

# USB-7230/7250

## Isolated USB Digital I/O Modules

### Features

- Card index switch selection
- USB 2.0, USB bus powered
- Programmable digital filter removes unexpected glitches from input channels
- Programmable DO/Relay initial status
- 32-CH isolated digital I/O (USB-7230)
- 8-CH relay output, 8-CH isolated DI (USB-7250)
- 2-CH frequency/event counters (USB-7230/7250)
- Up to 2500 VRMS isolation voltage
- Ready-to-use testing application (U-Test) provided



### Introduction

The USB-7230/7250 USB-based digital I/O modules feature high voltage on/off control and monitoring, and isolation voltage supported up to 2500VRMS. The USB-7230 provides 32-CH isolated digital I/O and 2-CH frequency/event counters. The USB-7250 provides 8-CH relay output (4 form C and 4 form A), 8-CH isolated DI, and 2-CH frequency/event counters.

The USB-powered USB-7230/7250 features removable screw-down terminals for easy device connectivity, and the included multi-functional stand fully supports desktop, rail, or wall mounting.

The USB-7230/7250 is suitable for industrial I/O control applications requiring high voltage and superior protection. High isolation voltage protects against damage from accidental contact with external voltages and eliminates troublesome ground loops. U-Test, a free ready-to-use testing program, is included to enable operation or testing of all ADLINK USB DAQ series functions with no programming requirement.

### Software Support

- Windows 7/8 x64/x86
- LabVIEW, MATLAB, C/C++, Visual Basic, Visual Studio.NET
- U-Test

### Ordering Information

- **USB-7230**  
2-CH isolated Digital I/O & 2-CH counter USB module
- **USB-7250**  
8-CH relay output, 8-CH isolated DI, & 2-CH counter USB module

### Optional Accessories

- **RST-20P**  
One pair of 20-pin removable screw terminals
- **USB-2M-L**  
2 M USB Type A to USB Mini-B cable with lockable connector

## Specifications

| Model Name   | USB-7230  | USB-7250  |      |
|--|---|---|------|
| <b>Relay output</b>                                  |   |   |      |
| Channels   | -   | 8 (non-latching, 4-CH form C & 4-CH form A)   |      |
| Max. switching power                                 | -   | 60 W, 125 VA  |      |
| Max. switching voltage                               | -   | 220 V <sub>DC</sub> , 250 V <sub>AC</sub>   |      |
| Max. switching current                               | -   | 2A  |      |
| Max. carrying current                                | -   | 2A  |      |
| Max. contact rating                                  | -   | 30 VDC, 2 A (Resistive)<br>110 VDC, 0.3 A (Resistive)<br>125 VAC, 0.5 A (Resistive) |      |
| Relay on/off time                                    | -   | Operating time  | 2 ms |
|  |   | Release time  | 1 ms |
| Resistance   | -   | 75mΩ  |      |
| Expected life  | -   | 50 V <sub>DC</sub> 0.1A (resistive), 1x10 <sup>6</sup>                              |      |
| Breakdown voltage                                    | -   | 1500 V surge  |      |
| <b>Optical Isolated Input</b>                        |   |   |      |
| Channels   | 16  | 8   |      |
| Polarity   | Bi-directional (non-polarity)   |   |      |
| Logic level  | VIH=5 to 24V, VIL=0 to 0.1.5V or dry contact                          |   |      |
| Input resistance                                     | 2.4k @ 0.5W   |   |      |
| Isolated voltage                                     | 2500V <sub>RMS</sub> (channel to system)                              |   |      |
| Min. pulse-width for change of state (COS) detection | 20.83ns (software programmable)                                       |   |      |
| <b>Optical Isolated Frequency/Event Counter</b>      |   |   |      |
| Channels   | 2   |   |      |
| Logic level  | VIH=5 to 12V, VIL=0 to 0.1.5V   |   |      |
| Event counter width                                  | 32-Bit  |   |      |
| Max. input frequency (DC coupled)                    | 1 MHz   |   |      |
| Min. input frequency (DC coupled)                    | 0.1 Hz  |   |      |
| Max. frequency error                                 | 0.5% (f ≤ 50kHz)<br>1% (50kHz < f ≤ 500kHz)<br>2% (500kHz < f ≤ 1MHz) |   |      |
| <b>Optical Isolated Output</b>                       |   |   |      |
| Channels   | 16  | -   |      |
| Output type  | Open drain MOSFET   | -   |      |
| Supply voltage                                       | 5-35V <sub>DC</sub>   | -   |      |
| Max. sink current                                    | 250 mA @ 100% duty (per channel)                                      | -   |      |
| <b>General Specifications</b>                        |   |   |      |
| Interface  | High speed USB 2.0 compatible, mini-USB connector                     |   |      |
| Data transfer  | Programmed I/O  |   |      |
| Dimensions   | 156.5 (L) x 114 (W) x 41.3 (H) mm (6.16" x 4.49" x 1.63")             |   |      |
| I/O Connector  | Two 20-pin removable screw-down terminals                             |   |      |
| Power requirement                                    | USB power (5 V @ 400 mA)  |   |      |

## Pin Assignment

### USB-7230

|      |    |    |      |
|------|----|----|------|
| VDD  | 20 | 40 | DO15 |
| DO7  | 19 | 39 | DO14 |
| DO6  | 18 | 38 | DO13 |
| DO5  | 17 | 37 | DO12 |
| DO4  | 16 | 36 | DO11 |
| DO3  | 15 | 35 | DO10 |
| DO2  | 14 | 34 | DO9  |
| DO1  | 13 | 33 | DO8  |
| DO0  | 12 | 32 | IGND |
| IGND | 11 | 31 | IGND |
| CNT0 | 10 | 30 | CNT1 |
| CGND | 9  | 29 | COM  |
| D17  | 8  | 28 | D115 |
| D16  | 7  | 27 | D114 |
| D15  | 6  | 26 | D113 |
| D14  | 5  | 25 | D112 |
| D13  | 4  | 24 | D111 |
| D12  | 3  | 23 | D110 |
| D11  | 2  | 22 | D19  |
| D10  | 1  | 21 | D18  |

### USB-7250

|      |    |    |      |
|------|----|----|------|
| NO7  | 20 | 40 | GND1 |
| COM7 | 19 | 39 | CNT1 |
| NO6  | 18 | 38 | GND0 |
| COM6 | 17 | 37 | CNT0 |
| NO5  | 16 | 36 | DI7L |
| COM5 | 15 | 35 | DI7H |
| NO4  | 14 | 34 | DI6L |
| COM4 | 13 | 33 | DI6H |
| NC3  | 12 | 32 | DI5L |
| NO3  | 11 | 31 | DI5H |
| COM3 | 10 | 30 | DI4L |
| NC2  | 9  | 29 | DI4H |
| NO2  | 8  | 28 | DI3L |
| COM2 | 7  | 27 | DI3H |
| NC1  | 6  | 26 | DI2L |
| NO1  | 5  | 25 | DI2H |
| COM1 | 4  | 24 | DI1L |
| NC0  | 3  | 23 | DI1H |
| NO0  | 2  | 22 | DI0L |
| COM0 | 1  | 21 | DI0H |

## Standard Shipped Accessories

One pair of 20-pin removable screw terminals



2 M USB Type A to USB Mini-B cable with lockable connector



Module stand



Rail-mount kit

