

805U-E Wireless Ethernet Modem

Long-range wireless Ethernet for reliable industrial connectivity



Description

The ELPRO 805U-E Wireless Ethernet Modem is a robust, license-free wireless transceiver capable of long-range communications up to 3 miles (5 km). Operating at 869 MHz and up to 500 mW, the 802.11 standards-based ELPRO 805U-E provides reliable and secure two-way wireless communications in complex applications connecting PLCs, DCS and SCADA systems, data loggers, 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 (RS-232/RS-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 provide increased reliability.

Features

- 869 MHz fixed frequency for license-free use in Europe and South Africa
- Single channel 869.525 MHz, 500 mW (10% duty-cycle factor) or 869.875 MHz, 5 mW (100% duty-cycle factor), up to 72 kbps (configurable) throughput to conform to European regulatory compliance
- Bridge/router, access point client-configurable
- Serial client/server/multicast functionality (point to point, point to multipoint) with simultaneous use of RJ-45, RS-232/RS-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-healing)
- 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

Applications

- PLC communications
- Data logger communications
- Serial and Ethernet communications
- SCADA networks
- Water/wastewater systems
- Gas wellhead RTU
- Communications

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Specifications

SPECIFICATION	DESCRIPTION
Transmitter and Receiver	
Frequency	869.525 MHz 869.875 MHz
Transmit power	500 mW ① 5 mW ②
Modulation	Direct frequency shift keying (DFSK)
Receiver sensitivity	-106 dBm @ 19.2 kbps, -103 dBm @ 72 kbps (1% FER)
Channel spacing	250 kHz single channel
Data rate	72 kbps @ 500 mW (10% duty cycle, Europe) ① 72 kbps @ 5 mW (100% duty cycle, Europe) ② Auto mode selects fastest rate possible relative to RSSI
Range (LoS)	3 miles (5 km) @ 500 mW ① ③ 0.6 miles (1 km) @ 5 mW ② ③
Antenna connector	1 x female SMA standard polarity
Serial Port	
RS-232	D-B9 female DCE, RTS/CTS/DTR/DCD
RS-485	2-pin terminal block Max. distance 4000' (1.2 km), 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)
Protocols and Configuration	
System address	ESSID, 1 to 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 multipoint Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-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 and Diagnostics	
LED indication	Power/OK, RX, TX, link, LAN, serial, digital I/O status
Reported diagnostics	RSSI measurements (dBm) Connectivity information/statistics
Power Supply	
Nominal supply	10 to 30 Vdc, under/over voltage protection
Average current draw	220 mA @ 12V (idle), 120 mA @ 24V (idle)
Transmit current draw	550 mA @ 12V (500 mW), 290 mA @ 24V (500 mW)
Input and Output	
Discrete I/O	Input voltage-free contact ④ Output FET 30 Vdc 500 mA ④
Ethernet Port	
Ethernet port	10/100Base-T, R-J45 connector, IEEE 802.3
General	
Size	4.5" x 5.5" x 1.2" (114 mm x 140 mm x 30 mm)
Housing	Powder-coated aluminum
Mounting	DIN rail
Terminal blocks	Removable, max. conductor 12 AWG, 0.09 in. ² (2.5 mm ²)
Temperature rating	-4 to +140°F (-20 to +60°C)
Humidity rating	0-99% RH noncondensing
Weight	0.8 lb (0.45 kg)

SPECIFICATION	DESCRIPTION
Compliance	
EMC	CE, EN 301 489
RF (radio)	EN 300 220
Safety	IEC 60950 (RoHS compliant)

Note: Specifications are subject to change.

① 869.525 MHz

② 869.875 MHz

③ Typical maximum line-of-sight range

④ Can be used to transfer I/O status or communications failure output

Ordering

PRODUCT CODE	DESCRIPTION	FREQUENCY	RF POWER
805U-E-868-500M	Wireless Ethernet modem	869.525 MHz	500 mW
805U-E-868-5MW	Wireless Ethernet modem	869.875 MHz	5 mW

Note: Available RF power and frequency may vary depending on country of application.

Accessories

PRODUCT CODE	DESCRIPTION	DATA SHEET
Antennas - 900 MHz		
DG800-1	Whip antenna, SMA male, angle bracket, -2 dBi gain, 3' (1m) coaxial cable	TD032046EN
WH900-SMA	Whip antenna, SMA male, -2 dBi gain	TD032045EN
CFD890EL	Dipole antenna, SMA male, mounting bracket, 2 dBi gain, 16' (5m) coaxial cable	TD032048EN
SG900EL	Collinear antenna, N-type female, 5 dBi gain	TD032049EN
SG900-6	Collinear antenna, N-type female, 8 dBi gain	TD032050EN
YU6-900	Yagi antenna, N-type female, 9 dBi gain	TD032042EN
YU16-900	Yagi antenna, N-type female, 15 dBi gain	TD032051EN
Cables		
CC3/10/20-SMA	Coaxial cable kit, 9.8' (3m)/ 32' (10m)/65' (20m), N-type to SMA	TD032019EN TD032020EN TD032021EN
CCTAIL-SMA-F/M	Coaxial cable tail, 24" (600 mm), SMA to N-type female or male	TD032023EN
SER-DB9	Serial RS-232 cable, DB-9 male to DB-9 female straight through	TD032026EN
ETH-C5X	Ethernet cable, 6' (1.8m), crossover, RJ-45 to RJ-45	TD032024EN
ETH-C5A	Ethernet cable, 6' (1.8m), straight through, RJ-45 to RJ-45	TD032025EN
Surge Diverters		
CSD-SMA-2500	SMA surge diverter for use with CC10/CC20-SMA	TD032030EN
CSD-N-6000	Coaxial surge diverter, bulkhead N-type female to N-type female	TD032031EN
MA15/D/2/S1	Power supply surge diverter, 240 Vac/15A	TD032029EN
IOP32D	Signal surge diverter, 2 x 2-wire/1 x 4-wire	TD032032EN
Power Supplies		
PS-DINAC-12DC-OK	DIN rail power supply, 100-250 Vac, 12 Vdc/2.5A	TD032033EN
PSG60E	DIN rail power supply, 85-264 Vac, 24 Vdc/2.5A	TD032034EN
Mounting Brackets		
BR-YAGI-KIT	Mounting bracket kit for Yagi antenna	TD032072EN
BR-COL-KIT	Mounting bracket kit for collinear antenna	TD032071EN



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