



USB-2026

USB I/O Module with 5-ch AI, 2-ch AO,
2-ch DI and 2-ch DO

Features

- 16-ch digital input
- Dry Contact and Wet Contact Selectable via Wire Connections
- All Channels can be used as 32-bit Counters
- PWR/RUN/ERR LED indicators
- 3000 VDC Intra-Module isolation
- Lockable USB cable
- USB 1.1/2.0 Full-Speed (12 Mbps)
- No external power supply (USB Bus Powered)
- Plug-and-Play without driver
- Support firmware update via USB
- Utility tool for module configuration and I/O testing easily and quickly
- Built-in dual watchdog (hardware/software)
- Provide API library (VC/VB/BCB/.NET)
- Module supported for Win2000/XP and Win 7,8,10 (32/64 bit)
- Wide operating temperature range:-25°C~+75°C



Introduction

The USB-2026 is a multifunction module that includes 5 analog input channels, 2 analog output channels, 2 digital input channels, 2 digital output channels and compatibles with USB 2.0 full-speed. It equips small size, portable, USB bus powered, various input type features to help user build up own project easily and quickly.

Compare with traditional PC I/O card, it is waste of time to open chassis and configure I/O board. In ICP DAS USB I/O, you will enjoy the simply controlling I/O in the efficient way. ICP DAS USB I/O equips USB bus powered feature, one cable to access I/O and provide power without additional power wiring. ICP DAS USB I/O is a small size module. You can use these I/O modules in wide range application, ex: fan-less control or measurement, automatically testing with BOX-PC...etc. ICP DAS USB I/O provides 10ks/s data acquisition functionality. User can apply this to real-time demanded application, ex: noise measurement.

The USB-2026 provides a programmable input range on all analog input (± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, ± 20 mA or $0 \sim +20$ mA), analog outputs are 12-bit at ± 5 V, ± 10 V, $0 \sim +20$ mA or $+4 \sim +20$ mA and all digital outputs can be set as alarm output. Each analog input can be configured for an individual range and provides a high overvoltage protection of 240 Vrms.

Applications

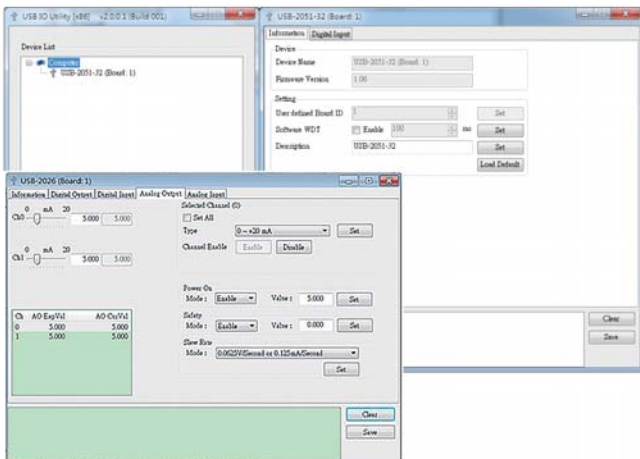
- Automation
- Machine automation
- Laboratory research

Software

USB-2K Utility

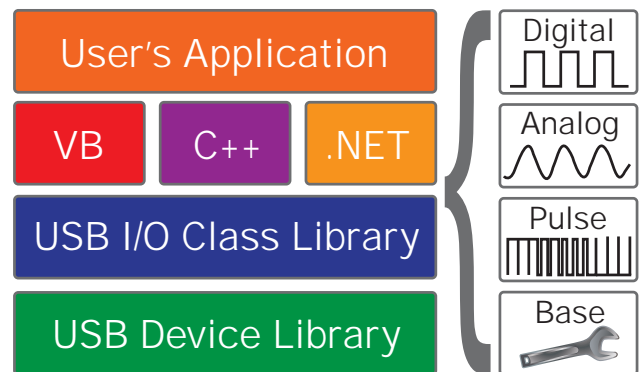
USB-2K Utility provides a simple way to easily test and instant acquire data for all ICP DAS USB IO series modules without programming.

- USB module configuration
- Log Data analysis
- I/O configuration
- Easy to test



VB/C++/C#.NET/VB.NET SDK

ICP DAS provides a SDK for USB I/O modules to help user to develop own project easily and quickly. The SDK can be supported in VB/C++/C#.NET/VB.NET to fulfill project development.



System Specifications

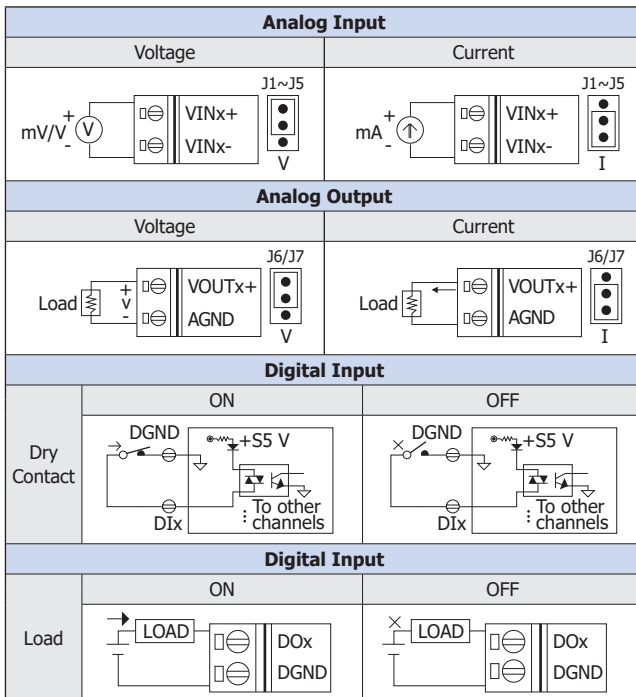
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|-----------------------|--|
| USB | |
| Specification | USB 2.0 Full-Speed (12Mbps) |
| CPU Module | |
| Watchdog Timer | 1 Hardware watchdog (1.6 second) 1 Software watchdog (Programmable) |
| EMS Protection | |
| ESD (IEC 61000-4-2) | 4 kV contact for each terminal 8 kV air for random point |
| LED Indicators | |
| Status | 3 x Power and Communication |
| Power | |
| Consumption | 2.2 W Max. |
| Mechanical | |
| Dimensions (mm) | 33 x 110 x 96 (W x L x H) |
| Environmental | |
| Operating Temperature | -25 ~ +75 °C |
| Storage Temperature | -40 ~ +85 °C |
| Humidity | 10 ~ 95% RH, Non-condensing |

Pin Assignments



| Pin Assignment | Terminal No. | Pin Assignment |
|----------------|--------------|----------------|
| VIN0+ | 01 | VIN0- |
| VIN1+ | 02 | VIN1- |
| VIN2+ | 03 | VIN2- |
| VIN3+ | 04 | VIN3- |
| VIN4+ | 05 | VIN4- |
| VOUT0+ | 06 | AGND |
| VOUT1+ | 07 | AGND |
| DI0 | 08 | DI0 |
| DI1 | 09 | DI1 |
| DGND | 10 | DGND |

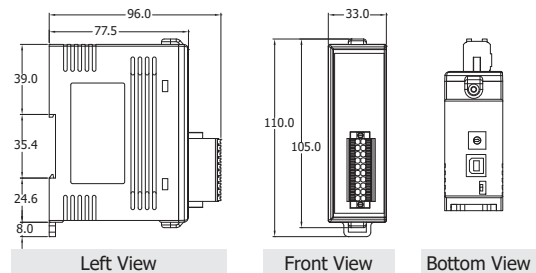
Wire Connections



I/O Specifications

| | | |
|------------------------------|------------------|--|
| Analog Input | | |
| Channels | 5 Differential | |
| Type | Voltage, Current | |
| Range | Voltage | ±1 V, ±2.5 V, ±5 V, ±10 V |
| | Current | ±20 mA, 0 ~ 20 mA, 4 ~ 20 mA |
| Resolution | Normal Mode | 14-bit |
| | Fast Mode | 12-bit |
| Accuracy | Normal Mode | ±0.1% FSR |
| | Fast Mode | ±0.5 % FSR |
| Sampling Rate | Normal Mode | 10 Hz |
| | Fast Mode | 200 Hz |
| Input Impedance | Voltage | 20 MΩ |
| | Current | 135 Ω |
| Overvoltage Protection | Voltage | 120 VDC |
| | Current | N/A |
| Overcurrent Protection | Voltage | N/A |
| | Current | Yes, 50 mA at 110 VDC |
| Zero Drift | | ±20 μV/°C |
| Span Drift | | ±25 ppm/°C |
| Analog Output | | |
| Channels | 2 | |
| Range | Voltage | +0 ~ +5 VDC, +0 ~ +10 VDC, ±5 VDC, ±10 VDC |
| | Current | +0 ~ +20 mA, +4 ~ +20 mA |
| Resolution | | 12-bit |
| Accuracy | | ±0.1% of FSR |
| Open Wire Detection | | Yes, for 4 ~ 20 mA only |
| Voltage Output Capability | | 10 V @ 20 mA |
| Power on Value | | Yes |
| Safe Value | | Yes |
| Digital Input/Counter | | |
| Channels | 2 | |
| Type | | Dry Contact, Source |
| ON Voltage Level | | Close to GND |
| OFF Voltage Level | | Open |
| Max. Counts | | 4,294,967,285 (32-bit) |
| Frequency | | 100 Hz |
| Min. Pulse Width | | 10 ms |
| Input Impedance | | 10 KΩ, 0.5 W |
| Overvoltage Protection | | ±57 VDC |
| Digital Output | | |
| Channels | 2 | |
| Type | | Isolation Open Collector (Sink) |
| Load Voltage | | +3.5 ~ +50 VDC |
| Max. Load Current | | 700 mA/Channel |
| Overvoltage Protection | | ±60 VDC |
| Overload Protection | | 1.4 A (with short-circuit protection) |
| Short-Circuit Protection | | Yes |
| Power on Value | | Yes, Programmable |
| Safe Value | | Yes, Programmable |

Dimensions (Units: mm)



Ordering Information

| | |
|--------------------|---|
| USB-2026 CR | USB I/O Module with 5-ch AI, 2-ch AO, 2-ch DI and 2-ch DO (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/Ferrite Core, 1.5 M) |
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