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Find the *Acces USB-IDIO-8-T* at our website: ***Click HERE***

USB-IDIO-16

32-Channel Optically Isolated Digital I/O Module

FEATURES

- High-speed USB 2.0 device, USB 1.1 compatible
- Small, portable 32-channel digital I/O module
- 16 optically isolated inputs
- 16 fully protected and isolated FET 2A outputs
- Internal removable screw terminal board
- Custom high-speed function driver
- PC/104 module size and mounting compatibility
- Small (4" x 4"x 1.4") rugged industrial enclosure

FACTORY OPTIONS

- Eight input/output version
- Input only and solid state output only versions
- External power for high current capabilities
- DIN rail mounting provision
- Economy "E" version also available without the screw terminal board
- OEM (board only) version with PC/104 mounting holes and PCB footprint for added flexibility in embedded applications



FUNCTIONAL DESCRIPTION

The USB-IDIO-16 is an ideal solution for adding portable, easy-to-install isolated input and solid state output capabilities to any computer with a USB port. The USB-IDIO-16 is a USB 2.0 high-speed device, offering the highest speed available with the USB bus. It is fully compatible with both USB 1.1 and USB 2.0 ports. The unit is plug-and-play allowing quick connect or disconnect whenever you need additional I/O on your USB port.

Featuring 16 high side power MOSFET switch outputs and 16 optically isolated digital inputs, the unit is the smallest of its kind for digital monitoring and control using USB. The isolated, non-polarized inputs may be driven by either DC sources of 3-31 V (or higher by special order) or AC sources at frequencies of 40Hz to 10kHz. Optically isolating the digital inputs from each other, and from the computer, assures smooth, error-free data transmission in noisy, real-world environments. The input channels are accessed via a 34-pin IDC type vertical header. The fully protected isolated outputs are de-energized at power-up to prevent an unintended control output signal. Data to the solid state outputs are latched and are available via a 50-pin IDC type vertical header.

The USB-IDIO-16 contains an internal, removable screw termination board (USB-STB-84) with onboard removable screw terminals to simplify wiring connections. The USB-STB-84 mounts directly into the vertical IDC connectors of the USB-IDIO-16 circuit board, inside the included enclosure. The USB-IDIO-16, like our popular PC/104 and PCI versions, is an excellent choice where on-board isolated solid state outputs are required and inputs must be isolated in applications such as test equipment, instrumentation, and process control.

The USB-IDIO-16 is designed to be used in rugged industrial environments but is small enough to fit nicely onto any desk or testing station. The board is PC/104 sized (3.550 by 3.775 inches) and ships inside a steel powder-coated enclosure with an anti-skid bottom.

OEM USB/104 FORM FACTOR

The OEM (board only) version is perfect for a variety of embedded applications. What makes the OEM option unique is that its PCB size and mounting holes match the PC/104 form factor (without the bus connections). This allows our rugged digital board to be added to any PCI-104 or PC/104 stack by connecting it to a simple USB port usually included on-board with embedded CPU form factors such as EBX, EPIC, and PC/104. This is especially important since many newer CPU chipsets do not support ISA and have plenty of USB ports. The USB-IDIO-16 OEM board can also be installed using standoffs inside other enclosures or systems.

ACCESSORIES

The USB-IDIO-16 is available with optional cable assemblies and included screw terminal board.

SOFTWARE

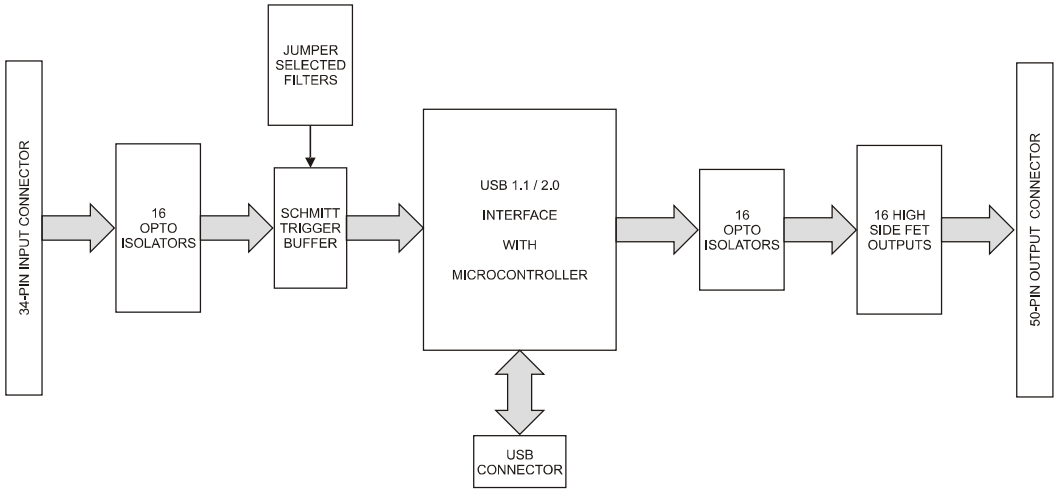
The USB-IDIO-16 is plug-and-play which allows quick connect or disconnect whenever you need additional I/O on your USB port. The module utilizes a high-speed custom function driver optimized for a maximum data throughput that is 50-100 times faster than the USB human interface device (HID) driver used by many competing products. This approach maximizes the full functionality of the hardware along with capitalizing on the advantage of high-speed USB 2.0. The USB-IDIO-16 is supported for use in most USB supported operating systems and includes a free Linux and Windows 98se/Me/2000/XP/2003 compatible software package. This package contains sample programs and source code in Visual Basic, Delphi, C++ Builder, and Visual C++ for Windows. Third party support includes a Windows standard DLL interface usable from the most popular application programs. Embedded OS support include Windows Xpe.

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May 12, 2008

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BLOCK DIAGRAM



SPECIFICATIONS

Isolated Inputs

Number:	Sixteen
Type:	Non-polarized, optically isolated from each other and from the computer (CMOS compatible)
Voltage:	3 to 31 DC or AC RMS (40 Hz-10 kHz)
Isolation:	500V* (see manual) channel-to-ground and channel-to-channel
Resistance:	1.8K ohms in series with opto-coupler
Filter Response:	Rise Time = 4.7 mS / Fall Time = 4.7 mS
Non-Filter Response:	Rise Time = 10 uS / Fall Time = 30 uS

Isolated FET Outputs

Number:	Sixteen Solid State FET's
Output Type:	High Side Power MOSFET Switch. Protected against short circuit, over-temperature, ESD, and can drive inductive loads.
Voltage Range (customer supplied):	5-34VDC recommended for continuous use, 40VDC absolute max.
Current Rating:	2A maximum
Turn-on time:	90 uS (typ)
Turn-off time:	110 uS (typ)

Bus Type

Universal Serial Bus	USB 2.0 high-speed, USB 1.1 full-speed compatible

Environmental

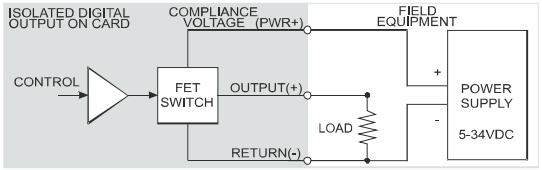
Operating Temperature Range:	0/ to 70/ C
Storage Temperature Range:	-40/ to +85/ C
Humidity:	Maximum 90% RH, without condensation.
Board Dimension:	3.550 x 3.775 inches.
Box Dimension:	4.00 x 4.00 x 1.4 inches.

Power

+5VDC	provided via USB bus up to 500mA**
5V@ 35mA, typical	(all FETs OFF, add 5mA per FET)
5V@ 115mA, typical	(all FETs ON)

** Optional on-board external power circuitry and AC/DC adapter can be ordered ("-P" option) if current use is expected to be greater than what can be supplied by the USB bus. Please check to see how much current your USB port can supply and how much current you anticipate using.

SIMPLIFIED FET CONNECTION DIAGRAM



Ordering Guide

USB-IDIO-16	Enclosure, module and screw terminal board
USB-IDO-16	16 isolated FET solid state outputs only version
USB-IDIO–8	8 isolated digital inputs and 8 isolated FET solid state outputs version

Options

-OEM	Board only version (no enclosure and screw terminal board)
-E	Economy model (no screw terminal board)
-DIN	DIN rail mounting provision
-P	External power and AC/DC adapter

Accessories

USB-STB-84	Internal plug in screw termination board

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