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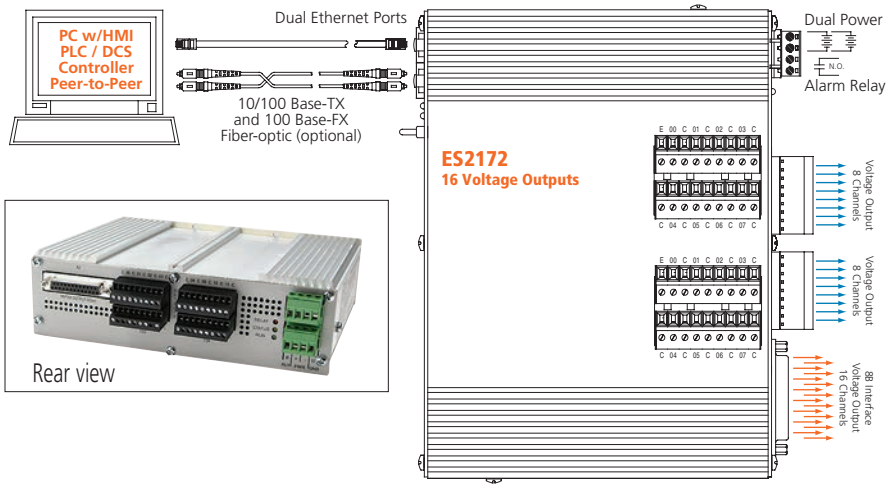
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Ethernet I/O: EtherStax® Series

ES2172 Ethernet Analog Output Modules





16 analog voltage outputs ◆ Modbus TCP/IP, UDP/IP, i2o® peer-to-peer communication

Description

These EtherStax I/O units provide a rugged, high-density, and high-speed solution to interface analog output signals. Each unit provides 16 high-level analog voltage outputs to control various industrial devices.

Typical applications include driving indicators, display devices, and chart recorders. The outputs can also control variable speed drives, solenoid valves, motors, positioners and other actuators. Another common use is for re-transmission of analog signals to remote SCADA, PLC, or DCS systems.

EtherStax units are built and tested for high reliability and dependable performance in hostile environments. Available in an aluminum enclosure or as an open circuit board, both formats stack vertically to maintain a very small footprint.



Open circuit board versions are also available.

Output Ranges

±5V, ±10 V DC

Ethernet Communication

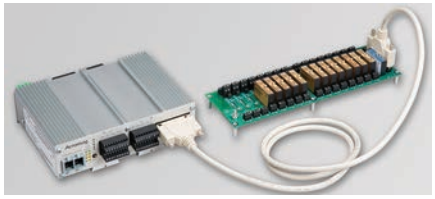
10/100Base-T(X) and 100Base-FX,
Automatic MDI/MDI-X on all copper ports,
Modbus TCP/IP or UDP/IP protocol
i2o peer-to-peer

Power Requirement

18 to 36V DC (redundancy-ready)

Approvals

CE, UL/cUL:
Zone 2, Class 1, Division 2, Groups ABCD



Interface to isolated 8B analog output modules.



Select from a dozen 8B output modules.

Key Features & Benefits

- 16-channel high-density analog output
- 3-way isolation and surge suppression
- High-resolution 16-bit D/A
- High-speed updates of less than 4 milliseconds for all channels
- Built-in loop-back circuit verifies outputs
- On-demand self-test verifies calibration
- Web browser configuration
- Peer-to-peer i2o communication output target device for Model ES215x inputs

i2o Peer-to-Peer Messaging

With Acromag's i2o technology, you can map inputs from ES215x units to output channels on an ES2172 module. Select updates based on time or on a percent of range change (100mS or 0.1% resolution).

Acromag® THE LEADER IN INDUSTRIAL I/O

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Performance Specifications

◆ Analog Field Outputs

Output Channel Configuration
16 single-ended DC voltage outputs.

Output Ranges (per-channel basis)
±5V, ±10V DC (at ±1mA).
User-configured on a per-channel basis.

Output Impedance
1 ohm maximum.

Output Resolution and Accuracy
Resolution (±10V): 16-bit maximum, 0.00166%.
Resolution (±5V): 15-bit maximum, 0.00305%.
Accuracy: Better than 0.05% of range.

Output Response Time
1 channel: Less than 3mS, typical.
16 channels: Less than 4mS, typical.

◆ External 8B Output Modules

See Bulletin 8400-479 for details.

◆ Local Alarm Output

Configuration
Failsafe or non-failsafe (user-configurable) relay trips on power or link-loss failure.

Type
SPST-NO, 1 Form A, Class I, Division II approved.

Rating
3A @ 24V DC/250V AC, 100,000 cycles general.
2A @ 24V DC/250V AC, Hazardous locations.

Maximum Switching Voltage and Power
250V AC / 750VA, 125V DC / 90W.

◆ Ethernet Interface

Internal Switch or Hub/Repeater
Dual-port Ethernet switch. User-configurable as a true switch (default mode) or low-latency hub.

Network Connector [10/100 Base-T(X) Copper]
One or two 8-pin RJ-45 connectors. Automatic MDI/MDI-X. 100m communication distance.

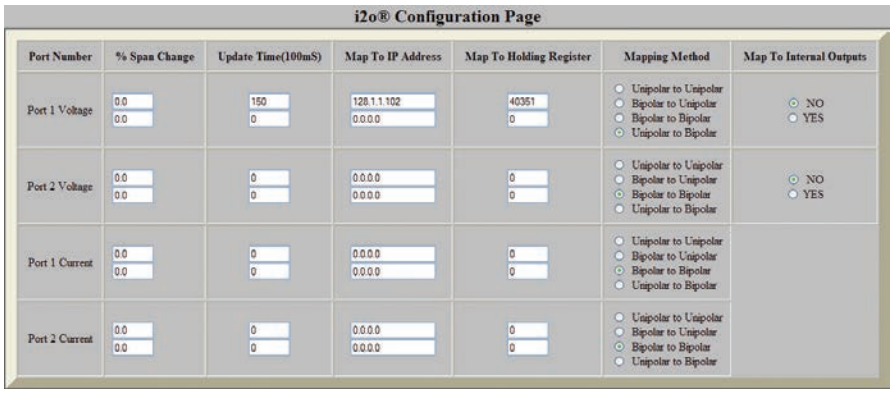
Network Connector (100 Base-FX Fiber-optic)
One multi-mode with SC connector. 2km communication distance. Full/half-duplex, selectable.

Protocols
Modbus TCP/IP, UDP/IP, i2o peer-to-peer.

Addressing
StaticIP, DHCP.

Ethernet Modbus TCP/IP Sockets/Sessions
1-10 socket/sessions user-configurable.

Ethernet Redundancy
Compatible with STP, RSTP, or any ring scheme.



Example i2o peer-to-peer mapping configuration screen from input source module (ES215x model).

◆ i2o Peer-to-Peer Communication

Each port of 8 output channels can serve as a target for mapped inputs from ES215x units. Updates are based on time (100mS resolution) or percent of range change (0.1% resolution).

◆ Environmental

Operating and Storage Temperature
Operating: -40 to 70°C (-40 to 158°F).
Storage: -40 to 85°C (-40 to 185°F).

Power Requirements
18-36V DC. Redundant, diode-coupled terminals.
3.3W (copper ports), 4.6W (fiber-optic ports), not including excitation power.

Isolation
I/O, power, relay and Ethernet port-to-port.
Peak: 1500V AC, ANSI/ISA-82.01-1988.
Continuous: 250V AC, 354V DC (150V AC ch-ch).

◆ Enclosure and Physical

Housing Classification and Dimensions
IP20: 8.226 x 2.444 x 7.25", 4 lbs. packed.
PCB: 7.920 x 1.875 x 7.25", 1.65 lbs. packed.

Safety Approvals)
CE marked and UL/cUL Listed.

Hazardous Locations: Class I; Div 2; A, B, C, D.
Open board units: UL Recognized.

Shock and Vibration Immunity (in enclosure)
Mechanical Shock: 50g (3ms), 30g (11ms).

Random Vibration: 5g, (5-500Hz).

Ordering Information

◆ Models

ES2172-0000
Voltage outputs, two Cu ports, IP20 enclosure

ES2172-0010
Voltage outputs, two Cu ports, open board (no IP20 enclosure)

ES2172-1000
Voltage outputs, Cu & fiber ports, IP20 enclosure

ES2172-1010
Voltage outputs, Cu & fiber ports, open board (no IP20 enclosure)

◆ Accessories

8B Modules and Backpanels
See Page 32.

Industrial Ethernet Switches
See Page 33.

Hardware Accessories and Power Supplies
See Page 34.

Software Support
See Page 36.

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