

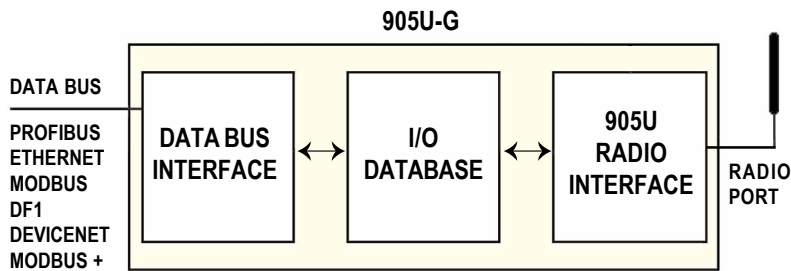
905U-G Wireless Gateway

Wireless connectivity between different data buses - Profibus, Ethernet, Modbus, DF1, DeviceNet, Modbus Plus

Interface between Wireless I/O and DCS/PLC/HMI

Wireless isolation firewall for data bus extension

The 905U-G Wireless gateway products provide a wireless interface between various data buses used in process and automation applications. The 905U-G includes an integral 900MHz license-free radio transceiver, and transfers transducer and control signals (I/O) using a highly secure and highly reliable radio protocol.



The 905U radio protocol is designed for very efficient radio usage, with configurable communications based on event reporting (I/O change), update times and/or poll response. Other features are:

- high security data encryption
- automatic acknowledgment and error-correction,
- peer to peer addressing, and
- multiple path routing

Applications include:

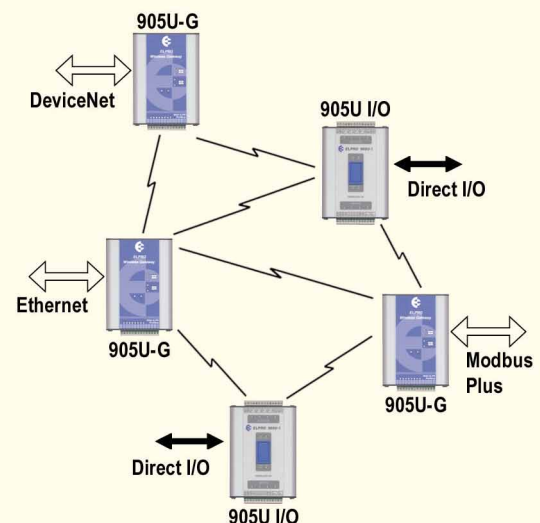
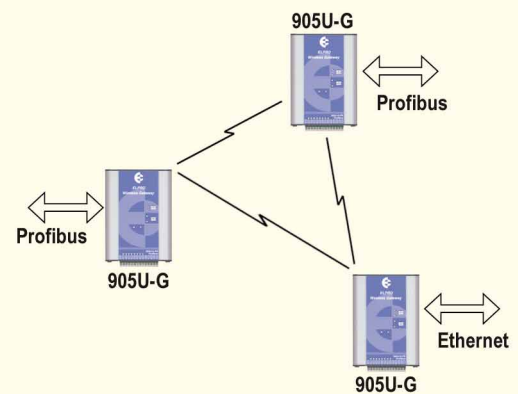
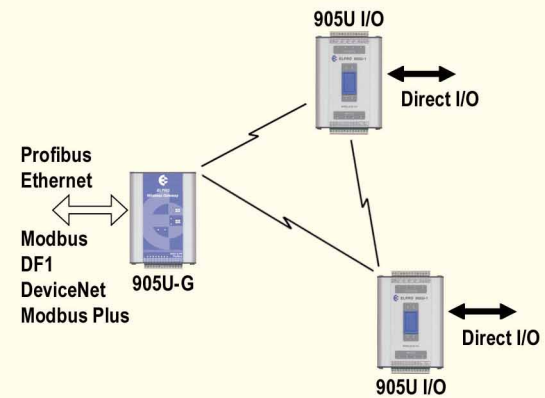
- ◆ The 905U-G interfaces between 905U wireless I/O and various data buses. Connect wireless I/O to PLC's, DCS, SCADA or Internet.
- ◆ Wireless extension of factory automation buses such as Profibus and Ethernet, providing a high security firewall.
- ◆ Wireless interconnectivity between different data buses - Ethernet to Profibus to Modbus to DF1.
- ◆ Combined networks of the above, forming an Elpro WIB ("Wireless Instrumentation Backbone").

The 905U-G modules also have eight on-board discrete I/O, individually configurable as input or output.

Network configuration is performed with easy-to-use free software. I/O links are configured between different modules in the network.

Ordering information:

| | |
|------------|--|
| 905U-G-MD1 | Modbus Master, Modbus Slave, DF1 interface |
| 905U-G-PR1 | Profibus DP Slave interface |
| 905U-G-PR2 | Profibus DP Master interface |
| 905U-G-ET1 | Ethernet IP / Modbus TCP / HTTP-FTP-Email |
| 905U-G-DE1 | DeviceNet Slave interface |
| 905U-G-M+1 | Modbus Plus Slave interface |



Power Supply

9 – 30VDC / 12 – 24VAC

Battery charging circuit included for 12V back-up battery, max charge current regulated to 0.7A (>12V supply)

Normal current drain

MD1 version 12V 150mA; 24V 90mA

Other version 12V 270mA; 24V 170mA

Add 5mA per active I/O

Current drain during radio transmission - add to above

12V 350mA; 24V 200mA

General

Modbus/DF1 version

-40 to 140 degF (-40 to 60 degC), 0 - 99 %RH

Profibus / Ethernet/ DeviceNet / Modbus Plus

30 to 140 degF (0 to 60 degC), 0 - 95 %RH

EMC Compliant EN55022, EN50082-1, FCC Part 15

Housing - extruded aluminum case 5.1 x 7.3 x 2.4 inches (130 x 185 x 60 mm), DIN rail mounting, removable terminal blocks for ease of module replacement, terminals suitable for 12 gauge (2.5sqmm) wire

LED indication for processor OK, radio TX and RX, serial TX and RX, active status.

I/O Capacity

Modbus / DF1 4300 I/O points (analog plus discrete)

Profibus Master, Ethernet, Modbus Plus

2048 bytes input and 2048 bytes output

up to 4300 discrete I/O points, or

up to 1024 analog in / 1024 analog out

Profibus Slave 416 I/O bytes

up to 1952 discrete inputs / 1952 discrete outputs, or

or up to 122 analog in / 122 analog out

DeviceNet 512 bytes input and 512 bytes output

up to 4300 discrete I/O points, or

up to 256 analog in / 256 analog out

Register size 16 bit

Number of remote 905U addresses 500

Radio Transceiver

License-free frequency-hopping spread spectrum, 902-928MHz

Transmit power 1W

Approved to FCC Part 15.247, RS210

Line-of-sight range, subject to local conditions

USA/Canada, 4W ERP, 20+ miles

Australia/NZ, 1W ERP, 20+ km

Obstructed range thru buildings and congested plant or factory,

typically 0.5 – 1.5 mile (1 – 2 km)

Range may be extended by up to four intermediate repeaters.

Data rate 19.2 Kbaud with FEC (raw rate 115.2 Kbaud)

Radio Transmission

Radio communications can be configured for combination of event reporting (change-of-value), update time, read/write blocks and poll response.

Radio message includes system addressing, unit addressing, error-checking and configurable security encryption.

Communication control includes message acknowledgments and up to four re-transmissions.

Peer to peer addressing. Messages may be routed thru four intermediate repeater addresses.

Fail-to-transmit and fail-to-receive alarms configurable

Modbus Specification

Modbus RTU (binary), master / slave configurable.

RS232 or RS485, 300 - 19200 bits/sec.

DF1 Specification

Allen-Bradley DF1 full-duplex.

RS232 only, 300 - 19200 bits/sec.

Profibus

Profibus-DP functionality according to EN 50170.

RS-485 optically isolated with on-board DC/DC converter, automatic baudrate detection (9600 bit/s - 12 Mbit/s)

Ethernet

10/100 Mbit/s, RJ45 connector, Transformer isolated interface

Modbus/TCP class 0, class 1 and partially class 2 slave

EtherNet/IP level 2 I/O Server

Embedded Web system (Dynamic HTTP), on-board file system (1.4MB flash disc), user downloadable web pages through FTP server, Email functionality (SMTP)

DeviceNet

DeviceNet 2.0 Slave, optically isolated RS422 with selectable baudrate between 125, 250 and 500 Kbit/sec.

Modbus Plus

Modbus Plus Slave, optically isolated RS485 with standard baudrate of 1 Mbit/sec, global data base transactions with routing for up to six networks.

On-board I/O

Eight discrete I/O, individually configurable as input or output. Inputs suitable for voltage free contacts.

Outputs are FET, 30VDC 500mA.

Configuration & Diagnostics

Configuration via free Windows software

Diagnostics include on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.

Area Classification

Class 1 Div 2 (USA, Canada).

Available from:



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Specifications subject to change without notice