USB-II16-OEM Series
16, 8, or 4 Isolated Digital Inputs

FEATURES
- High-speed USB 2.0 device, USB 3.0 and 1.1 compatible
- Small, portable, digital input module provides up to 16-channels
- 16, 8, or 4 optically isolated inputs
- Jumper selectable filters for AC and noisy DC inputs
- On-board 45 degree angled screw terminals
- Header connector for alternate cabled interface
- Custom high-speed function driver
- USB/104 form-factor for OEM embedded applications
- PC/104 module size and mounting compatibility
- Alternate micro-fit embedded USB header connector
- Type B USB connector features industrial strength and high retention design
- LabVIEW VI driver

FACTORY OPTIONS
- Eight and four-channel versions
- Extended operating temperature
- External power circuitry and AC/DC adapter

FUNCTIONAL DESCRIPTION
The USB-II16-OEM is an ideal solution for adding portable, easy-to-install isolated digital input capabilities to any computer with a USB port. The USB-II16-OEM is a USB 2.0 high-speed device, offering the highest speed available with the USB 2.0 bus. It is fully compatible with both USB 1.1 and USB 3.0 ports. The unit is plug-and-play allowing quick connect or disconnect whenever you need additional Inputs on your USB port.

Featuring 16 optically isolated digital inputs, the unit is the smallest of its kind for digital monitoring 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 40 Hz to 10 kHz. 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 available via on-board angled screw terminals for the lowest cost straight-forward connectivity solution. Alternative connections may be made from a 34-pin IDC type vertical header via ribbon cable to a remote screw terminal panel.

The USB-II16-OEM series is excellent for use in applications where inputs must be isolated such as in test equipment, instrumentation, and process control. The USB-II16-OEM is designed to be used in rugged industrial environments.
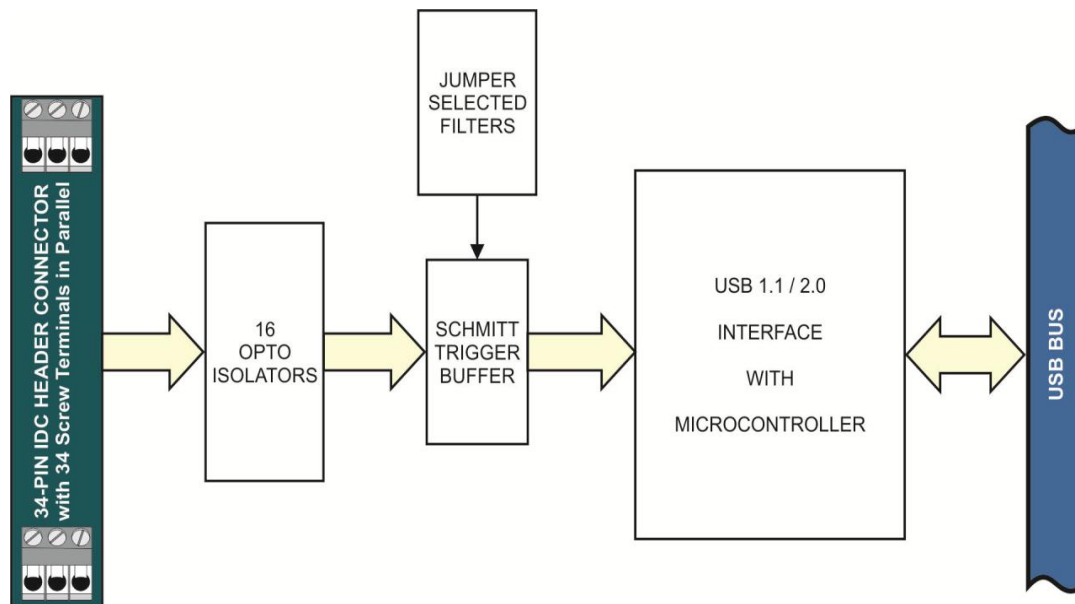
OEM USB/104 FORM FACTOR
The OEM (board only) version is perfect for a variety of embedded applications. What makes the OEM option unique is that its PCB size and pre-drilled mounting holes match the PC/104 (3.550 by 3.775 inches) form factor (without the bus connections). This ensures easy installation using standard standoffs inside most enclosures or systems. The board can be added to any PC/104, PCI-104, or PCI/104-Express stack by connecting it to a USB 2.0 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-II16-OEM board can also be installed using standoffs inside other enclosures or systems. For embedded OEM type applications, an additional miniature USB input header is provided in parallel with the type B connector.

ACCESSORIES
Available accessories include flat ribbon cables and a DIN-rail mounting adaptor. For remote connectivity, a DIN-rail mountable screw terminal board is also available. To make use of the miniature embedded USB header connector, we offer a type A to mini cable.

SOFTWARE
The USB-II16-OEM series are 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 the advantage of high-speed USB 2.0. The USB-II16-OEM is supported for use in most USB supported operating systems and includes a free Linux and Windows XP/2003/7/Vista 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 LabVIEW VIs. Embedded OS support includes Windows Xpe.

BLOCK DIAGRAM

SPECIFICATIONS

Isolated Inputs

Number:	16
Type:	Non-polarized, optically isolated from each other and from the computer (CMOS compatible)
Voltage:	3-31 DC or AC RMS (40-10kHz)
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
Without Filter:	Rise Time = 10 uS Fall Time = 30 uS

Bus Type   USB 2.0 high-speed, USB 3.0 and 1.1 compatible

Power   +5V@ 30mA typical

Environmental

Operating Temp:	0° to 70°C (-40° to +85°C available)
Storage Temp:	-40° to +85°C
Humidity:	5 to 95% RH, without condensation
Dimensions:	3.550 x 3.775 inches

ORDERING GUIDE

USB-II16-OEM	16-channel isolated digital input module with on-board screw terminals
USB-II8-OEM	8-channel isolated digital input module with on-board screw terminals
USB-II4-OEM	4-channel isolated digital input module with on-board screw terminals

Accessories

MP104-DIN	DIN-rail mounting plate
C34F-12	12" female to female ribbon cable assembly
STB-34	Screw Terminal Accessory
DIN-SNAP6	DIN rail snap track for mounting STB-34
CUSB-EMB-6	6' USB Cable with Type A to mini connector

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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