IP408
High Voltage
Digital Input/Output

The IP408 monitors or controls the on/off (high/low) status of up to 32 devices. Each channel can be used as an input or output.

Input channels can be configured with interrupts for a change of state or level detection of any bit on up to 8 channels. The TTL input threshold includes hysteresis for increasing noise immunity.

In order to ensure safe, reliable control under all conditions, output operation is “fail-safe.” That is, the outputs are always off upon power-up and are automatically cleared following a software reset.

Loopback monitoring of critical control signals is easy since the input and output circuitry are connected in tandem to each channel.

Features
- 32 digital input and/or output channels
- 0 to 60V DC input range,
  60V DC low-side switch outputs
- Outputs sink up to 1A per channel
- TTL-compatible input threshold with hysteresis
- Change-of-state/level interrupts (up to 8)

Benefits
- Buffered inputs include hysteresis to increase noise immunity.
- Interrupts are software-programmable for a change of state or level detection.
- Loopback monitoring enables self-test and fault diagnostics to detect open output switches or shorts.
- High impedance inputs prevent loading of the input source and minimize current.
- Individual outputs sink up to 1A DC continuous. No deration of output current required at elevated temperatures.

Specifications

Digital Inputs
- Input channel configuration: 32 noninverting buffered inputs with a common connection. Input signal voltage range: 0 to 60V DC, maximum.
- Input signal threshold: TTL compatible. 1.5V DC with 200mV of hysteresis, typ. Limited to TTL levels of 0.8V DC (max. low level) and 2.0V DC (minimum high level).
- Input response time: 250ns minimum to 375ns max.
- Interrupts: Change-of-state and level on channels 0-7.

Digital Outputs
- Channel configuration: 32 open-drain DMOS MOSFETs with common source connection.
- Output ON current range: 0 to 1A DC, continuous per channel (10A total for all channels combined). No deration required at elevated ambients.
- Turn on time: 320ns typical (varies with load).
- Turn off time: 500ns typical (varies with load).

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): 1 wait state (375ns cycle).
- Interrupt handling format: An 8-bit vector is provided during interrupt acknowledge cycles on D0 - D7.
- Updates: Two 16-bit reads/writes to update all channels.

Environmental
- Operating temperature: 0 to 70°C (IP408)
  or -40 to 85°C (IP408E).
- Storage: -55 to 125°C (all models).
- Relative Humidity: 5 to 95% non-condensing.
- Power: +5V (±5%): 50mA max. +12V (±5%) from P1: 8.5mA max. -12V (±5%) from P1: 0mA (not used).

Ordering Information

Industry Pack Modules
- IP408: 32 bidirectional input/output channels
- IP408E: Same as IP408 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.