



USB-2251-32

USB I/O Module
with Isolated 32-ch
DI



USB-2251-64

USB I/O Module
with Isolated 64-ch
DI

Features

- 32-ch digital input and 64-ch digital input
- Digital input selectable dry/wet contacts via wires
- All digital inputs can act as 32-bit counters
- Dual watchdog with power-on and safe values
- 2-port USB 2.0 hub for daisy-chain wiring
- Plug-and-Play without driver
- Lockable USB cable
- Easy-to-use tool for setup and I/O testing
- API library (VB/C++/C#.NET/VB.NET/LabVIEW)
- Support 32/64-bit Win7/8/10/11 and Linux



Introduction

The USB-2251-32 and USB-2251-64 are USB 2.0 I/O devices with 32 or 64 digital inputs. All digital inputs can operate as 32-bit counters and support selectable sink or source configurations via wires. Both models also have LED indicators to display the status of the digital channels.

A dual watchdog function with configurable power-on and safe values ensures reliable operation in harsh environments.

We also provide API library and demos with source code for Windows and Linux users to develop their own USB applications with various development tools (VB/C++/C#.NET/VB.NET/LabVIEW). Therefore, the USB-2251-32/USB-2251-64 is the perfect choose for you to implement I/O expansion via a plug-and-play USB interface.

Applications

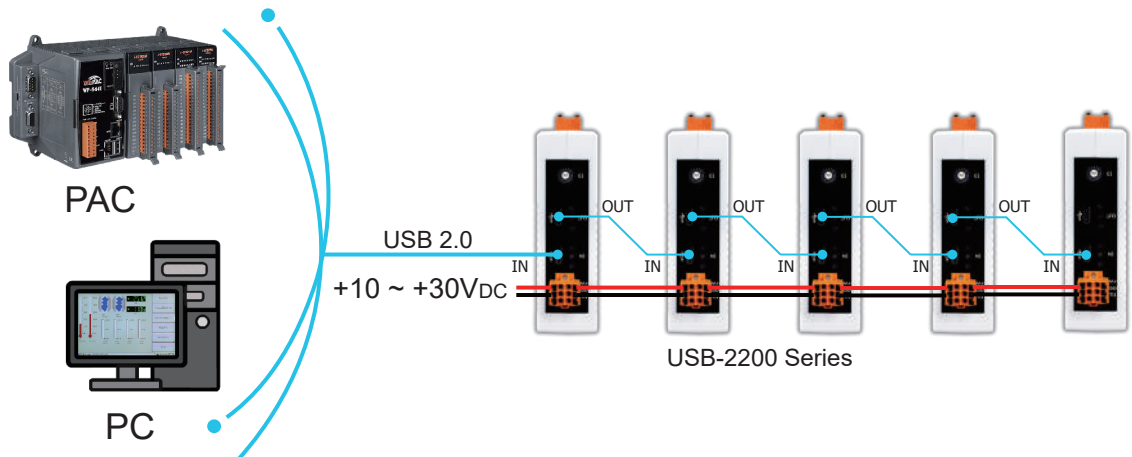
- Building automation
- Factory automation
- Measurement and testing
- Testing equipment
- Machine automation

Daisy-Chain USB Cabling

The USB-2200 module is equipped with a USB hub that supports daisy chain topologies. This feature allows more USB-2200 modules to be integrated into a single system and also frees up PC USB ports.

Note : The USB 2.0 port provides only 500mA, external power is required when multiple modules are connected to the same USB port. Please refer to the following figure shown daisy chain application.

Daisy-Chain USB Cabling



Note : Support daisy-chain, max. 5 nodes.

Redundant Power

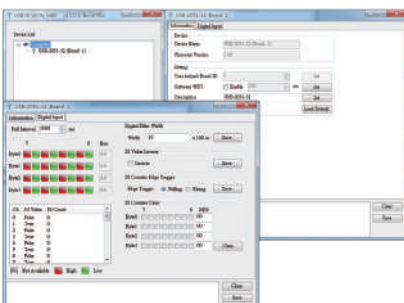
The USB-2200 modules support two power inputs for enhanced redundancy with a voltage range of +10 to +30 VDC. For modules connected to two power input sources, if one source is inactive or interrupted, the other power source is capable of taking over immediately. The USB-2200 modules can operate as normal with only a single power source. (If not using the USB hub function, the module can be powered via a USB 2.0 port.)

Software

USB I/O Utility

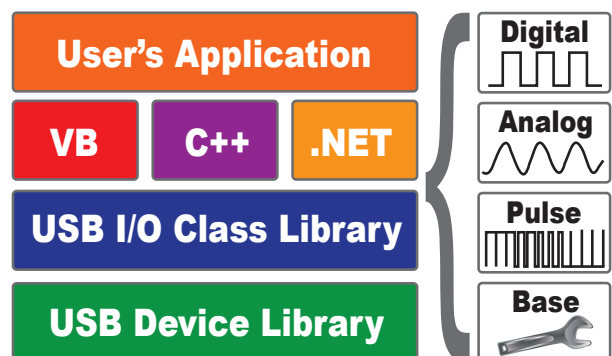
The software supports all ICP DAS USB I/O modules, simplifies I/O control and testing, and allows for immediate data acquisition without programming.

- Automatically scans all I/O modules
- Quickly configures and tests I/O modules
- Completely and accurately logs I/O data for analysis



VB/C++/C#.NET/VB.NET/LabVIEW 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/LabVIEW to fulfill project development.



System Specifications

Model	USB-2251-32	USB-2251-64
USB		
Specification	USB 2.0 HighSpeed (480 Mbps)	
Connector	1 x USB IN (CA-USB-AC2-L018 CR) 1 x USB OUT (CA-USB-CC1-L003 CR) or (CA-USB-CC2-L003 CR)	
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, Run and Error	
	32 x DI	64 x DI
Power		
Reverse Polarity Protection	Yes	
Powered from Terminal Block	+10 ~ +30 VDC	
Consumption	Typical 1.4 W Max. 1.9 W	Typical 2.1 W Max. 3.2 W
Mechanical		
Dimensions (W x L x H)mm	31 x 166 x 129	56 x 180 x 144
Environmental		
Operating Temperature	-25 ~ +75 ° C	
Storage Temperature	-40 ~ +85 ° C	
Humidity	10 ~ 95% RH, Non-condensing	

I/O Specifications

Model		USB-2251-32	USB-2251-64
Digital Input/Counter			
Channels		32	65
Type		Dry Contact, Source Wet Contact, Sink/Source	
Wet Contact	ON Voltage Level	+10 VDC ~ +50 VDC	
	OFF Voltage Level	+4 VDC Max.	
Dry Contact	ON Voltage Level	Close to GND	
	OFF Voltage Level	Open	
	Effective Distance	500 meters Max.	
Max. Counts		32-bit	
Frequency		5k Hz	
Digital Filter Width		1 ~ 65000 * 100 μs (1 ~ 6500 ms) Default= 0, Disable= 0	
Input Impedance		10 KΩ	
Overvoltage Protection		70 VDC	
Intra-Module Isolation		3000 VDC	

Wire Connections

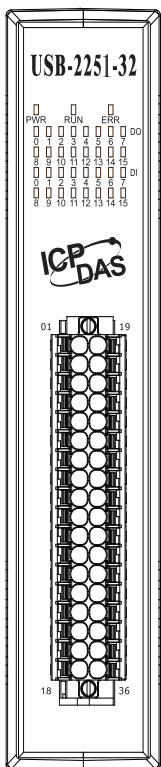
Digital Input /Counter	Readback as 1	Readback as 0
Dry Contact		
Wet Contact (Sink)		
Wet Contact (Source)		

USB Type-C plug with Locking Screw



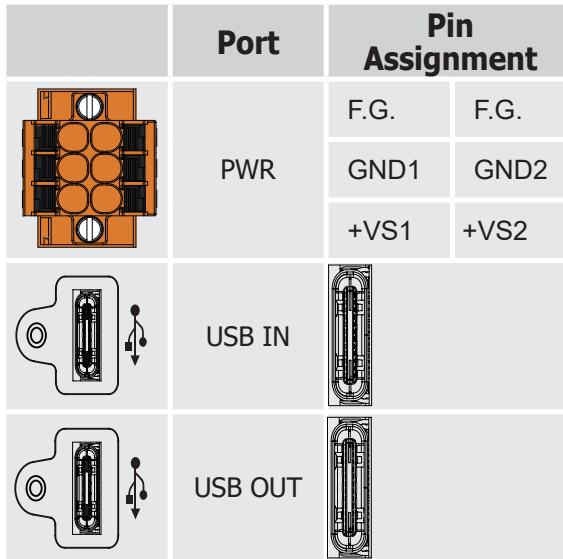
Pin Assignments

USB-2251-32



Pin Assignment	Terminal No.	Pin Assignment
DI.GND	01	19 DI.GND
DI0	02	20 DI16
DI1	03	21 DI17
DI2	04	22 DI18
DI3	05	23 DI19
DI4	06	24 DI20
DI5	07	25 DI21
DI6	08	26 DI22
DI7	09	27 DI23
DI8	10	28 DI23
DI9	11	29 DI25
DI10	12	30 DI26
DI11	13	31 DI27
DI12	14	32 DI28
DI13	15	33 DI29
DI14	16	34 DI30
DI15	17	35 DI31
DI.COM	18	36 DI.COM

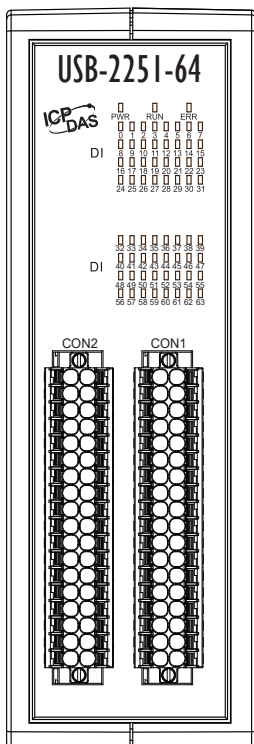
USB-2251-32 & USB-2251-64



USB-2251-64

CON2

Pin Assignment	Terminal No.	Pin Assignment
DI.GND2	01	19 DI.GND2
DI32	02	20 DI48
DI33	03	21 DI49
DI34	04	22 DI50
DI35	05	23 DI51
DI36	06	24 DI52
DI37	07	25 DI53
DI38	08	26 DI54
DI39	09	27 DI55
DI40	10	28 DI56
DI41	11	29 DI57
DI42	12	30 DI58
DI43	13	31 DI59
DI44	14	32 DI60
DI45	15	33 DI61
DI46	16	34 DI62
DI47	17	35 DI63
DI.COM2	18	36 DI.COM2

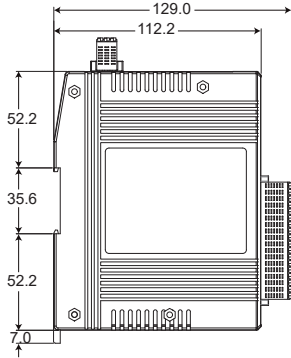


CON1

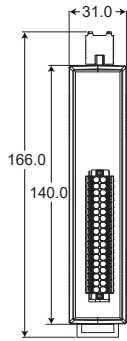
Pin Assignment	Terminal No.	Pin Assignment
DI.GND1	01	19 DI.GND1
DI0	02	20 DI16
DI1	03	21 DI17
DI2	04	22 DI18
DI3	05	23 DI19
DI4	06	24 DI20
DI5	07	25 DI21
DI6	08	26 DI22
DI7	09	27 DI23
DI8	10	28 DI24
DI9	11	29 DI25
DI10	12	30 DI26
DI11	13	31 DI27
DI12	14	32 DI28
DI13	15	33 DI29
DI14	16	34 DI30
DI15	17	35 DI31
DI.COM1	18	36 DI.COM1

■ Dimensions (Units: mm)

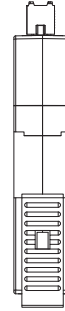
USB-2251-32



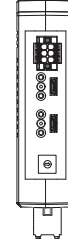
Left Side View



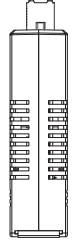
Front View



Rear View

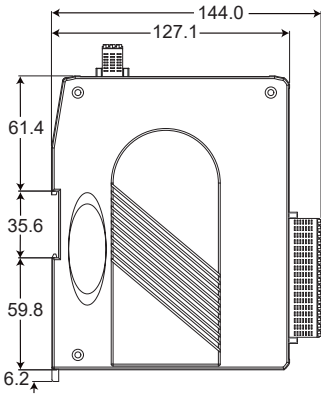


Top View

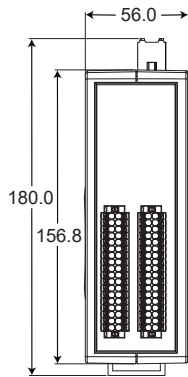


Bottom View

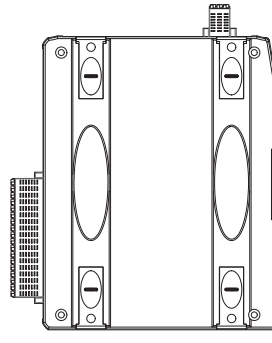
USB-2251-64



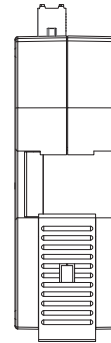
Left Side View



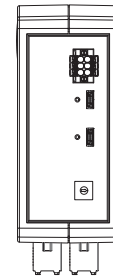
Front View



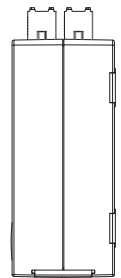
Right Side View



Rear View





Top View






Bottom View

■ Ordering Information

USB-2251-32 CR	USB I/O Module with Isolated 32-ch DI (Dry, Wet) (RoHS) Includes 1.8M USB Cable (CA-USB-AC2-L018)	
USB-2251-64 CR	USB I/O Module with Isolated 64-ch DI (Dry, Wet) (RoHS) Includes 1.8M USB Cable (CA-USB-AC2-L018)	

■ Accessories

CA-USB-CC1-L003 CR Type C to Type C, with screw lock, 30 cm (RoHS)		CA-USB-CC1-L018 CR Type C to Type C, with screw lock, 1.8 M, (RoHS)	
CA-USB-CC2-L003 CR Type C to Type C, with screw lock and ferrite cores, 30cm (RoHS)		CA-USB-AC1-L018 CR USB 2.0, A to Type C with screw lock, 1.8 M, (RoHS)	