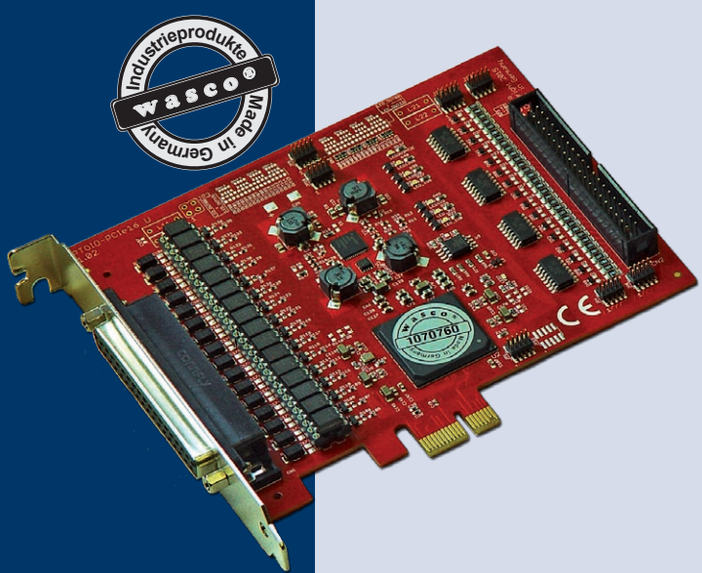
wasco®

# OPTOIO-PCIe16STANDARD

## Digital PCIe I/O Interface Card with 16 Optocoupler Inputs, 16 Optocoupler Outputs and Board Identification




**16 optocoupler isolated digital inputs**

**16 optocoupler isolated digital outputs**

**board identification**

The wasco® interface card OPTOIO-PCIe16STANDARD provides 16 digital input channels and 16 digital output channels, each of which is galvanically isolated. Inputs and outputs are electrically isolated by high-quality optocouplers. Special powerful output optocouplers manage a maximum switching current of up to 150 mA. Additionally each input and output is equipped with protection diodes against harmful voltage peaks and impulses. You can adjust two different voltage ranges by setting jumper blocks.
Output optocouplers are led to a 37 pin D-Sub jack mounted to the board's slot bracket. Optocoupler inputs are fed to a 40-pin box header. A special available cable (set of female connector, ribbon cable and 37pin female sub-D-connector with slot bracket) can relocate the connection to a slot of your PC casing. Pin assignment is identical with ISA bus card OPTOIO-16STANDARD and PCI bus card OPTOIO-PCI16STANDARD. Therefore a switch to PCIe is easily to realise .
Furthermore the card provides a jumper block for card identification. This enables you to differentiate between several identical cards in your system.

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## SPECIFICATIONS

### Optocoupler Inputs
Optocoupler: LTV-244 or compatible
16 channels, optically isolated
Galvanic isolation also between every single channel with each two separate connections for each of the channels
Overvoltage protection by protection diodes
Two different input voltage ranges jumper selectable:

| | |
|---|---|
| Range 1 | high = 14..30 Volt |
| | low = 0..2 Volt |
| Range 2: | high = 5..15 Volt |
| | low = 0..1 Volt |

Input frequency: max. 10 kHz

### Optocoupler Outputs
Optocoupler: 16 * PC853 or compatible socket mounted
16 channels, optically isolated
Galvanic isolation also between every single channel with each two separate connections for each of the channels
Overvoltage protection by protection diodes
Output current max. 150mA
Output frequency ca 1 KHz
Voltage collector-emitter: max. 50V
Voltage emitter-collector: max. 0,1V

### Board Identification
Jumper block with five pairs of contact pins

### Connection plug
1 * 37-pin D-Sub connector female
1 * 40-pin box header

### Bus system
32-Bit PCIe Bus (8 Bit data access)

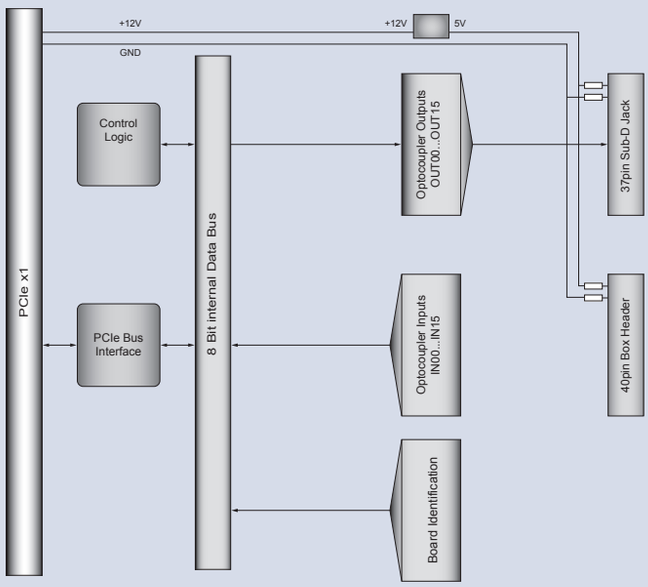
### Dimensions of the Board
129 mm x 111 mm (l x b)
standard hight, half length card
6-layer PCB

### Other
Control LEDs indicating power supply

## APPLICATIONS

On/off events
Identification of contact states
Binary data aquisition
Process control
Data aquisition of BCD coded instruments
Control of external power relays

## Block Diagram




## Pin Assignment

Anode and cathode of each input optocoupler is led to a 37-pin Sub-D jack CN1 for each channel inidvidually. Collector and emittor are fed to a 40-pin box header CN2 for each output channel individually. CN1 is mounted to the board's bracket, CN2 is accessible inside the computer only. To obtain optimal connections to periphery with strain relief optionally a flat ribbon cable is available (see „Suitable Accessories") .

**D-Sub Jack CN1**

| | | | |
|---|---|---|---|
| GND | 37 | 19 | Vcc |
| GND | 36 | 18 | Vcc |
| OUT15- | 35 | 17 | NC |
| OUT14- | 34 | 16 | OUT15+ |
| OUT13- | 33 | 15 | OUT14+ |
| OUT12- | 32 | 14 | OUT13+ |
| OUT11- | 31 | 13 | OUT12+ |
| OUT10- | 30 | 12 | OUT11+ |
| OUT09- | 29 | 11 | OUT10+ |
| OUT08- | 28 | 10 | OUT09+ |
| OUT07- | 27 | 9 | OUT08+ |
| OUT06- | 26 | 8 | OUT07+ |
| OUT05- | 25 | 7 | OUT06+ |
| OUT04- | 24 | 6 | OUT05+ |
| OUT03- | 23 | 5 | OUT04+ |
| OUT02- | 22 | 4 | OUT03+ |
| OUT01- | 21 | 3 | OUT02+ |
| OUT00- | 20 | 2 | OUT01+ |
| | | 1 | OUT00+ |

**Box Header CN2**

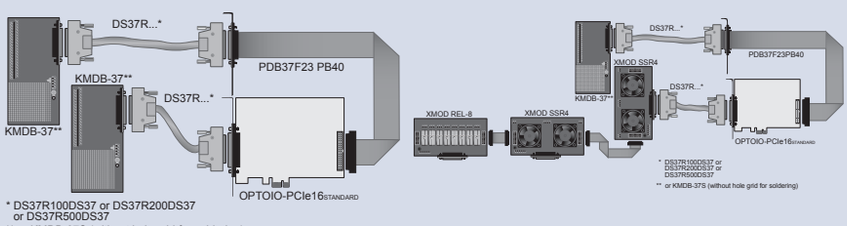
| | | | |
|---|---|---|---|
| NC | 40 | 39 | NC |
| NC | 38 | 37 | Vcc |
| GND | 36 | 35 | Vcc |
| GND | 34 | 33 | NC |
| IN15- | 32 | 31 | IN15+ |
| IN14- | 30 | 29 | IN14+ |
| IN13- | 28 | 27 | IN13+ |
| IN12- | 26 | 25 | IN12+ |
| IN11- | 24 | 23 | IN11+ |
| IN10- | 22 | 21 | IN10+ |
| IN09- | 20 | 19 | IN09+ |
| IN08- | 18 | 17 | IN08+ |
| IN07- | 16 | 15 | IN07+ |
| IN06- | 14 | 13 | IN06+ |
| IN05- | 12 | 11 | IN05+ |
| IN04- | 10 | 9 | IN04+ |
| IN03- | 8 | 7 | IN03+ |
| IN02- | 6 | 5 | IN02+ |
| IN01- | 4 | 3 | IN01+ |
| IN00- | 2 | 1 | IN00+ |

**CN2 as D-Sub Jack (optionally)**

| | | | |
|---|---|---|---|
| GND | 37 | 19 | Vcc |
| GND | 36 | 18 | Vcc |
| IN15- | 35 | 17 | NC |
| IN14- | 34 | 16 | IN15+ |
| IN13- | 33 | 15 | IN14+ |
| IN12- | 32 | 14 | IN13+ |
| IN11- | 31 | 13 | IN12+ |
| IN10- | 30 | 12 | IN11+ |
| IN09- | 29 | 11 | IN10+ |
| IN08- | 28 | 10 | IN09+ |
| IN07- | 27 | 9 | IN08+ |
| IN06- | 26 | 8 | IN07+ |
| IN05- | 25 | 7 | IN06+ |
| IN04- | 24 | 6 | IN05+ |
| IN03- | 23 | 5 | IN04+ |
| IN02- | 22 | 4 | IN03+ |
| IN01- | 21 | 3 | IN02+ |
| IN00- | 20 | 2 | IN01+ |
| | | 1 | IN00+ |

PDB37F23PB40

## Connection Technique (Application Examples)




* DS37R100DS37 or DS37R200DS37 or DS37R500DS37
** or KMDB-37S (without hole grid for soldering)

* DS37R100DS37 or DS37R200DS37 or DS37R500DS37
** or KMDB-37S (without hole grid for soldering)

## Programming

**Windows®:**
Driver and program examples for VB.NET, C++.NET, C#.NET
**Linux®:**
Driver and program examples for C and C++ (see manual)
*on enclosed CD or download at:*
*www.messcomp.com, Section Support - Software*

## Scope of Delivery

Interface Card OPTOIO-PCIe16STANDARD
Manual German (English on request)
Driver and program examples on CD

## Order Information

**OPTOIO-PCIe16STANDARD**
**EDP No A-829200**
I/O Card

## Suitable Accessories

**PDB37F23PB40** **EDP No A-497500**
**Flat ribbon cable** (approx. 23 cm) to relocate signals from CN2 (40-pin box header) to a 37pin Sub-D jack with slot bracket (please order 1 pc per plug)

**DS37R500DS37** **EDP No A-202800**
**Shielded connection cable** (approx. 5 m) to connect KMDB-37 to a 37pin Sub-D jack

**DS37R200DS37** **EDP No A-202400**
**Shielded connection cable** (approx. 2 m) to connect KMDB-37 to a 37pin Sub-D jack

**DS37R100DS37** **EDP No A-202200**
**Shielded connection cable** (approx. 1 m) to connect KMDB-37 to a 37pin Sub-D jack

**KMDB-37S** **EDP No A-204910**
**Terminal module** with a 38-pin screw terminal block to connect to a 37pin Sub-D jack

**XMOD REL-8** **EDP No A-3268**
**Relay module** with eight isolated outputs for switching currents up to 5 A (Connection to the optocoupler outputs, cascading of the modules is possible)

**XMOD REL-4** **EDP No A-3264**
**Relay module** with four isolated outputs for switching currents up to 5 A (Connection to the optocoupler outputs, cascading of the modules is possible)

**XMOD SSR-4** **EDP No A-3284**
**Solid State Relay module** with four isolated outputs for switching currents up to 5 A (Connection to the optocoupler outputs, cascading of the modules is possible)

**XMOD SSR-2** **EDP No A-3282**
**Solid State Relay module** with two isolated outputs for switching currents up to 5 A (Connection to the optocoupler outputs, cascading of the modules is possible)

For more detailed information about the here listed and other accessories we refer to the corresponding data sheets

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