

245U-E-G1 wireless Ethernet modem

802.11 wireless Ethernet for reliable long-distance connectivity



Description

The ELPRO 245U-E-G1 wireless Ethernet modem is a robust, inexpensive, license-free wireless 802.11 standards-compliant transceiver capable of high-bandwidth communications. Operating at 2.4 GHz and up to 630 mW, the ELPRO 245U-E-G1 is optimized for data rates of up to 108 Mbps, providing robust long-distance and secure two-way wireless communications in challenging 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 245U-E-G1 offers node-to-node deterministic mesh network repeatability for greater range and multiple channel spacing options to increase network scalability. Integrated Modbus® server capability allows seamless

I/O expansion through the use of ELPRO 115S expansion modules or third-party modbus devices.

The ELPRO 245U-E-G1 is a cost-effective and robust solution to enable your devices for the Internet of Things (IoT) and Industrie 4.0. With an easy to access 802.11 wireless network, the 245U-E-G1 allows your devices to communicate through the industry-standard 2.4 GHz frequency band used by most devices. The 245U-E is a cost-effective and robust Ethernet modem, with industry-leading transmit power and industrial ratings.

Applications

- · Factory automation and safety interlocks
- · Networking wind turbines and solar collectors
- · Video surveillance
- Automated vehicle control
- · Tank farm monitoring

Features

- 802.11b/g standard-compliant options
- 2.412–2.472 GHz frequency (802.11b/g) and 15–630 mW RF power
- Up to 108 Mbps data rate support
- 13-channel (802.11b/g) support
- · Single antenna connection for easy installation
- Access point/client and bridge/router configuration
- Serial client/server/multicast Modbus TCP to RTU gateway
- 10/100Base-T IEEE® 802.3 Ethernet
- · Spanning tree (self-healing) support
- Deterministic AP-to-AP mesh network repeatability
- Fast roaming for AP-to-AP handover
- IEEE 802.11i secure 128-bit AES encryption (WPA2)
- · MAC and IP address filtering
- · Digital I/O channel transfer
- Configurable settings for high-noise environments
- Over-the-air network diagnostics and configuration
- VLAN tagging support for bridging and routing modes

Specifications

Specifications subject to change.

Table 1. 245U-E-G1 specifications

Transmitter and receiver Frequency Transmit power Transmission modulation Direct sequence spread spectrum (DSSS) ⊕ Orthogonal frequency data modulation (OFDM) ⊕ Receiver sensitivity —100 dBm at 250 kbps;—74 dBm at 108 Mbps (8% FER) ⊕ Channel spacing Data rate 250 kbps—108 Mbps ⊕ "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ⊕ ⊕ Antenna connector 1 x female SMA, standard polarity Imput and output Discrete I/O Input voltage-free contact ⊕ Output FET 30 Vdc 500 mA ⊕ Ethernet port	Specification	Description		
Transmit power 15–630 mW (country-specific) Transmission modulation Direct sequence spread spectrum (DSSS) ⊙ Orthogonal frequency data modulation (OFDM) ⊙ Receiver sensitivity -100 dBm at 250 kbps; -74 dBm at 108 Mbps (8% FER) ⊙ Channel spacing 5 MHz spacing (13 channels, 2.412–2.472 GHz) ⊙ Data rate 250 kbps-108 Mbps ⊙ "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ⊙ ⊚ Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ⊚ Output FET 30 Vdc 500 mA ⊚ Ethernet port Ethernet port Ethernet port Ethernet port Ethernet port By Female DCE, RTS/CTS/DTR/DCD RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊚ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TEINET, Modobus and Modous-TCP User configuration User configuration User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP-AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11x with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection Reported diagnostics RSSI measurements, connectivity information/statistics, log file				
Transmit power Transmission modulation Direct sequence spread spectrum (DSSS) ⊕ Orthogonal frequency data modulation (OFDM) ⊕ Receiver sensitivity -100 dBm at 250 kbps; -74 dBm at 108 Mbps (8% FER) ⊕ Channel spacing 5 MHz spacing (13 channels, 2.412-2.472 GHz) ⊕ Data rate 250 kbps-108 Mbps ⊕ "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ⊕ @ Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ⊕ Output FET 30 Vdc 500 mA ⊕ Ethernet port Ethernet port Uink, 100Base-T, RJ-45 connector-IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊕ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings Protocols and configuration System address ESSID; 1-31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, CMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configuration User configurative and sistribution system (AP-AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.1x Radius server Secure HTTP protocol Bandwidth protection RMC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics RSSI measurements, connectivity information/statistics, log file				
Transmission modulation Direct sequence spread spectrum (DSSS) ⊕ Orthogonal frequency data modulation (OFDM) ⊕ Receiver sensitivity -100 dBm at 250 kbps; -74 dBm at 108 Mbps (8% FER) ⊕ Channel spacing 5 MHz spacing (13 channels, 2.412–2.472 GHz) ⊕ Data rate 250 kbps; -08 Mbps ⊕ "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ⊕ ⊕ Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ⊕ Output FET 30 Vdc 500 mA ⊕ Ethernet port 100Base-T, RJ-45 connector-IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊕ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1-31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, CMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to multipoint Wireless distribution system (AP-AP repeater) Modbus TCP/RTU gateway, Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11 with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist RRP/GARP filtering; whitelist/blacklist RRP/GARP filtering; whitelist/blacklist Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file				
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Receiver sensitivity -100 dBm at 250 kbps; -74 dBm at 108 Mbps (8% FER) ① Channel spacing Data rate 250 kbps; -108 Mbps ① "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ① ② Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ③ Output FET 30 Vdc 500 mA ③ Ethernet port Ethernet port Ethernet port Uink, 100Base-T, RJ-45 connector—IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ④ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1-31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Parameters Point to point, point to multipoint Wireless distribution system (AP-AP repeater) Modbus TCP/RU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist Protection and diagnostics LED indication and diagnostics LED indication files Resource assurements, connectivity information/statistics, log file				
Channel spacing 5 MHz spacing (13 channels, 2.412–2.472 GHz) ⊕ Data rate 250 kbps–108 Mbps ⊕ "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ⊕ ⊕ Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ⊕ Output FET 30 Vdc 500 mA ⊕ Ethernet port 100Base-T, RJ-45 connector–IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊕ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Parameters Via HTTPS embedded Vireless distribution system (AP–AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11x with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection Power/OK, RX, TX/link, RS-232, LAN, RS-485, digita				
Data rate 250 kbps—108 Mbps ① "Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ② ② Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ③ Output FET 30 Vdc 500 mA ③ Ethernet port Ethernet port Ethernet port Link activity Link, 100Base-T, RJ-45 connector—IEEE 802.3 Link activity Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ④ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTF, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Parameters Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11x in with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist RRP/GARP filtering; whitelist/blacklist LED indication and diagnostics RSSI measurements, connectivity information/statistics, log file	Receiver sensitivity			
#Auto Mode" selects fastest rate possible relative to RSSI Range (LoS) 9 miles (15 km) ⊕ ② Antenna connector 1 x female SMA, standard polarity Input and output Discrete I/O Input voltage-free contact ③ Output FET 30 Vdc 500 mA ③ Ethernet port Ethernet port 100Base-T, RJ-45 connector-IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ④ Data rate (bps) 1200, 2400, 4800, 9500, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1-31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP-AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11 with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics ED indication Power/OK, RX, TX/Inik, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Channel spacing	5 MHz spacing (13 channels, 2.412–2.472 GHz) ①		
Antenna connector Input and output Discrete I/O Input voltage-free contact ③ Output FET 30 Vdc 500 mA ④ Ethernet port Ethernet port Ink, 100Base-T, RJ-45 connector-IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ④ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1-31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, TFTP, TETP, TETNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP-AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist Pfiltering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics RSSI measurements, connectivity information/statistics, log file	Data rate	250 kbps–108 Mbps ① "Auto Mode" selects fastest rate possible relative to RSSI		
Input and output Discrete I/O	Range (LoS)	9 miles (15 km) ① ②		
Discrete I/O	Antenna connector	1 x female SMA, standard polarity		
Ethernet port Ethernet port Ethernet port Ionum 100Base-T, RJ-45 connector—IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊕ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TEI.NET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Parameters Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-495 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Input and output			
Ethernet port 100Base-T, RJ-45 connector—IEEE 802.3 Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ④ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1−31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TEINET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Parameters Point to point, point to multipoint Wireless distribution system (AP−AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Discrete I/O			
Link activity Link, 100Base-T via LED Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊕ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1−31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TETP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Point to point, point to multipoint Wireless distribution system (AP−AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics RSSI measurements, connectivity information/statistics, log file	Ethernet port			
Serial port RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ⊕ Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable parameters Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP–AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist LED indication and diagnostics Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Ethernet port	100Base-T, RJ-45 connector-IEEE 802.3		
RS-232 DB-9 female DCE, RTS/CTS/DTR/DCD RS-485 2-pin terminal block, non-isolated ② Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP–AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Link activity	Link, 100Base-T via LED		
RS-485 2-pin terminal block, non-isolated ① Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1—31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable parameters Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Serial port			
Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	RS-232	DB-9 female DCE, RTS/CTS/DTR/DCD		
Data rate (bps) 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400 bps Serial settings 7/8 data bits, stop/start/parity (configurable) Protocols and configuration System address ESSID; 1–31 character text string Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	RS-485	2-pin terminal block, non-isolated ④		
Protocols and configuration System address	Data rate (bps)	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600,		
Protocols and configuration System address	Serial settings	7/8 data bits, stop/start/parity (configurable)		
Protocols supported TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TFLNET, Modbus and Modbus-TCP User configuration User configurable parameters via HTTPS embedded Web server Configurable Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file				
User configuration User configurable parameters via HTTPS embedded Web server Configurable Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	System address	ESSID; 1–31 character text string		
Web server Configurable parameters Access point/client/bridge/router/VLAN Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information RSSI measurements, connectivity information/statistics, log file	Protocols supported	TCP/IP, UDP, ARP, SNMP, RADIUS/802.1x, DHCP, DNS, PPP,		
parameters Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection Embedded Modbus master/slave for I/O transfer Security Data encryption, 802.11i with CCMP 128-bit AES Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	User configuration			
Support for 802.1x Radius server Secure HTTP protocol Bandwidth protection MAC address; whitelist/blacklist IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file		Point to point, point to multipoint Wireless distribution system (AP—AP repeater) Modbus TCP/RTU gateway Serial client/server/multicast Simultaneous RS-232/RS-485 connection		
IP filtering; whitelist/blacklist ARP/GARP filtering; whitelist/blacklist LED indication and diagnostics LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Security	Support for 802.1x Radius server		
LED indication Power/OK, RX, TX/link, RS-232, LAN, RS-485, digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	Bandwidth protection	IP filtering: whitelist/blacklist		
digital I/O status Refer to product manual for further information Reported diagnostics RSSI measurements, connectivity information/statistics, log file	LED indication and			
Reported diagnostics RSSI measurements, connectivity information/statistics, log file	LED indication	digital I/O status		
	Reported diagnostics	RSSI measurements, connectivity information/statistics,		
	Network management			

- $\ensuremath{\bigcirc}$ Frequency range dependent on country of model.
- ② Typical maximum line of sight range, RF Power dependent.
- $\ensuremath{\mathfrak{G}}$ Can be used to transfer I/O status or communications failure output.
- ① ④ Maximum distance: 3937 ft (1200 m).

Table 1. 245U-E-G1 specifications, continued

Specification	Description	
Compliance		
EMC	FCC Part 15; EN 301 489-17; AS/NZS CISPR22	
RF (radio)	EN 300 328 ①; FCC Part 15; RSS 210	
Hazardous area	CSA Class I, Division 2; ATEX; IECEx nA IIC	
Safety	IEC 60950 (RoHS compliant)	
UL®	UL Listed	
General		
Size	4.5 in x 5.5 in x 1.2 in (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	1.0 lb (0.45 kg)	
Power supply		
Nominal supply	9 to 30 Vdc, under/overvoltage protection	
Average current draw	270 mA at 12 V (idle); 140 mA at 24 V (idle)	
Transmit current draw	470 mA at 12 V (400 mW), 250 mA at 24 V (600 mW)	

Product selection

Table 2. 245U-E-G1 accessories

Antennas 2.4 GHz Dipole antenna, 15 ft (4.6 m) cellfoil/ SMA, 0-dBi gain, mounting bracket Collinear antenna, N-type, 5-dBi gain, mounting bracket Collinear antenna, N-type, 10-dBi gain, mounting bracket Yagi antenna, N-type, 18-dBi gain Y2400-18EL Whip antenna: SMA male, 2-dBi gain, 2.1 in (54 mm) Cables Coaxial cable kit, 9.8 ft (3 m)/ 32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A DIN rail power supply, 100-250 Vac, 24 Vdc/2.5 A Mounting brackets Mounting bracket kit for collinear antenna BR-COL-KIT	Description	Product code	
Dipole antenna, 15 ft (4.6 m) cellfoil/SMA, 0-dBi gain, mounting bracket Collinear antenna, N-type, 5-dBi gain, mounting bracket Collinear antenna, N-type, 10-dBi gain, mounting bracket Yagi antenna, N-type, 18-dBi gain, which is a second of the property of the prope		Froduct code	
mounting bracket Collinear antenna, N-type, 10-dBi gain, mounting bracket Yagi antenna, N-type, 18-dBi gain Whip antenna: SMA male, 2-dBi gain, 2.1 in (54 mm) Cables Coaxial cable kit, 9.8 ft (3 m)/ 32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets Z2400-EL WH2400 CC3/10/20-SMA CC3/10/20-SMA CCTAIL-SMA-F/M SCTAIL-SMA-F/M CCTAIL-SMA-F/M CCTAIL-SMA-F/M STH-C5X ETH-C5X ETH-C5A BTH-C5A BTH-C5A Surge diverters SMA surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets	Dipole antenna, 15 ft (4.6 m) cellfoil/	MD2400-EL	
mounting bracket Yagi antenna, N-type, 18-dBi gain Whip antenna: SMA male, 2-dBi gain, 2.1 in (54 mm) Cables Coaxial cable kit, 9.8 ft (3 m)/ 32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets WH2400 CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA CCTAIL-SMA-F/M ETH-C5X ETH-C5X STH-C5A WH2400 CC3/10/20-SMA CCANA-F/M MH25/DX MA15/DX PS-DINAC-12DC-OK PS-G60E		SG2400-EL	
Whip antenna: SMA male, 2-dBi gain, 2.1 in (54 mm) Cables Coaxial cable kit, 9.8 ft (3 m)/ 32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female VN-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets		Z2400-EL	
2.1 in (54 mm) Cables Coaxial cable kit, 9.8 ft (3 m)/ 32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female To N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA CC3/10/20-SMA ETH-C5X ETH-C5X ETH-C5A SUB-C5A ETH-C5A BTH-C5A BTH-C5A BTH-C5A SUB-C5A WA15/D/1/S1 Power supply surge diverter, 110 Vac/15 A PS-DINAC-12DC-0K	Yagi antenna, N-type, 18-dBi gain	Y2400-18EL	
Coaxial cable kit, 9.8 ft (3 m)/ 32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Volver supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets CC3/10/20-SMA CC3/10/20-SMA CCTAIL-SMA-F/M ETH-C5X ETH-C5A SUB-CSD-SMA-2500 CSD-SMA-2500 CSD-SMA-2500 CSD-N-6000 CSD-N-6000 PS-DINAC-12DC-0K		WH2400	
32.8 ft (10 m)/65.6 ft (20 m), N-type to SMA Coaxial cable tail, 1.97 ft (600 mm), SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets CCTAIL-SMA-F/M ETH-C5X ETH-C5A ETH-C5A SUB-N-C5A ETH-C5A MA15/D/1/S1 PS-SMA-2500 CSD-N-6000 CSD-N-6000 PS-DINAC-12DC-0K	Cables		
SMA to N-type female/male Ethernet cable, 6 ft (1.8 m), crossover, RJ-45 to RJ-45 Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/ CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A Mounting brackets ETH-C5X ETH-C5A CSD-SMA-2500 CSD-SMA-2500 CSD-N-6000 PSD-N-6000 PSD-N-	32.8 ft (10 m)/65.6 ft (20 m),	CC3/10/20-SMA	
Ethernet cable, 6 ft (1.8 m), direct, RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets		CCTAIL-SMA-F/M	
RJ-45 to RJ-45 Surge diverters SMA surge diverter for use with CC10/CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets CSD-N-6000 CSD-N-6000 CSD-N-6000 PSD-N-6000 PSD-N-6		ETH-C5X	
SMA surge diverter for use with CC10/CC20-SMA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets CSD-N-6000 MA15/D/1/S1 PS-DINAC-12DC-0K		ETH-C5A	
CC20-SMĂA Coaxial surge diverter, bulkhead N-female to N-female Power supply surge diverter, 110 Vac/15 A Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets CSD-N-6000 MA15/D/1/S1 PS-DINAC-12DC-OK	Surge diverters		
to N-female Power supply surge diverter, 110 Vac/15 A MA15/D/1/S1 Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets		CSD-SMA-2500	
Power supplies DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets PS-DINAC-12DC-OK PSG60E		CSD-N-6000	
DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets PS-DINAC-12DC-0K PSG60E	Power supply surge diverter, 110 Vac/15 A	MA15/D/1/S1	
12 Vdc/2.5 A DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A Mounting brackets PSG60E	Power supplies		
24 Vdc/2.5 A Mounting brackets	DIN rail power supply, 100–250 Vac, 12 Vdc/2.5 A	PS-DINAC-12DC-OK	
	DIN rail power supply, 85–264 Vac, 24 Vdc/2.5 A	PSG60E	
Mounting bracket kit for collinear antenna BR-COL-KIT	Mounting brackets		
	Mounting bracket kit for collinear antenna	BR-COL-KIT	

Table 3. 245U-E-G1 ordering

Description	Frequency	RF power	Product code
Ethernet 802.11b/g	2.4 GHz DSSS	630 mW	EL-245U-E-G1-AU
Ethernet 802.11b/g	2.4 GHz DSSS	630 mW	EL-245U-E-G1-US
Ethernet 802.11b/g	2.4 GHz DSSS	100 mW	EL-245U-E-G1-EU

Effective September 2018



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 www.elpro.com.au

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