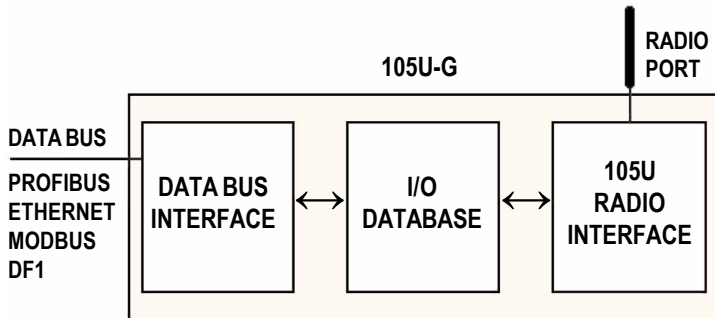


105U-G Wireless Gateway

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

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

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 license-free 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 band usage, with configurable communications based on event reporting (I/O change), update times and/or poll response. Other features are:

- automatic acknowledgment and error-correction,
- peer to peer addressing,
- multiple path routing, and
- frequency encoding and data encryption for system security.

Applications include:

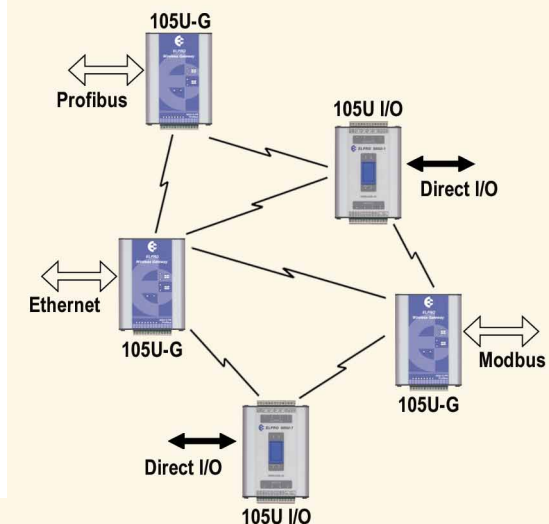
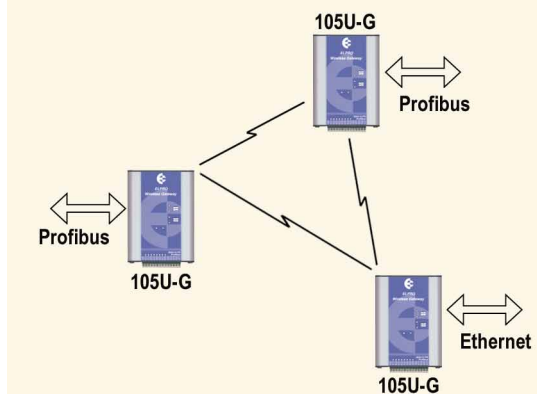
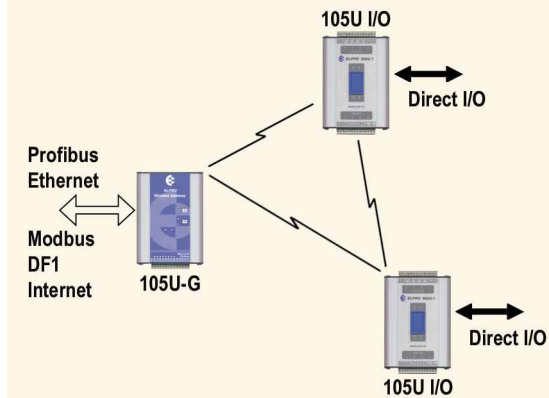
- ◆ The 105U-G interfaces between 105U wireless I/O and various data buses. Connect wireless I/O to PLC's, DCS, SCADA or Internet.
- ◆ Wireless extension of factory automation buses such as Profibus and Ethernet.
- ◆ Wireless interconnectivity between different data buses - Ethernet to Profibus to Modbus to DF1.
- ◆ Combined networks of the above.

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-ET1 | Ethernet IP / Modbus TCP / HTTP-FTP-Email SMTP |



Power Supply

9 – 30VDC / 12 – 24VAC

Battery charging circuit included for 12V back-up battery, max charge current regulated to 1A

Normal current drain

Modbus / DF1 version 12V 150mA; 24V 90mA

Profibus / Ethernet 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

-20 to 60 degC, 0 - 99 %RH

Profibus / Ethernet

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 (analog plus discrete)

Profibus 416 I/O bytes

up to 1952 discrete inputs / 1952 discrete outputs

or up to 122 analog inputs / 122 analog outputs

Ethernet 2048 bytes input and 2048 bytes output

up to 4300 discrete I/O points

or up to 1024 analog inputs / 1024 analog outputs

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

220-230 MHz, 25KHz channels, 5W

869.525 MHz, 250KHz channel, 500mW

Approved to EN 300 220, AS4268.2, RFS29

Expected line-of-sight range, with unity gain antennas

10mW - 2km; 500mW - 5km(869Mz) / 10km (400MHz);

5W - 40km

Range may be extended by up to four intermediate repeaters.

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) protocol, master / slave configurable.

RS232 or RS485, 300 - 19200 baud.

DF1 Specification

Allen-Bradley DF1 full-duplex specification. Acts as both Command Initiator and Command Recipient.

RS232 only, 300 - 19200 baud.

Profibus

Profibus-DP Slave 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 transformer isolated interface

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

EtherNet/IP level 2 I/O Server CIP (ControlNet & DeviceNet)

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

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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