805U-E Wireless Ethernet Modem
Long Range Wireless Ethernet for Reliable Industrial Connectivity

Applications

- PLC Communications
- Data Logger Communications
- Serial and Ethernet Communications
- SCADA Networks
- Water/Wastewater Systems
- Gas Wellhead RTU Communications

Description

The ELPRO 805U-E Wireless Ethernet Modem is a robust, license-free wireless transceiver capable of long range communications up to 5km. Operating at 869MHz and up to 500mW, the 802.11 standards-based ELPRO 805U-E provides reliable and secure two-way wireless communications in complex applications connecting PLC's, DCS and SCADA systems, dataloggers or field instruments in challenging outdoor environments typical of industrial monitoring and control applications.

Capable of operating in Access Point/Client configuration, functioning as a network Bridge/Router, or serving as a Serial Server (RS232/485), the ELPRO 805U-E offers node to node, node to multi-node and repeater functionality for scalability, with additional I/O expansion delivered through the use of ELPRO 115S Expansion modules. Security measures using MAC address, IP filtering and encryption to 128-bit AES provides increased reliability.

Features

- 869MHz Fixed Frequency for License-free Use in Europe and South Africa
- Single Channel 869.525MHz, 500mW (10% Duty Cycle Factor) or 869.875MHz, 5mW (100% Duty Cycle Factor), up to 72kpbs (Configurable) Throughput to Conform to European Regulatory Compliance
- Bridge/Router, Access Point/Client Configurable
- Serial Client/Server/Multicast Functionality (Point-Point; Point to Multi-Point) with Simultaneous Use of RJ45: RS232/485 Ports
- Modbus TCP to Modbus RTU Gateway/Modbus Master for I/O Transfer with Additional Slave I/O via ELPRO 115S Expansion Modules
- Spanning Tree Functionality (Self Heal)
- Security to 128-bit AES Military Grade Encryption
- MAC Address/IP Filtering Reducing Network Traffic
- Online Network Diagnostics and Configuration
- Onboard Discrete DI/O Channel for Failure Status

Specifications	
Transmitter/Receiver	
Frequency	869.525MHz 869.875MHz
Transmit Power	500mW[1] 5mW[2]
Modulation	Direct Frequency Shift Keying (DFSK)
Receiver Sensitivity	-106dBm @ 19.2kbps, -103dBm @ 72kbps (1% FER)
Channel Spacing	250kHz Single Channel
Data Rate	72kbps @ 500mW (10% Duty Cycle Europe)[1] 72kbps @ 5mW (100% Duty Cycle Europe)[2] "Auto Mode" selects fastest rate possible relative to RSSI
Range (LoS)	5km @ 500mW[1,3] 1km @ 5mW[2,3]
Antenna Connector	1 x Female SMA Standard Polarity
Input/Output	
Discrete I/O	Input Voltage-Free Contact[4] Output FET 30Vdc 500mA[4]
Ethernet Port	
Ethernet Port	10/100baseT; RJ45 Connector – IEEE 802.3
Serial Port	
RS232	DB9 Female DCE; RTS/CTS/DTR/DCD
RS485	2-Pin Terminal Block (Max Distance 4000'/1.2km - Non Isolated)
Data Rate (bps)	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400
Serial Settings	7/8 Data Bits; Stop/Start/Parity (Configurable)

Note: Specifications subject to change.
1) 869.525MHz
2) 869.875MHz
3) Typical Maximum Line of Sight Range
4) Can be used to Transfer I/O Status or Communications Failure Output

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Specifications	
Protocols and Configuration	
System Address	ESSID; 1 – 31 Character Text String
Protocols supported	TCP/IP, UDP, ARP, PPP, ICMP, HTTP, FTP, TFTP, TELNET, MODBUS-TCP
User Configuration	User Configurable Parameters and Diagnostics via HTTPS Embedded Web Server
Configurable Parameters	Access Point/Client/Bridge/Router Broadcast/Control Point-to-Point, Point-to-Multi-point Modbus TCP/RTU Gateway Serial Client/Server/Multicast Simultaneous RS232/485 Connection
Security	128-bit AES, 64-bit Propriety Encoding
Bandwidth Protection	MAC Address – Whitelist/Blacklist IP Filtering – Whitelist/Blacklist ARP Filtering – Whitelist/Blacklist
LED Indication	
LED Indication	Power/OK; RX; TX; Link; LAN; Serial; Digital I/O Status
Reported Diagnostics	RSSI Measurements (dBm) Connectivity Information/Statistics
Compliance	
EMC	CE; EN 301 489
RF (Radio)	EN 300 220
Safety	IEC 60950 (RoHS Compliant)
General	
Size	114 x 140 x 30mm (4.5" x 5.5" x 1.2")
Housing	Powder-Coated Aluminum
Mounting	DIN Rail
Terminal Blocks	Removable; Max Conductor 12AWG (2.5mm^2)
Temperature Rating	-20 to +60°C
Humidity Rating	0 – 99% RH Non-condensing
Weight	0.45kg (0.8lb)
Power Supply	
Nominal Supply	10 to 30Vdc; Under/Over Voltage Protection
Average Current Draw	220mA @ 12V (Idle); 120mA @ 24V (Idle)
Transmit Current Draw	550mA @ 12V (500mW); 290mA @ 24V (500mW)
Note: Specifications subject to change.	

Ordering

To order, select product code from the table and specify country of application.

Product Code	Description	Frequency	RF Power
805U-E-868-500M	Wireless Ethernet Modem	869.525MHz	500mW
805U-E-868-5MW	Wireless Ethernet Modem	869.875MHz	5mW
Note: Available RF power and frequency may vary depending on country of application.			

Accessories

The following accessories can assist with compatibility when commissioning.

Product Code	Description	Data Sheet #
Antennas - 900MHz		
DG800-1	Whip Antenna - SMA Male, Angle Bracket, -2dBi gain, 1m (3') Coaxial Cable	7942
WH900-SMA	Whip Antenna - SMA Male, -2dBi gain	7974
CFD890EL	Dipole Antenna - SMA Male, Mounting Bracket, 2dBi gain, 5m (16') Coaxial Cable	7973
SG900EL	Collinear Antenna - N-type Female, 5dBi gain	7980
SG900-6	Collinear Antenna - N-type Female, 8dBi gain	7979
YU6-900	Yagi Antenna - N-type Female, 9dBi gain	7976
YU16-900	Yagi Antenna - N-type Female, 15dBi gain	7978
Cables		
CC3/10/20-SMA	Coaxial Cable Kit - 3m (9.8')/10m (32')/20m (65'), N-type to SMA	7932 7947 7948
CCTAIL-SMA-F/M	Coaxial Cable Tail - 600mm (24"), SMA to N-type Female or Male	7951
SER-DB9	Serial RS232 Cable - DB9 Male to DB9 Female Straight Through	7955
ETH-C5X	Ethernet Cable - 1.8m (6'), Crossover, RJ45 to RJ45	7952
ETH-C5A	Ethernet Cable - 1.8m (6'), Direct, RJ45 to RJ45	7953
Surge Diverters		
CSD-SMA-2500	SMA Surge Diverter for use with CC10/CC20-SMA	7959
CSD-N-6000	Coaxial Surge Diverter - Bulkhead N Female to N Female	7960
MA15/D/2/SI	Power Supply Surge Diverter - 240Vac/15A	7936
IOP32D	Signal Surge Diverter, 2 x 2-wire/1 x 4-wire	7961
Power Supplies		
PS-DINAC-12DC-OK	DIN Rail Power Supply - 100 - 250Vac, 12Vdc/2.5A	7935
PS-DINAC-24DC-OK	DIN Rail Power Supply - 100 - 250Vac, 24Vdc/2A	7958
Mounting Brackets		
BR-COL-KIT	Mounting Bracket Kit for Collinear Antenna	7933
BR-YAG-KIT	Mounting Bracket Kit for Yagi Antenna	7957

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