

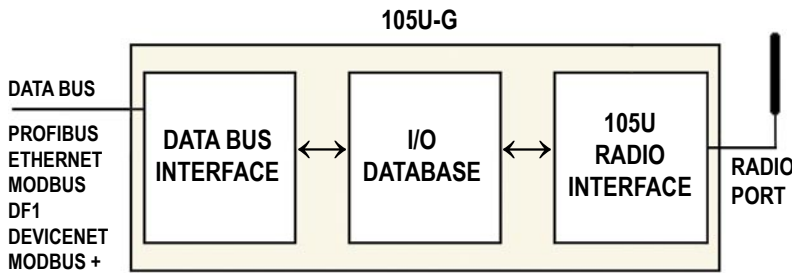
105U-G Wireless Gateway

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 extensions

The 105U-G Wireless gateway products provide a wireless interface between various data buses used in process and automation applications. The 105U-G includes an integral radio transceiver, and transfers transducer and control signals (I/O) using a highly secure and highly reliable radio protocol.



The 105U 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:

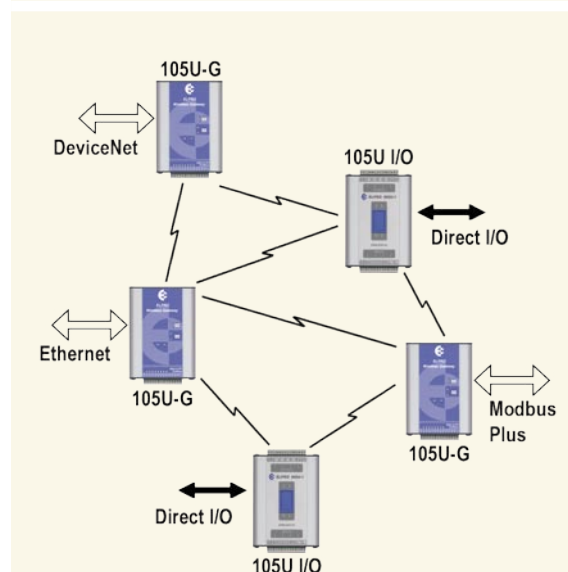
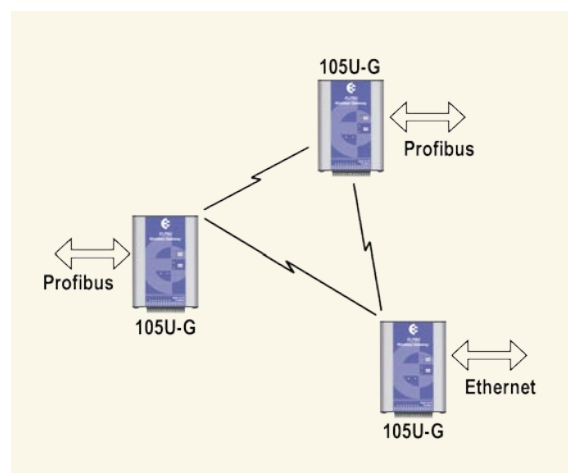
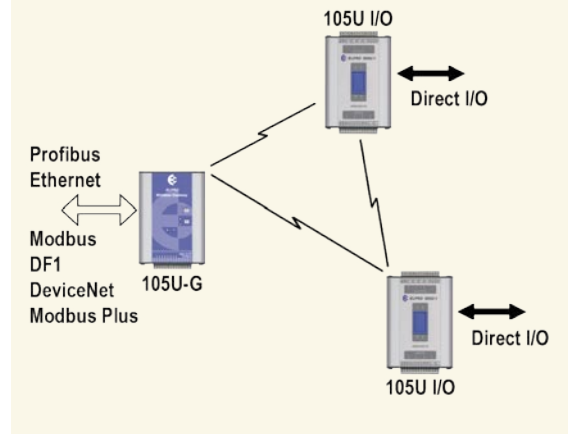
- ◆ The 105U-G interfaces between 105U wireless I/O and various data buses. Connect wireless I/O to PLC's, DCS, SCADA or Internet.
- ◆ Wireless extension of factory automation buses such as Profibus and Ethernet providing a high security firewall.
- ◆ Wireless interconnectivity between different data buses - Ethernet to Profibus to Modbus to DF1.
- ◆ Combined networks of the above, forming an *ELPRO* WIB ("Wireless Information Backbone")

The 105U-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:

- 105U-G-MD1 Modbus Master, Modbus Slave, DF1 interface
- 105U-G-PR1 Profibus DP Slave interface
- 105U-G-PR2 Profibus DP Master interface
- 105U-G-ET1 Ethernet IP / Modbus TCP / HTTP-FTP-Email
- 105U-G-DE1 DeviceNet Slave interface
- 105U-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

500mW 12V 300mA; 24V 200mA

5W 12V 1A; 24V 600mA

Transmission time can vary from 15-250 msec

General

Modbus/DF1 version

-20 to 60 degC, 0 - 99 %RH

Profibus / Ethernet / DeviceNet / Modbus Plus

0 to 60 degC, 0 - 95 %RH

EMC Compliant EN55022, EN50082-1, FCC Part 15

Housing - extruded aluminium case 130 x 185 x 60 mm, DIN rail mounting, removable terminal blocks for ease of module replacement, terminals suitable for 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 (analogue 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 analogue in / 1024 analogue out

Profibus Slave 416 I/O bytes

up to 1952 discrete inputs / 1952 discrete outputs,

or up to 122 analogue in / 122 analogue out

DeviceNet 512 bytes input and 512 bytes output

up to 4300 discrete I/O points, or

up to 256 analogue in / 256 analogue out

Register size 16 bit

Number of remote 105U addresses 500

Radio Transceiver

Single channel, synthesised, direct frequency modulation.

Frequency 405-490 MHz, 12.5KHz channels, 10-500mW, 1-5W

220-230 MHz, 25KHz channels, 5W

869.525 MHz, 250KHz channel, 500mW

Approved to EN 300 220, AS4268.2, RFS29

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 through 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 server (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.



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