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Acromag
THE LEADER IN INDUSTRIAL I/O

IP440A-x
Isolated Digital Input

IP440A Industrial I/O Pack (IP) modules provide 32 optically isolated inputs to safely monitor a wide range of digital input voltage levels.

Isolation protects your computer system from noise, transient signals, and field wiring faults. The inputs are grouped into four 8-channel ports. Ports are isolated from the logic and each other.

Change-of-state interrupts are supported using paired channels. Debounce eliminates spurious interrupts from noise and switching transients for error-free edge detection.

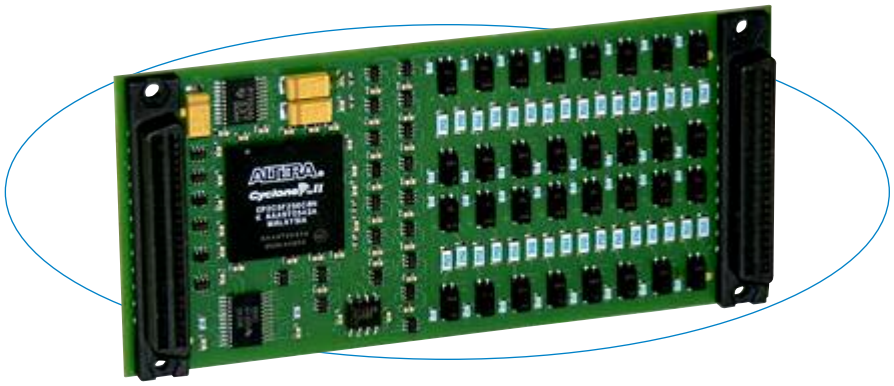
Closed-loop monitoring of critical control signals is easily accomplished using the IP440A in conjunction with Acromag's IP445 digital output module.

Features

- 32 port-isolated input channels
- Three input ranges (different models):
  IP440A-1: ±4 to ±18V DC or AC peak
  IP440A-2: ±16 to ±40V DC or AC peak
  IP440A-3: ±38 to ±60V DC or AC peak
- Interrupt support for each channel
- High speed processing (0 wait states)
- Programmable polarity of event interrupts (low-to-high or high-to-low transitions)
- Programmable debounce
- Input hysteresis
- Reverse polarity protection
- Software configuration (no jumpers or switches)

Benefits

- Software configuration allows "on-the-fly" changes without removing modules.
- Pins are compatible with IP445 output module for loopback monitoring
- Loopback monitoring enables self-test and fault diagnostics to detect open switches or shorts.



When used together, the IP440A input module and IP445 output module simplify loop-back monitoring of your critical signals.

Specifications

Digital Inputs

Input channel configuration: 32 optically isolated inputs.

Isolation: Logic and field connections are optically isolated. Individual ports are also isolated from each other. Input lines of individual ports share a common connection and are not isolated from each other. Logic and field lines are isolated from each other for voltages up to 250V AC rms 250V DC on a continuous basis (unit will withstand a 1500V AC dielectric strength test for one minute without breakdown).

Bipolar input voltage range:
IP440A-1: ±4 to ±18V DC or AC peak.
IP440A-2: ±16 to ±40V DC or AC peak.
IP440A-3: ±38 to ±60V DC or AC peak.

Input low-to-high threshold:
IP440A-1: ±2V typical.
IP440A-2: ±6.8V typical.
IP440A-3: ±13.75V typical.

Input response time:
On to off: 15µS typical.
Off to on: 10µS typical.

Interrupts: 32 channels configurable as below.
High-to-low transitions
Low-to-high transitions
Change-of-state (two inputs required)

Debounce: Selectable for 4µS, 64µS, 1mS, or 8mS.

IP Compliance (ANSI/VITA 4)

Meets IP specifications per ANSI/VITA 4-1995.

IP data transfer cycle types supported:
Input/output (IOSel*), ID read (IDSel*), Interrupt select (INTSel*).

Access times (8MHz clock): 0 wait states (250ns cycle).

Updates: Requires four 8-bit reads to update all channels.

Environmental

Operating temperature: 0 to 70°C (IP440A-1/2/3) or -40 to 85°C (IP440A-1E/2E/3E models).

Storage temperature: -55 to 150°C (all models).

Relative humidity: 5 to 95% non-condensing.

MTBF: Contact the factory.

Power:
+5V (±5%): 150mA maximum, 65mA typical.
±12V (±5%): 0mA (not used).

Ordering Information

Industry Pack Modules

IP440A-1
Digital input, ±4 to ±18V input range

IP440A-1E
Same as IP440A-1 plus extended temperature range

IP440A-2
Digital input, ±16 to ±40V input range

IP440A-2E
Same as IP440A-2 plus extended temperature range

IP440A-3
Digital input, ±38 to ±60V input range

IP440A-3E
Same as IP440A-3 plus extended temperature range

Acromag offers a wide selection of Industry Pack Carrier Cards.

Software *(see software documentation for details)*

IPSW-API-VXW
VxWorks® software support package

IPSW-API-QNX
QNX® software support package

IPSW-API-WIN
Windows® DLL driver software support package

IPSW-LINUX
Linux™ support (website download only)

See accessories documentation for additional information.

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