 bytes output: up to 4300 D I/O or 1024 AI/1024 AO 10/100 Mbps, RJ45 connector
905U-G-PR1	Profibus DP Slave to EN 50170 standard 416 I/O bytes (up to 1952 DI/ 1952 DO or 122 AI/ 122 AO) RS-485 optically isolated with onboard DC/ DC converter Automatic baud rate detection: 9600 bps - 12 Mbps
905U-G-PR2	Profibus DP Master to EN 50170 standard 2048 bytes input/2048 bytes output: up to 4300 D I/O or 1024 AI/1024 AO RS-485 optically isolated with onboard DC/DC converter Automatic baud rate detection: 9600 bps - 12 Mbps
905U-G-DE1	DeviceNet Slave 512 bytes input/512 bytes output (up to 4300 DI I/O or 256 AI/256 AO) Register size 16 bit - number of remote 905U addresses 500 RS422 optically isolated (selectable baud rate between 125, 250, 500 kbps)
905U-G-M+1	Modbus+Slave 2048 bytes input/2048 bytes output: up to 4300 D I/O or 1024 AI/1024 AO RS485 optically isolated: standard baud rate 1 Mbps
I/O Specifications	
Onboard D I/O	Eight non voltage/ FET I/O: 30VDC 500mA (configurable as inputs/outputs).
Ethernet Port (model/protocol dependent)	
RJ45 connector	10/100 Mbps transformer isolated interface
Serial Port	
RS232/RS485	9600 baud, 8 bits, no parity, 1 stop bit ⁽³⁾
• RS232	9pin DB9 female connector (programming only)
• RS485	Terminal connector (serial expansion module option: cable up to 2000m)
Power Supply	
Mains supply	12-24VAC/9-30VDC: over-voltage/ reverse power protected
Battery supply	11.5-15.0 VDC (battery supply volts internal I/O value)
Loop supply	Internal DC/DC converter: 24VDC 150mA (905U-1, 2, 3 only)
Battery charger circuit	1.2-12 Ahr battery: max charge current 0.7A at >12V

Quiescent/transmission current draw	
• MD1	Quiescent = +12V, 150mA: 24V, 90mA: add 5mA per I/O point ⁽¹⁾ Transmit = +12V, 350mA: 24V, 200mA ⁽¹⁾
• ET1/PR1&2/DE1/M+1	Quiescent = +12V, 270mA: 24V, 170mA: add 5mA per I/O point ⁽¹⁾ Transmit = +12V, 470mA: 24V, 280mA ⁽¹⁾
General	
Temperature/Humidity	866 & 900 MHz RH Non-condensing
• 905U-G-MD1	-40 to +60°C (-40 to 140°F)
• 905U-G-ET1/PR1/PR2/DE1/M+1	-30 to +60°C (-22 to 140°F)
Housing	Extruded aluminum: 5.1"x7.3"x2.4" (130x185x60mm)
Mounting	DIN rail mounting
Terminal strip	Removable: up to 2.5mm ² (12 gauge AWG wires)
LED Indication:	
• ACTIVE (ACT)	Micro processor/Module operational
• OK	Mains/ battery power supply available
• SERIAL TX & RX	Serial port transmitting; Serial port receiving
• RADIO TX & RX	Radio transmitting; Radio receiving
• I/O LED markers	I/O inputs and/or outputs status
Approvals	EMC FCC Part 15, AS3548, EN 301 489 CSA Class I Div 2 hazardous areas (USA/Canada)
Safety	EN60950 RoHS Compliant
Radio Transceiver	
Modulation/band(s)	FHSS ⁽²⁾ : 902-928MHz; 865-867MHz - sub-bands configurable
Transmit power	1W: approved to FCC Part 15.247, RSS210
Conforms to	EN 300 113, EN 300 220, FCC Part 90, Part 15, RSS-119, AS4295, AS4768.1, RFS29.
Receiver sensitivity	-108 dBm
Data rate	19.2 kbps with forward-error correction
Line of sight range ⁽⁴⁾	USA/Canada: 4W EIRP, 20+ miles. Other: 1W EIRP, 15+ km ⁽³⁾
Antenna connector	SMA female
Surge diverter	CSD-SMA-2500.
Note:	
• (1) Transmission current - I/O draw dependent on number of transmission per hour.	
• (2) FHSS - Frequency Hopping Spread Spectrum.	
• (3) RS232/485 ports used for protocol communication on MD1.	
• (4) As with all radio distances quoted, these are dependant on terrain and obstacles.	
Ordering Information	
Please specify frequency, RF power and channel spacing when ordering or contact your local ELPRO distributor for further information on ordering this product.	

Please Note: Technical specifications are subject to change without notice and are correct at time of publishing. Contact your local representative for enquiries.

THINK WIRELESS... THINK ELPRO



Contact ELPRO
Web site www.elprotech.com
E-mail ELPRO-sales@cooperindustries.com

Technical Support:
USA/Canada +1 866 713 4409
Other countries +61 7 3352 8624

Regional Offices:
Americas + 1 619 741 3574
Australasia + 61 7 3352 8600
Singapore + 65 6487 7887
Europe + 44 1582 723633
China + 86 01085625718-868

YOUR LOCAL PARTNER: