

New Ethernet I/O units feature a 64-channel 16-bit A/D interface to raise the bar for high-density analog input.

Acromag introduces very cost-effective and space-saving analog input units for its EtherStax® I/O series to provide high-resolution scanning of up to 64 single-ended channels monitoring DC current or voltage signals.



Acromag has released a new analog input module for its [EtherStax® series](#) of rugged Ethernet I/O featuring extremely high density to further reduce the cost per channel and save space. Designed for distributed I/O and SCADA applications, the [ES2163](#) and [ES2164](#) models perform 16-bit A/D conversion on up to 64 single-ended DC current or voltage inputs, respectively, and interface the signals to Ethernet devices or controllers with Modbus TCP/IP or UDP/IP protocol communication. Fast scanning updates all 64 channels in less than 10mS. An embedded web page provides easy setup menus to eliminate programming. Units are available in a variety of configurations with prices starting at \$2850.

Two models support a variety of I/O ranges and offer powerful signal processing functions for around \$45/channel. The ES2163 accepts DC current with $\pm 20\text{mA}$, 0-20mA, or 4-20mA input ranges. ES2164 units accept $\pm 5\text{V}$ or $\pm 10\text{V}$ ranges. The 64 channels are organized into eight 8-channel scan groups. The first 8-channel group can deliver updates in just 1.8mS to achieve maximum scan rates of over 500Hz. Each additional 8-channel group adds only 1.2mS to the update time. A user-configurable sample averaging capability helps improve accuracy and cancel out noise effects. The integration/totalization function, ideal for flow measurement applications, has non-volatile registers to safely store information.

Numerous features help increase reliability, improve performance, and protect from harsh industrial environments. Dual network ports support 10/100Base-TX copper and 100Base-FX fiber-optic connections with a redundant communication path for critical applications. Dual DC power terminals enable use of redundant power sources. A failsafe relay provides alarm output on a power or link-loss failure. Continuous 250V AC (354V DC) isolation – with a peak 1500V AC rating – safely separates I/O signals from the power, relay, and Ethernet ports. The compact, stackable aluminum enclosure resists shock and vibration making it ideal for mounting directly on machinery. Multiple units are stackable in a space-saving 8 x 7” footprint. An open board version is available for custom mounting.

An internal isolated dual-port Ethernet switch provides dual-path communication redundancy with support of STP, RSTP, and any proprietary ring redundancy schemes. EtherStax units can operate as remote slave devices or communicate independently

between units (i.e. peer-to-peer). Ten Modbus TCP/IP sockets allow simultaneous communication with multiple masters.

The stackable, high-density packaging enables installation of nearly 400 I/O points across a 19" rack. A high-strength aluminum enclosure gives IP20 protection with 50g shock and 5g vibration resistance. This rugged design is ideal for mounting on DIN rails, walls, or directly on machinery. Plug-in terminal blocks offer easy installation and servicing. A stackable open board version (no housing) is lightweight and simplifies mounting in alternative enclosures with lower costs for OEMs and system integrators.

EtherStax I/O are designed for high-reliability operation. Units feature 1500Vrms isolation with surge protection to increase performance and minimize downtime. The isolation separates power, relay, I/O, and individual Ethernet ports. Industrial-grade specs include extended -40 to 70°C operating temperatures for low power, high efficiency, fan-less designs. Redundant DC power input with internal diode coupling delivers a "bump-less" transfer to the backup power source. A hardware watchdog timer can send outputs to a failsafe state or hold the last value if there is a communication failure. Failsafe SPST 5A fault relays provide local alarming, notification, or shutdown if network communication or power fail.

EtherStax are well-suited to many applications for both end-users and OEMs. The remote monitoring and control capabilities are perfect for SCADA, embedded, and test & measurement applications. Typical uses include power generation, chemical, oil/gas, simulators/trainers, and automation operations. On the plant floor, the rugged design delivers dependable performance for a variety of distributed I/O functions. And in a control panel, the compact design permits mounting in tight spaces. CE and UL approvals are pending. EtherStax are suitable for use in Class I, Division 2, Group A, B, C, and D locations.

Acromag is an international corporation that has been manufacturing and developing measurement and control products for more than 50 years. Acromag offers a complete line of industrial I/O products including process instruments, signal conditioning equipment, data acquisition boards, distributed I/O systems, and network communication devices.

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