Industry Pack Modules

Acromag
THE LEADER IN INDUSTRIAL I/O

IP445
Isolated Digital Output

IP445 modules provide 32 isolated solid-state relay outputs to safely control discrete devices.

A major IP445 advantage is its flexibility. The module supports wide range bipolar (AC or DC) voltage switching. Each port can be configured for high or low-side switches. The outputs are TTL-compatible when configured as low-side switches using on-board socketed pull-up resistors.

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

Readback buffers simplify output status monitoring. And for easy closed-loop monitoring of critical control signals, use the IP445 with an IP440 input module.

Features

- 32 bipolar solid state relays

- High/low-side switch configuration

- Port-isolated output channels

- ±60V AC/DC voltage range

- High speed processing (0 wait states)

- TTL-compatible

- Failsafe power-up and system reset

- Output readback function

- Socketed pull-up resistors for low-side switching applications

- Current-limited solid-state relays

Benefits

- Unique ground reference points for each port permits AC and DC switching on one module.

- Pin are compatible with IP440 input module for loopback monitoring.
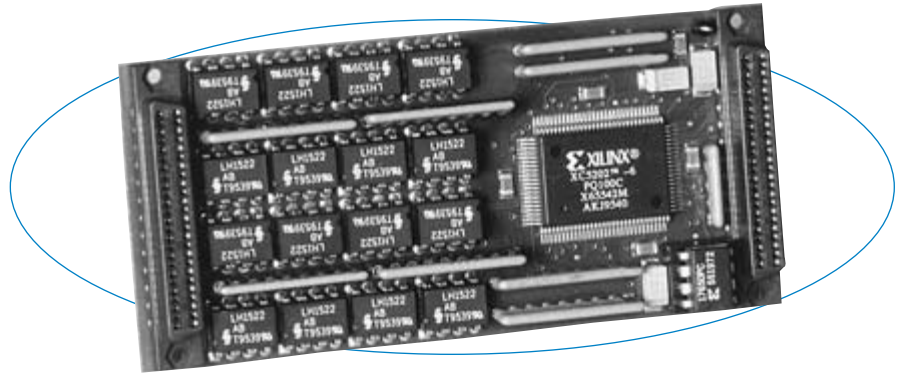
When used together, the IP440 input module and IP445 output module simplify loop-back monitoring of your critical signals.

Specifications

Digital Outputs
Output channel configuration: 32 isolated solid-state relays support AC or DC (high/low-side switching) operation.

Isolation: Logic and field connections are optically isolated by solid-state relays. Individual ports are also isolated from each other. Output lines of an individual port share a common connection and are not isolated from each other. IP Logic and field lines are isolated from each other for voltages up to 250V AC or 354V DC on a continuous basis (unit will withstand a 1000V AC dielectric strength test for one minute without breakdown).

Voltage range: 0 to ±60V DC or peak AC.

Output ON current range: 140mA maximum continuous (up to 1A total per port).

Turn on time: 1mS typical, 2mS maximum.

Turn off time: 1mS typical, 2mS maximum.

Output pull-up resistors: 4.7K ohms, socketed.

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*).

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

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

Environmental
Operating temperature: 0 to 70°C (IP445) or -40 to 85°C (IP445E model).

Storage temperature: -40 to 125°C (all models).

Relative humidity: 5 to 95% non-condensing.

MTBF: 713,455 hrs at 25°C, MIL-HDBK-217F, Notice 2.

Power:
+5V (±5%) all outputs on: 400mA maximum.
±12V (±5%): 0mA (not used).

Ordering Information

Industry Pack Modules
IP445
Digital output module.

IP445E
Same as IP445 plus extended temperature range.

For Industry Pack Carrier Cards, see Page 5.

Software *(see Page 81)*
IPSW-API-VXW
VxWorks® software support package

IPSW-API-QNX
QNX® software support package

IPSW-ATX-PCI
ActiveX®/OLE Controls 2.0 software package

IPSW-LINUX
Linux™ support (website download only)

For accessories information, see Page 87.

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