



**104-IDI-48**  
PC/104 Isolated Digital Inputs

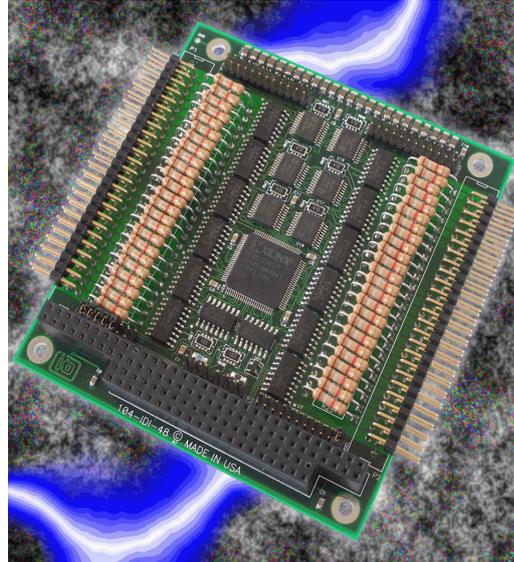
**FEATURES**

**Inputs:**

- 48 Inputs optically isolated channel to channel and channel to ground
- Polarity-Insensitive AC/DC inputs accept up to 60 VDC or AC rms
- Switchable Slow/Fast Filter

**FACTORY OPTIONS**

- Change-of-state detection (COS IRQ) on selected inputs
- Higher input ranges
- 0 to 70°C and -40 to +85°C versions
- Vertical I/O connectors
- Conformal coating for harsh environments
- Latching I/O connectors



**FUNCTIONAL DESCRIPTION**

The 104-IDI-48 family boards are 48-channel PC/104 utility boards which feature 48 individually optically isolated digital inputs. They are ideal for use in control and instrumentation applications where high voltage protection is required. Individual channel-to-channel isolation allows every channel to be physically and electrically separated from the others.

Enabled inputs feature a change-of-state detection capability (denoted by a "C" at the end of the model number) which provides a means to automatically interrupt the host computer in real time. When one or more input bits change state, an interrupt is generated to automatically wake up your application. This can greatly simplify your application program and eliminate the need to continuously poll inputs. Each input is rectified by photo-coupler diodes, and is therefore polarity-insensitive - positive, negative, and AC voltage inputs are all acceptable. Zero crossings and glitches are eliminated by input filters. The input range is up to 60 VDC or AC rms at frequencies of 40 Hz to 10 kHz.

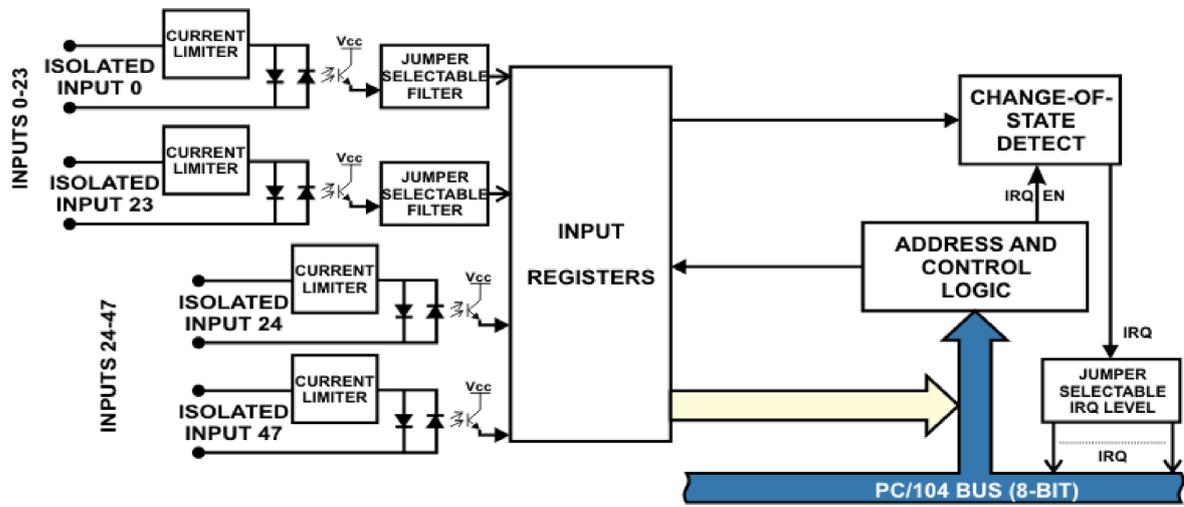
Model	No. of Bits	Max Input Voltage	Change-of-State Interrupt Capability	AC Filter
104-IDI-48A	48	31V	No	Yes
104-IDI-48AC	48	31V	Yes	Yes
104-IDI-48B	48	60V	No	Yes
104-IDI-48BC	48	60V	Yes	Yes

**ACCESSORIES**

Available accessories include flat ribbon cables and DIN-rail mountable screw terminal boards.

**SOFTWARE**

This board is supported for use in most operating systems and includes a free Linux and Windows 2000/XP/2003 compatible software package. This package contains sample programs and source code in Visual Basic, Delphi and Visual C++ for Windows. Also incorporated is a graphical setup program in Windows. Third party support includes a Windows standard DLL interface usable from the most popular application programs and includes example LabView VIs. Embedded OS support includes Windows XPe.



**BLOCK DIAGRAM**

**SPECIFICATIONS**

**ISOLATED DIGITAL INPUTS**

Channels: 48  
 Type: Non-polarized, optically isolated from each other and from the computer. (CMOS compatible)

Voltage Range:  
 \* 48A:  
 Logic Low: 0 to 1.5 VDC or AC rms (40 to 10,000 Hz)  
 Logic High: 3 to 31 VDC or AC rms (40 to 10,000 Hz)  
 \* 48B:  
 Logic Low: 0 to 5 VDC or AC rms (40 to 10,000 Hz)  
 Logic High: 11 to 60 VDC or AC rms (40 to 10,000 Hz)

Isolation: 500V\* (see manual) channel-to-ground or channel-to channel

Input Resistance:  
 \* 48A: 1.8k Ohms in series with opto coupler  
 \* 48B: 15k Ohms in series with opto coupler

Non-Filter Response Times:  
 \* Rise Time: 10 uS  
 \* Fall Time: 30 uS

Filtered Response Times:  
 \* 4.7 mS (Rise / Fall)

Interrupts: Software controlled with jumper IRQ selection ("C" models only)

Connector: 50-pin right angle headers with 0.1mm spacing

Power Required  
 \* +5VDC @ 300mA typical

Environmental

- \* Operating Temp: 0° to +70°C, (-40 to +85°C Optional)
- \* Storage Temp: -55 to +150°C
- \* Humidity: 5% to 95% RH, without condensation
- \* Board Dimension: PC/104 format, 3.550" by 3.775"

**ORDERING INFORMATION**

- Part Number  
 104-IDI-48AC  
 104-IDI-48A  
 104-IDI-48BC  
 104-IDI-48B

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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