



Industrial Wireless Products

radio telemetry
wireless gateways
radio data modems



Elpro products are found in every industry as an alternative to signal and data wiring. They have internal integrated radios designed for license-free (low power) and licensed (high power) radio bands.

Typical applications include

- moving cranes or trucks
- ecologically sensitive areas
- places exposed to theft of cables
- irrigation schemes

- sewerage or water works
- mining

What characterises Elpro is reliable and secure data transfer, digital repeating, versatility and ease of use.

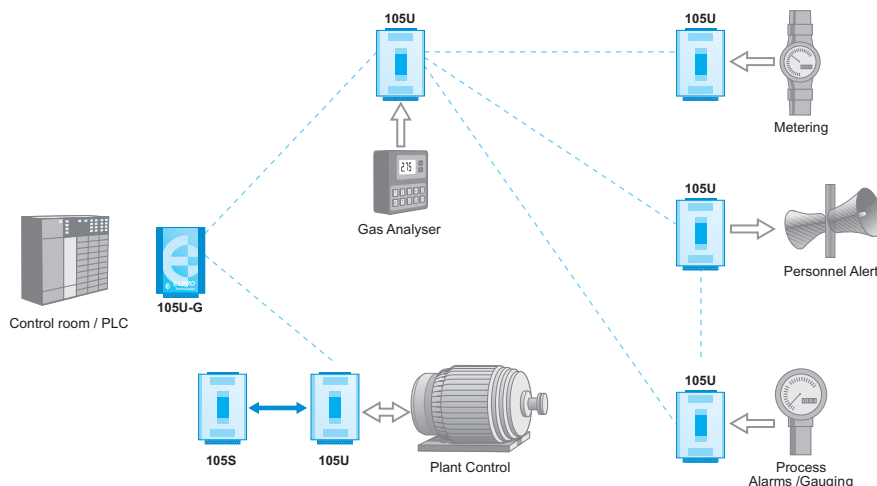
Group

Wireless I/O (telemetry) connect to transducers, switches or sensors and transmit signal values per radio. Signals are either re-created on the receiving end or output as data connection- Ethernet, Profibus, Modbus etc.

Wireless Gateway products provide connectivity between data buses, between devices using the same bus or between different data buses- Ethernet to Profibus to Devicenet etc.

Radio Modems transmit serial or Ethernet data via radio, providing a wireless link between intelligent devices.

Industrial Wifi provides high speed wireless Ethernet connectivity in process and automation plants.



I/O Modules

Wireless I/O: 105U and 505U

105U and 505U telemetry units transmit signal values from transducers, switches or sensors per radio. Inputs / outputs can be digital or analogue. Certain modules also cater for pulse inputs/outputs for counting or frequency transmission.

- Transmission triggered by change of input signal and after pre-configured time
- Security encryption with system addressing to avoid cross-talk
- Dynamic error-checking
- "Listen before transmit" operation
- License-free radio band: 405-490MHz (100mW), 869MHz (500mW)
- Long distance: up to 50km per hop (5W, licensed, line-of-sight)

The I/O Modules from Elpro can be used to sense remote digital, analogue and pulse I/O signals.

	105U-1	105S-1	105U-2	105S-2	105U-3	105S-3	105U-4	105S-4	505U
Radio Port	✓		✓		✓		✓		✓
Serial Port	✓	✓	✓	✓	✓	✓	✓	✓	✓
Digital Inputs	4		4		0		4 - 16		2
Digital Outputs	4		1		8		4 - 16		0
Analogue Inputs	2		6		0		0		1
Analogue Outputs	2		0		8		0		0
Pulse Inputs	1		4		0		4		0
Pulse Outputs	1		0		4		4		0

Pulse and digital I/O are same. The 105-4 has 4 fixed inputs and 4 fixed outputs and 12 which may be either input or output
 U = radio transceiver, S = serial 485 expansion module

105U products provide multiple I/O channels with transceiver two-way communication. Different I/O versions are available and inputs on one version can be linked to outputs on another version.

- Multiple digital, analog and pulse I/O
- I/O expansion with 105S unit
- Analog setpoint status with high/low setpoints
- Pulse count (totalizing) and pulse rate values calculated
- Failsafe outputs, configurable
- Unit can act as repeater for other units



505U is a transmit-only product with ultra-low energy consumption, suitable for powering from a battery pack. It offers an economic solution for remote monitoring of process signals.

- Two digital inputs
- One analog input
- Power-saving "sleep mode"
- Low-battery alarm
- Compatible with 105U



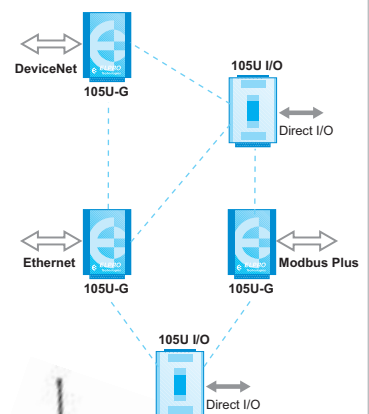
Gateways

Elpro offers a wide range of wireless gateways that can interface to fieldbuses through Modbus, Profibus, Ethernet, Devicenet and Modbus Plus. Data transfer happens on change of state and close to real-time monitoring/control is achieved. One of the great features of using the Elpro Gateways is that any Gateway can talk to any other gateway or I/O Module. You may for instance have a Gateway with Modbus interface talking to a Gateway with Profibus interface. These modules can also talk to I/O modules in the same system.

Wireless Gateway: 105U-G

The 105U-G interfaces between a wireless I/O network (e.g. 505U and 105U) and an external data bus such as Profibus, Ethernet and Modbus. It thus connects I/O to PLC, DCS, SCADA or internet. The unit can also provide wireless connectivity between different data buses: Ethernet to Profibus to Devicenet etc.

- On-board discrete, configurable I/O ports (8x)
- Configurable reporting: I/O change, update time and/or poll response
- High security data encryption
- Automatic acknowledgement and error-correction
- Peer to peer addressing
- Multiple path routing, digital repeating and block data transfer.

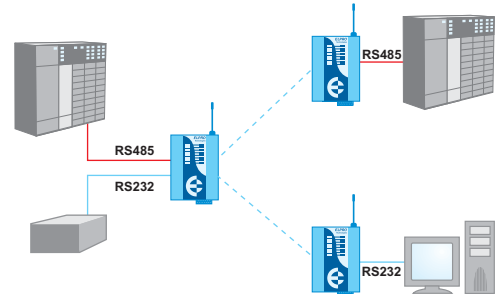


Radio Modems

455U and 805U-D

The 455U/805U-D radio modems transmit serial or Ethernet data via radio, providing a wireless link between intelligent devices.

- High speed radio data rate: 9 600 bits/sec (455U), 76 800 bits/sec (805U-D)
- License-free radio band: 433MHz (455U) / 868MHz (805U-D)
- Single hop distance 5Km line-of-sight unlicensed, 40km licensed (455U)
- Repeater function for long distances
- Unlimited repeater hops
- Repeater routing via address selection
- Forward error correction, CRC error checking with ARQ
- Turn-around time 5msec
- Signal strength and BER indication
- Configurable on-line by Hayes AT commands or Windows software
- Transparent broadcast mode, peer to peer

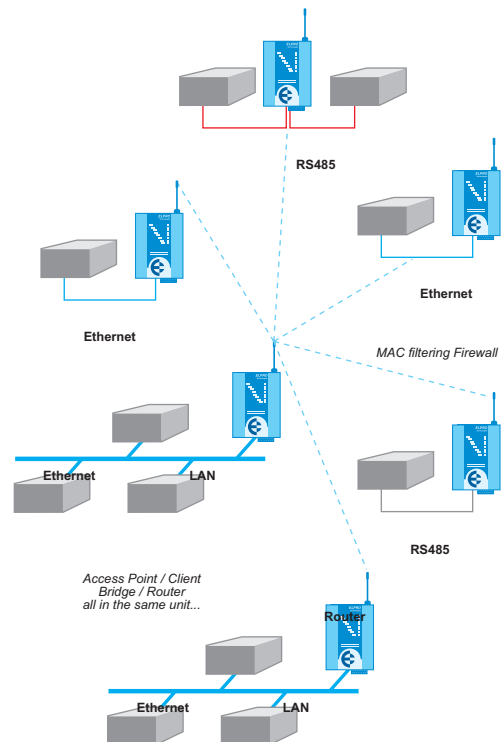


Industrial Wifi

805U-E / 240U-E

The 805U-E is an ideal solution for high speed wireless Ethernet connections in process control and automation – PLC's, DCS and SCADA.

- All in the same unit: Access point, client/server, Bridge, Router, Repeater
- License-free radio band: 869MHz, 500mW, 2.4GHz 100mW
- Long distance: 5km per hop (line-of-sight), 1km (line-of-sight)
- Excellent penetration, over 500m through buildings, walls and steelwork
- Multiple layer error detection and correction
- Automatic changeover of access point if wireless link fails
- Military-grade AES security encryption
- Secure firewall protection
- Two serial interfaces: RS232 and RS485
- Modbus serial to Modbus TCP conversion
- Discrete channel for status I/O, failure status or external status transfer
- Configuration and diagnostics via web-browser



Standard Stock Items

stock code	Description
Radio Telemetry Modules Wireless I/O, 400-500MHz 10-500mW / 869MHz 500mW	
UCE-105U-1	Radio telemetry I/O module - 4DI(1PI),4DO,2AI,2AO,1PO,
UCE-105U-2	Radio telemetry I/O module - 4DI(4PI),1DO,6AI
UCE-105U-3	Radio telemetry output module - 8DO,8AO,4PO
UCE-105U-4	Radio telemetry I/O module - 4DI & 4DO fixed plus 12 DI/O programmable for input or output
Line Telemetry Modules (Slave units for 105U, also for standalone use with serial communication)	
UCE-115S-11	Serial telemetry I/O module - 16 DI/O, 4PI, 4PO
UCE-115S-12	Serial telemetry I/O module - 8 DI/O, 4AI (8AI command) (commoned neg.)
UCE-115S-13	Serial telemetry output module - 8 DI/O, 8AO
105U-G Radio Wireless Gateway Wireless Gateway, 400-500MHz 10-500mW / 869MHz 500mW	
UCE-105U-G-MD1	Modbus master, modbus slave, DF1 interface
UCE-105U-G-PR1	Profibus DP slave Interface
UCE-105U-G-PR2	Profibus DP master Interface
UCE-105U-G-ET1	Ethernet IP / modbus TCP / HTTP-FTP-email
UCE-105U0-G-DE1	DeviceNet slave
UCE-105U-G-M+1	Modbus Plus slave
Compact Radio Telemetry Modules: Transmit only	
UCE-505U-2E	Radio telemetry input module (433.925MHz) - 2DI or 2PI, 1AI, external 12VDC power supply, 100mW EIRP
UCE-505U-2B	Radio telemetry input module (433.925MHz) - 2DI or 2PI, 1AI, internal battery power, 100mW EIRP
Radio Data Modems (Transmission of serial data for PC/PLC applications, transparent or control mode)	
UCE-455U-DH440N	Radio modem module, (433.675MHz), serial, 1 - 5W
UCE-805U-D	Radio modem module, (869.525MHz), 500mW RS232 or RS485
UCE-805U-E	Ethernet radio modem, (869.525MHz), serial, 500mW RS232 or RS485
UCE-240U-E	Ethernet radio modem, (2.4 GHz), serial, 100mW - Ethernet RS232 or RS485
Aerials & cables: (for 105U/505U 433.925MHz)	
UCE-AC-D1-C	Dipole Aerial with N-type termination (433.925MHz)
105U/505U/805U frequency: (869.525MHz)	
UCE-CFD890EL	Antenna dipole, 5m RG58/SMA connector, and mounting bracket
240U frequency: (2.4GHz)	
UCE-AC-14DB-PANL	14dBi flat panel antenna with mounting bracket
UCE-AC-8DBOMNI	8dBi omni directional antenna
Cables & Accessories	
UCE-AC-CC-06B	6m RG213 cable with N-Type male connectors
UCE-AC-CC-01A	1m RG58 cable with BNC male to N-Type male
Antenna brackets	
UCE-AB-WM3AL	Wall mount bracket (150mm) for dipole antenna only
Enclosure	
	Enclosure for system
Power supplies	
UCE-PS-U24DC	C-Rail/wallmount240/24VDC power supply for 105U or 405U
Lightning protection	
UCE-EK-EARTHROD	1.5mm copper earthrod - M16
UCE-LP-RFSA	Coaxial inline RF surge arrester
Batteries	
UCE-BT-12V	7.0 Ah sealed lead acid battery 12V