115E-2 Ethernet Networking I/O and Gateway

Configurable and scalable multiple I/O node for industrial applications

Features

- Modbus RTU and TCP support
- DNP3 I/O Outstation option
- Serial client/server/multicast Modbus TCP to RTU gateway
- Configurable digital, pulse, and analog I/O to 14-bit resolution
- Gather-scatter and block mapping
- 10/100BaseT IEEE 802.3 Ethernet
- Network diagnostics and configuration

Applications

- Water and wastewater systems
- Oil and gas production and distribution
- Pipeline monitoring and leak detection
- Mining operations infrastructure

Description

The ELPRO 115E-2 Ethernet Networking I/O and Gateway is a multiple I/O node that extends communications to sensors and actuators in local, remote, or difficult to reach locations. Designed to work with wired and wireless devices, the ELPRO 115E-2 is capable of providing IP-based I/O across sprawling industrial environments typical of industrial applications.

The 115E-2 can serve as an end node or network gateway and is scalable to thousands of nodes. Gather-scatter and block mapping technology offers the efficient use of network resources, allowing point-to-point transfer of process signal within complex monitoring and control systems. Integrated Modbus® server capability allows further I/O expansion through the use of ELPRO 115S expansion modules.

The 115E-2 feature key options provides functionality for DNP3 I/O Outstation allowing for connectivity to DNP3 SCADA applications. With the combination of DNP3 and Modbus the 115E-2 also functions as a Modbus to DNP3 gateway converting legacy Modbus devices to DNP3 I/O tags.

Specifications

SPECIFICATION	DESCRIPTION
Input and Output	
Digital input	8 digital inputs (shared with outputs), 1–4 configurable as PI or PO On-state voltage: <2.1 Vdc Wetting current: 5 mA Max. I/P pulse rate DI 1/2: 50 kHz, DI 3/4: 1 kHz Max. I/P pulse width DI 1/2: 10 µsec, PI 3/4: 0.2 msec
Digital output	8 digital outputs (shared with inputs), 1–4 configurable as PI or PO Load voltage, DO max. 30 Vdc Load current, DO max. 200 mA Max O/P pulse rate, PO max. rate 1 kHz
Analog input	4 AI (2 differential, 2 single ended) Current range: 0–24 mA Current resolution: 14 bits Accuracy (current): 0.1% Voltage input range: AI 1/2: 0–25V, AI 3/4: 0–5V Voltage resolution: 14 bits Accuracy (voltage): 0.1%
Analog output	2 AO (sourcing) Current range: 0–24 mA Current resolution: 13 bits Accuracy (current): 0.1%
Ethernet Port	
Ethernet port	10/100BaseT, RJ-45 connector, IEEE 802.3
Link activity	Link, 100BaseT via LED
Serial Port	
RS-232	EIA-562 (RJ-45 connector)
RS-485	2-pin terminal block, 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	1 to 31-character text string
Protocols supported	TCP/IP, UDP, HTTP, FTP, TFTP, TELNET, Modbus, Modbus TCP

Specifications (continued)

SPECIFICATION	DESCRIPTION
User configuration	All user-configurable parameters via HTTPS
Configurable parameters	Unit details, I/O mappings and parameters (for more, refer to the user manual) Modbus TCP/ RTU gateway Embedded modbus master/slave for I/O transfer DNP3 I/O and gateway (level 2+)
Security	Secure HTTP protocol
LED Indication and Diagnostics	
LED indication	Power/OK, RS-232, RS-485, digital I/O, analog I/O status
Reported diagnostics	Connectivity information/statistics, system log file
Network management	Optional Network Management System (NMS)
Compliance	
EMC	FCC Part 15, EN 55022, AS 3548, CE
Hazardous area	UL/CSA Class I, Division 2; ATEX; IECEx Na IIC - PENDING
Safety	IEC 60950 (RoHS compliant)
UL	UL listed
Power Supply	
Nominal supply	10.8–30 Vdc, under/over voltage protection
Average current draw	220 mA @ 12V (idle), 110 mA @ 24V (idle)
General	
Size	5.91" x 7.09" x 1.38" (180 mm x 150 mm x 35 mm)
Housing	IP20-rated high-density thermoplastic
Mounting	DIN rail
Terminal blocks	Removable, max. conductor 12 AWG 0.1 in.^{2} (2.5 mm^2)
Temperature rating	–40 to +140°F (–40 to +60°C) Max +70°C / 158°F non hazloc
Humidity rating	0–99% RH noncondensing
Weight	1.1 lb (0.5 kg)

Note: Specifications are subject to change.

Ordering

PRODUCT CODE	DESCRIPTION
115E-2	Ethernet I/O

Accessories

PRODUCT CODE	DESCRIPTION
Interface	
915U-TCADP	T-type TCP thermocouple adapter that uses two analog inputs and two analog outputs
915U-LOG	Data logging feature key
915U-DNP3	DNP3 I/O Outstation Feature key. See Data sheet for DNP3 specifications
Cables	
ETH-C5A	Ethernet cable, 6' (1.8m), direct, RJ-45 to RJ-45
SER-RJ45	Configuration cable, RS-232 serial, DB-9 female to RJ-45
Surge Diverters	
MA15D1SI/D2SI	Power supply surge diverter, 110 Vac/15A or 240 Vac/15A
IOP32D	Signal surge diverter, 2 x 2-wire/1 x 4-wire
Power Supplies	
PS-DINAC-12DC-OK	DIN rail power supply, 100–250 Vac, 12 Vdc/2.5A
PSG60E	DIN rail power supply, 85–264 Vac, 24 Vdc/2.5A

Note: Additional accessories are available for this product, including antennas, cables, and mounting brackets. Refer to our Web site for details.

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