

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 | |
|--|---|---|------|
| Relay output | | | |
| Channels | - | 8 (non-latching, 4-CH form C & 4-CH form A) | |
| Max. switching power | - | 60 W, 125 VA | |
| Max. switching voltage | - | 220 V _{DC} , 250 V _{AC} | |
| Max. switching current | - | 2A | |
| Max. carrying current | - | 2A | |
| Max. contact rating | - | 30 VDC, 2 A (Resistive) 110 VDC, 0.3 A (Resistive) 125 VAC, 0.5 A (Resistive) | |
| Relay on/off time | - | Operating time | 2 ms |
| | | Release time | 1 ms |
| Resistance | - | 75mΩ | |
| Expected life | - | 50 V _{DC} 0.1A (resistive), 1x10 ⁶ | |
| Breakdown voltage | - | 1500 V surge | |
| Optical Isolated Input | | | |
| 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 _{RMS} (channel to system) | | |
| Min. pulse-width for change of state (COS) detection | 20.83ns (software programmable) | | |
| Optical Isolated Frequency/Event Counter | | | |
| 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) 1% (50kHz < f ≤ 500kHz) 2% (500kHz < f ≤ 1MHz) | | |
| Optical Isolated Output | | | |
| Channels | 16 | - | |
| Output type | Open drain MOSFET | - | |
| Supply voltage | 5-35V _{DC} | - | |
| Max. sink current | 250 mA @ 100% duty (per channel) | - | |
| General Specifications | | | |
| 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) | | |



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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 |
| DI7 | 8 | 28 | DI15 |
| DI6 | 7 | 27 | DI14 |
| DI5 | 6 | 26 | DI13 |
| DI4 | 5 | 25 | DI12 |
| DI3 | 4 | 24 | DI11 |
| DI2 | 3 | 23 | DI10 |
| DI1 | 2 | 22 | DI9 |
| DI0 | 1 | 21 | DI8 |

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

