

104-IDI-48 48-Channel Optically Isolated Digital Input Boards

FEATURES

- 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



FUNCTIONAL DESCRIPTION

The 104-IDI-48 family of 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



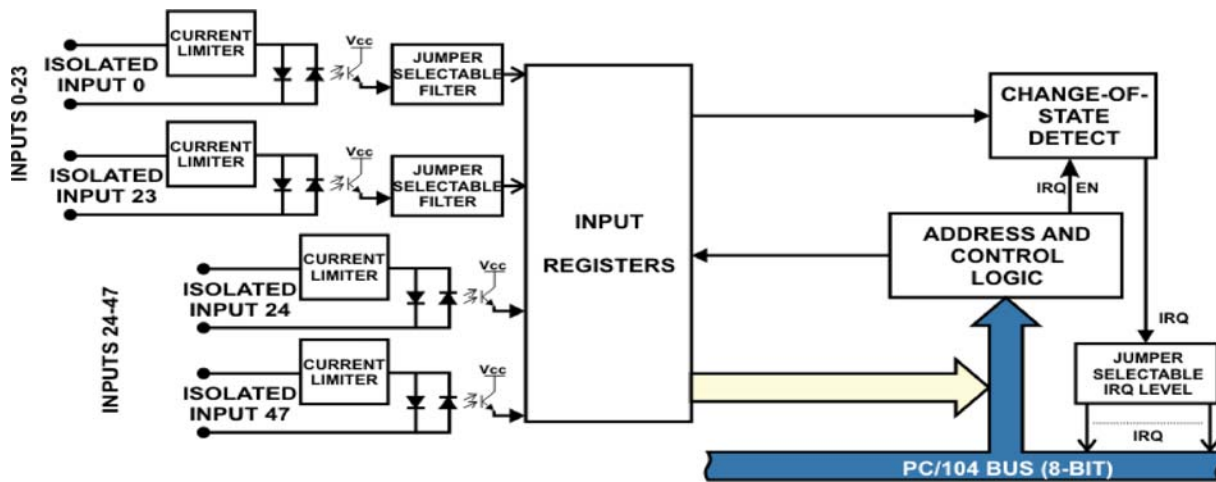
ACCESSORIES

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

Table with 2 columns: Part Number (104-IDI-48A, 104-IDI-48AC, 104-IDI-48B, 104-IDI-48BC) and Description (48 Isolated AC/DC input up to 31V RMS, Above board with change of state detection, 48 Isolated AC/DC input up to 60V RMS, Above board with change of state detection)