

805U-D Wireless Serial Modem

RS-232/RS-485 serial data networking



Description

The ELPRO 805U-D Wireless Serial Modem is a robust, licensefree wireless transceiver capable of long-range communications to 10 miles (6 km). Operating at 869 MHz and up to 500mW, the ELPRO 805U-D provides high-speed RS232 and RS-485 connectivity up to 76.8 kbps, providing robust reliable and secure two-way wireless serial communications in challenging environments typical of industrial monitoring and control applications 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 high-speed communications with serial devices, the ELPRO 805U-D can communicate using either transparent broadcast mode or a controlled addressed mode. Both offer node-to-node, node-to-multi-node and repeatability for greater range. Integrated forward error correction maximizes bit error rate, providing greater transmission reliability. A configurable DTR-controlled low-power mode on the RS-232 port reduces overall power consumption. Approved for use in hazardous areas, the modem delivers strong resistance in harsh industrial environments.

Features

- 869.525 MHz frequency at 500 mW RF power
- 869.875 MHz frequency at 5 mW RF power
- Radio data rate up to 76.8 kbps
- High-speed RS-232 and RS-485 data rate to 115 kbps
- Transparent/simultaneous broadcast and addressable device messaging
- LOS distance to 6 miles (10 kms) in a single hop; unlimited repeatability
- Low-power consumption mode with DTR control
- Forward error correction communications (CRC error checking with ARQ)
- Simplistic configuration for AT Hayes commands or Windows software
- Helpful diagnostics include radio signal strength and BER indication applications

Applications

- Oil/gas field production/distribution
- Water/wastewater systems to SCADA
- Electrical metering/consumption
- Serial transducer devices to SCADA/HMI
- Serial datalogger connectivity
- PLC to PLC to SCADA/DCS connection
- Conveyor belt header drums
- Notification panels and siren

Specifications

SPECIFICATION	DESCRIPTION
Transmitter and Receiver	
Frequency	869.525 MHz ^a 869.875 MHz ^b
Transmit power	500 mW ^a 5 mW ^b
Modulation	Direct frequency shift keying (DFSK)
Receiver sensitivity	-106 dBm @14.4 kbps, -105 dBm @38.4 kbps, -103 dBm @76.8 kbps (1% FER)
Channel spacing	250 kHz single Channel
Data rate	72 kbps @ 500 mW (10% duty cycle, Europe) ^a 72 kbps @ 5 mW (100% duty cycle, Europe) ^b Auto mode selects fastest rate possible relative to RSSI
Range (LoS)	6 miles (10 km) @ 500 mW ^{a c} 0.6 miles (1 km) @ 5 mW ^{b c}
Antenna connector	1 x Female SMA standard polarity
Input and Output	
Discrete input	Input voltage-free contact ^d
Discrete output	Output FET Vdc 500mA ^d
Serial Port	
RS-232	DB-9 female DCE, RTS/CTS/DTR/DCD
RS-485	2-pin terminal block, non-isolated ^e
Data rate (bps)	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, bps
Serial settings	7/8 data bits, stop/start/parity (configurable)
Protocols and Configuration	
System address	Configurable 8-bit value (0–255)
Protocols supported	Operating mode, radio, and serial settings
User configuration	Windows software or AT Hayes commands via serial port
LED Indication and Diagnostics	
LED indication	Power/OK, radio TX/RX, serial TX/RX, DCD
Reported diagnostics	RSSI measurements (dBm), bit error ratio (BER)
Power Supply	
Nominal supply	10 to 30 Vdc, under/over voltage protection
Average current draw	70 mA @ 12V (idle), 50 mA @ 24V (idle)
Transmit current draw	350 mA @ 12V (500mW), 250 mA @ 24V (500mW)
Compliance	
EMC	CE, EN 301 489-3
RF (radio)	EN 300 220-2
Hazardous area	ATEX Zone 2
Safety	IEC 60950-1
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 14 AWG 0.1 in. ² (2.5 mm ²)
Temperature rating	-40 to +140°F (-40 to +60°C)
Humidity rating	0–99% RH noncondensing
Weight	1.1 lb (0.5 kg)

Note: Specifications subject to change.

^a 869.525 MHz

^b 869.875 MHz

^c Typical maximum line-of-sight range

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

Ordering

PRODUCT CODE	DESCRIPTION	FREQUENCY	RF POWER
805U-D-868-500W	805U-D wireless Serial	869.525MHz	500mW
805U-D-868-5MW	805U-D wireless Serial	869.875MHz	5mW

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

Accessories

PRODUCT CODE	DESCRIPTION
Antennas 900 MHz	
DG800-1	Whip antenna, SMA male, angle bracket, -2 dBi gain, 3' (1m) coaxial cable
WH900-SMA	Whip antenna, SMA male, -2 dBi gain
CFD890EL	Dipole antenna, SMA male, mounting bracket, 2 dBi gain, 16' (5m) coaxial cable
SG900EL	Collinear antenna, N-type female, 5 dBi gain
SG900-6	Collinear antenna, N-type female, 8 dBi gain
YU6-900	Yagi antenna, N-type female, 9 dBi gain
YU16-900	Yagi antenna, N-type female, 15 dBi gain

Cables

CC3/10/20-SMA	Coaxial cable kit, 9.8' (3m)/32' (10m)/65' (20m), N-type to SMA
CCTAIL-SMA-F/M	Coaxial cable tail, 24" (600 mm), SMA to N-type female/male
SER-DB9	Serial RS-232 cable, DB-9 male to DB-9 female, straight through
SER-RJ45	RS-232 serial cable, DB-9 female to RJ-45

Surge Diverters

CSD-SMA-2500	SMA surge diverter for use with CC10/CC20-SMA
CSD-N-6000	Coaxial surge diverter, bulkhead N-female to N-female
MA15/D/1/S1	Power supply surge diverter, 110 Vac/15A

Power Supplies

PS-DINAC-12DC-OK	DIN rail power supply, 100–250 Vac, 12 Vdc/5A
PS-DINAC-24DC-OK	DIN rail power supply, 85–264 Vac, 24 Vdc/2.5A

Mounting Brackets

BR-COL-KIT	Mounting bracket kit for collinear antenna
BR-YAG-KIT	Mounting bracket kit for Yagi antenna

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