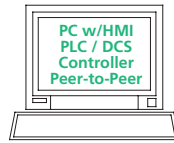




Ethernet I/O: EtherStax® Series

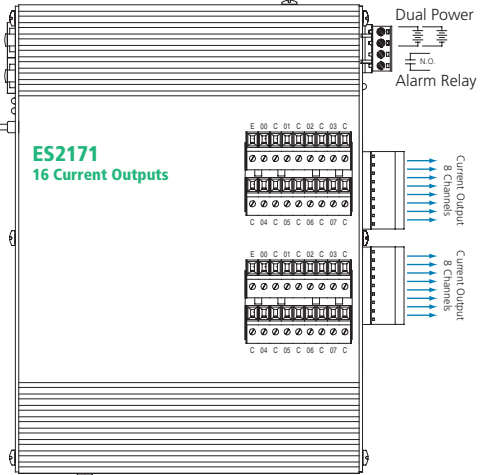
ES2171 Ethernet Analog Output Modules



Dual Ethernet Ports
10/100 Base-TX and 100 Base-FX
Fiber-optic (optional)



Rear view



16 analog current 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 current 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.

Output Ranges

0-20mA, 4-20mA DC

Ethernet Communication

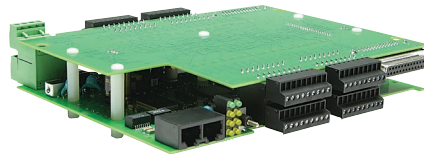
10/100Base-T(X) and 100Base-FX, Automatic MDI/MDI-X on all copper ports, Modbus TCP/IP or UDP/IP protocol i2o peer-to-peer

Power Requirement

18 to 36V DC (redundancy-ready)
9 to 16V DC output excitation required

Approvals

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



Open circuit board versions are also available.

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 ES2171 module. Select updates based on time or on a percent of range change (100mS or 0.1% resolution).

ISO9001
AS9100
MADE IN USA

Acromag
THE LEADER IN INDUSTRIAL I/O

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Ethernet I/O: EtherStax® Series

ES2171 Ethernet Analog Output Modules



Performance Specifications

◆ Analog Field Outputs

Output Channel Configuration

16 single-ended current outputs.
9-16V DC external excitation required.

Output Ranges (per-channel basis)

0-20mA or 4-20mA DC sourced.
User-configured on a per-channel basis.

Maximum Output Load at Excitation

265 ohms @ 9V.
400 ohms @ 12V.
540 ohms @ 15V.

Output Resolution and Accuracy

Resolution: 13-bit maximum, 0.0122%.
Accuracy: Better than 0.1% of range.

Output Response Time

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

◆ 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.

i2o® Configuration Page						
Port Number	% Span Change	Update Time(100mS)	Map To IP Address	Map To Holding Register	Mapping Method	Map To Internal Outputs
Port 1 Voltage	0.0 0.0	150 0	128.1.1.102 0.0.0.0	40351 0	☐ Unipolar to Unipolar ☐ Bipolar to Unipolar ☐ Bipolar to Bipolar ☐ Unipolar to Bipolar	☐ NO ☐ YES
Port 2 Voltage	0.0 0.0	0 0	0.0.0.0 0.0.0.0	0 0	☐ Unipolar to Unipolar ☐ Bipolar to Unipolar ☐ Bipolar to Bipolar ☐ Unipolar to Bipolar	☐ NO ☐ YES
Port 1 Current	0.0 0.0	0 0	0.0.0.0 0.0.0.0	0 0	☐ Unipolar to Unipolar ☐ Bipolar to Unipolar ☐ Bipolar to Bipolar ☐ Unipolar to Bipolar	
Port 2 Current	0.0 0.0	0 0	0.0.0.0 0.0.0.0	0 0	☐ Unipolar to Unipolar ☐ Bipolar to Unipolar ☐ Bipolar to Bipolar ☐ Unipolar to Bipolar	

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.
9-16V DC @ 400mA external power required for driving the outputs.

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

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

[Go to on-line ordering page >](#)

ES2171-0000

Current outputs, two Cu ports, IP20 enclosure

ES2171-0010

Current outputs, two Cu ports, open board
(no IP20 enclosure)

ES2171-1000

Current outputs, Cu & fiber ports, IP20 enclosure

ES2171-1010

Current outputs, Cu & fiber ports, open board (no
IP20 enclosure)

◆ Accessories

Industrial Ethernet Switches

Hardware Accessories and Power Supplies

Software Support

Acromag 
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