



# 805U-D Wireless Serial Modem

**RS-232/RS-485 serial data networking**

## **Description**

The ELPRO 805U-D Wireless Serial Modem is a robust, license-free serial transceiver capable of long-range communications to 10 km (6 miles). Operating at 869 MHz and up to 500 mW, the ELPRO 805U-D provides high-speed RS-232 and RS-485 connectivity up to 76.8 kbps, providing robust and secure two-way wireless serial communications in challenging 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
<b>Transmitter and Receiver</b>	
Frequency	869.525 MHz, 869.875 MHz
Transmit power	500 mW, 5 mW
Transmission	Direct frequency shift keying (DFSK)
Modulation	Frequency shift keying
Receiver sensitivity	-106 dBm @ 14.4 kbps, -105 dBm @ 38.4 kbps -103 dBm @ 76.8 kbps (1% FER)
Channel spacing	Single 250 kHz channel
Data rate	14.4-76.8 kbps
Range (LoS)	6 miles (10 kms) @ 500 mW ①
Antenna connector	1 x female SMA standard polarity
<b>Serial Port</b>	
RS-232	DB9 female DCE; RTS/CTS/DTR/DCD (hardware signals provided)
RS-485	2-pin terminal block (max. distance 4000' (1.2 km), non-isolated)
Data rate (bps)	1.2 kbps to 115.2 kbps, configurable
Serial settings	7/8 data bits, stop/start/parity, configurable
<b>Protocols and Configuration</b>	
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
<b>LED Indicators and Diagnostics</b>	
LED indicators	Power/OK, radio TX/RX, serial TX/RX, DCD
Reported diagnostics	RSSI measurements (dBm), bit error ratio (BER)
<b>Compliance</b>	
EMC	EN 301 489-3
RF (radio)	EN 300 220-2
Hazardous area	ATEX Zone 2
Safety	EN60950-1
<b>General</b>	
Size	4.5" x 6.7" 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, 0.09 in. <sup>2</sup> (2.5 mm <sup>2</sup> )
Temperature rating	-40 to +140°F (-40 to +60°C)
Humidity rating	0-99% RH noncondensing
Weight	1.1 lbs (0.5 kg)
<b>Power Supply</b>	
Nominal supply	10-30 Vdc, under/over voltage protection
Average current draw	70 mA @ 12V (idle), 50 mA @ 24V (idle)
Transmit current draw	350 mA @ 12V (1W), 250 mA @ 24V (1W)

**Note:** Specifications are subject to change.

① Typical maximum line-of-sight range

## Ordering

PRODUCT CODE	DESCRIPTION	FREQUENCY	RF POWER
805U-D-868-500M	Wireless serial modem	869.525 MHz	500 mW
805U-D-868-5mW	Wireless serial 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
<b>Antennas 900 MHz</b>		
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	
YU6-870	Yagi antenna, N-type female, 9 dBi gain	
YU16-870	Yagi antenna, N-type female, 15 dBi gain	
<b>Cables</b>		
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	
<b>Surge Diverters</b>		
CSD-SMA-2500	SMA surge diverter for use with CC10/CC20-SMA	
CSD-N-6000	Coaxial surge diverter, bulkhead N-type female to N-type female	
MA15/D/1/S1	Power supply surge diverter, 240 Vac/15A	
IOP32D	Signal surge diverter, 2 x 2-wire/1 x 4-wire	
<b>Power Supplies</b>		
PS-DINAC-12DC-OK	DIN rail power supply; 100-250 Vac, 12 Vdc/2.5A	
PS-DINAC-24DC-OK	DIN rail power supply, 85-264 Vac, 24 Vdc/2.5A	
<b>Mounting Brackets</b>		
BR-COL-KIT	Mounting bracket kit for dipole and collinear antennas	
BR-YAG-KIT	Mounting bracket kit for Yagi antenna	



**ELPRO Technologies**

9/12 Billabong Street  
Stafford Queensland 4053 Australia

Telephone:  
Global: +61 7 3352 8600  
USA: +1 855 443 5776

[sales@elpro.com.au](mailto:sales@elpro.com.au)  
[www.elpro.com.au](http://www.elpro.com.au)

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