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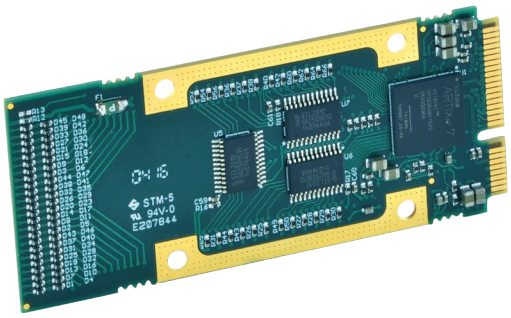
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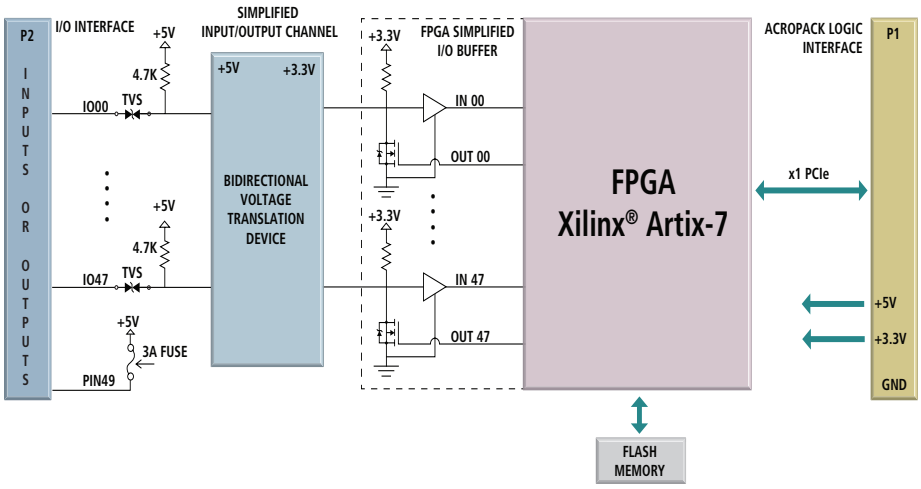
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Find the *Acromag / Xembedded / Xycom AP408* at our website: *Click HERE*

# AcroPack® Modules

## AP400 Series High Voltage Digital Input/Output






48 bidirectional input/output channels ◆ Digital I/O ◆ Wide Temperature Range ◆ PCIe Bus Interface

## Description

Model: AP471E-LF

The AcroPack® product line updates our popular Industry Pack I/O modules with a PCIe interface format. This tech-refresh design offers a compact size, low-cost I/O, the same functionality of the existing IP modules and a rugged form factor. Combine different AcroPack modules on one carrier for a simplified modular approach to system assembly.

AP471 AcroPack I/O (AP) modules provide 48 general-purpose, bidirectional I/O points to economically monitor and control a large quantity of digital devices.

Each channel has interrupt capability for detecting low-to-high or high-to-low transitions. Change-of-state interrupts are supported using paired channels. Debounce eliminates interrupts from noise and switching transients for error-free edge detection.

AP471 outputs are full-featured. They provide closed-loop readback status monitoring. TTL level thresholds and 15mA sink capability allow a direct interface to standard relay racks. For safety, outputs go to a failsafe state upon power-up/reset without any instantaneous toggling to prevent false alarms.

Designed for COTS applications these TTL level digital I/O modules deliver high-density, high-reliability, and high-performance at a low cost.

AcroPack modules are RoHS compliant and ideal for military, defense, automation, aerospace, scientific, and development labs industries.

The AP471 module is 70mm long, this is 19.05mm longer than the full length mini PCIe card at 50.95mm. The board's width is the same as mPCIe board of 30mm and they use the same mPCIe standard board hold down standoff and screw keep out areas.

A down facing 100 pin Samtec connector will mate with the carrier card. Fifty of these signals are available as field I/O signals.

The AP471 maintains the same functionality of the existing Industry Pack modules providing a smooth transition to the AcroPack I/O modules.

## Key Features & Benefits

- PCI Express Generation 1 interface
- 48 bidirectional input/output channels
- Mix and match countless I/O combinations in a single slot.
- Sample software and diagnostics
- TTL-compatible inputs
- CMOS-compatible open-drain outputs
- Interrupt support for each channel
- Input debounce
- Electronic overvoltage protection on individual channels
- Open drain outputs
- Output readback registers - Output readback capability eliminates the need for additional input channels to verify the output channel state
- Output channels do not "glitch" after a power-up/reset to eliminate false alarms
- Solid-down connector I/O interface
- Wide temperature range
- XMC, VPX and PCIe carriers
- Linux®, Windows®, and VxWorks® support

Acromag® THE LEADER IN INDUSTRIAL I/O

Tel: 844-878-2352 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

# AcroPack® Modules

ISO9001
AS9100
MADE IN USA

## Performance Specifications

### Digital Inputs

Input channel configuration
48 buffered inputs.

Input voltage range
0 to 5V DC.

Input signal threshold
1.5V typical.

### Digital Outputs

Output channel configuration
48 open-drain CMOS outputs.

Voltage range
0 to 5V DC.

Output ON current range
0 to 15mA DC.

Output pull-ups
4.7k Ω internal pull-ups installed on board.

### PCI Express Base Specification

Conforms to revision 2.1
Lanes
1 lane in each direction.

Bus Speed
2.5 Gbps (Generation 1).

Memory
4k space required.
1 base address register.

### Environmental

Operating temperature
-40 to 70°C.
-40 to 85°C.
*(requires an AcroPack heatsink conduction-cool kit)*

Storage temperature
-55 to 150°C.

Relative humidity
5 to 95% non-condensing.

Power
+3.3V (±5%): 400mA typical 600mA max.
+5V (±5%): 60mA all outputs ON w/4.7K Ω pull-ups
0.5mA all outputs OFF.

### Physical

Length
70mm.

Width
30mm.

## Ordering Information

### AcroPack® Modules

AP471E-LF
48-channel digital I/O module

*(Note: Acropack modules are compatible only with the carriers listed below)*

### Accessories

AP-CC-01
Conduction-cool kit

### Carrier Cards

See Acromag.com/AcroPack-Carriers for a full list of AcroPack carrier cards.

### Software *(see software documentation for details)*

APSW-API-VXW
VxWorks® software support package.

APSW-API-WIN
Windows® DLL driver software support package.

APSW-API-LNX
Linux® support (website download only).



*AP-CC-01 Conduction-Cool Kit*

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