



USB-2255-32

USB I/O Module
with Isolated 16-ch
DI and 16-ch DO



USB-2255-64

USB I/O Module
with Isolated 32-ch
DI and 32-ch DO

Features

- 16/32-ch digital input and 16/32-ch digital output
- 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-2255-32 and USB-2255-64 are USB 2.0 I/O devices with 16 or 32 digital inputs and 16 or 32 digital outputs. 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-2255-32/USB-2255-64 is the perfect choose for you to implement I/O expansion via a plug-and-play USB interface.

Applications

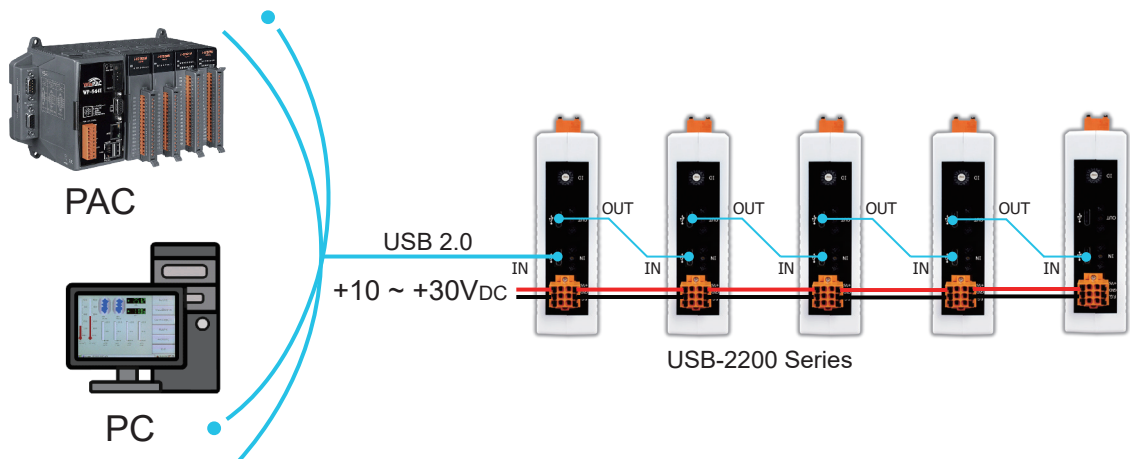
- Building automation
- Factory automation
- Measurement and testing
- Testing equipment
- Machine automation

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

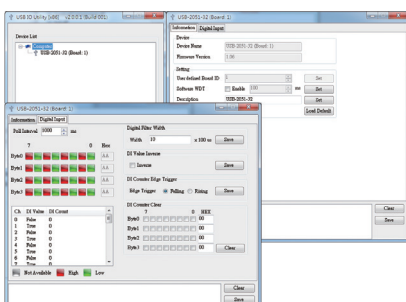
The modules support dual power inputs (+10 to +30 VDC) for enhanced redundancy. If one source becomes inactive or is interrupted, the other immediately takes over to ensure uninterrupted operation in critical environments. The modules can operate as normal with only a single power source. (If not using the USB hub function, the module can be powered via a USB 2.0 port.)

Software

USB I/O Utility

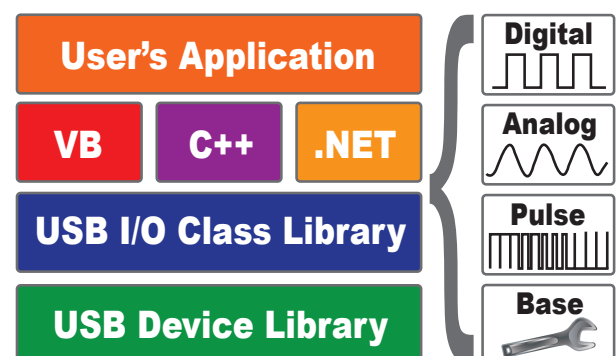
The software supports all ICP DAS USB I/O modules, simplifies I/O control and testing, and allows for immediate data acquisition without programming.

- 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-2255-32	USB-2255-64
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 and DO	64 x DI and DO
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	

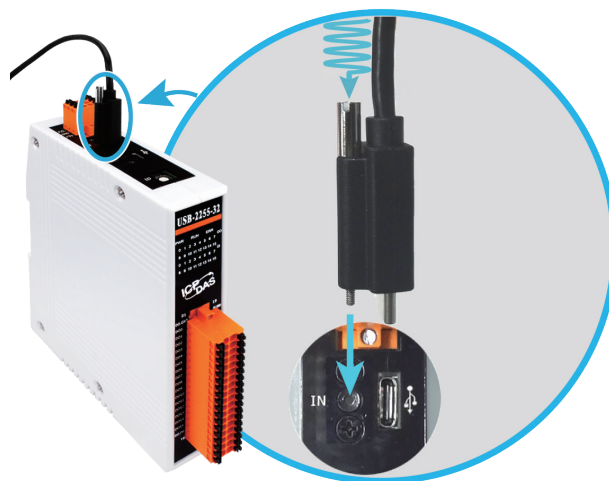
I/O Specifications

Model		USB-2255-32	USB-2255-64
Digital Input/Counter			
Channels		16	32
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	
Digital Output			
Channels		16	32
Type		Open Collector, Sink (NPN)	
Load Voltage		+3.5 ~ +50 VDC	
Max. Load Current		600 mA/Channel	500 mA/Channel
Overvoltage Protection		60 VDC	
Overload Protection		1.4 A (with short-circuit protection)	
Safe Value		Yes, Programmable	
Power on Value		Yes, Programmable	
Intra-Module Isolation		3000 VDC	

Wire Connections

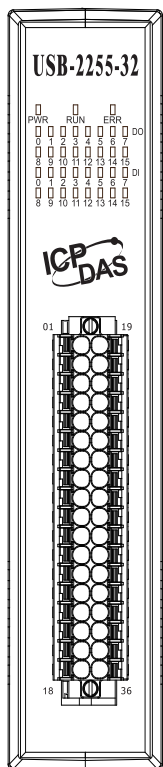
Digital Input /Counter	Readback as 1	Readback as 0
Dry Contact		
Wet Contact (Sink)		
Wet Contact (Source)		
Output Type	ON State Readback as 1	OFF State Readback as 0
Inductive Load		
Resistance Load		

USB Type-C plug with Locking Screw



Pin Assignments

USB-2255-32



Pin Assignment	Terminal No.	Pin Assignment
DO.GND	01	DI.GND
DO0	02	DI0
DO1	03	DI1
DO2	04	DI2
DO3	05	DI3
DO4	06	DI4
DO5	07	DI5
DO6	08	DI6
DO7	09	DI7
DO8	10	DI8
DO9	11	DI9
DO10	12	DI10
DO11	13	DI11
DO12	14	DI12
DO13	15	DI13
DO14	16	DI14
DO15	17	DI15
DO.PWR	18	DI.COM

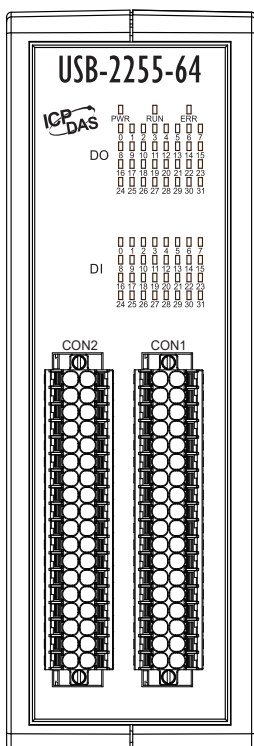
USB-2255-32 & USB-2255-64

Port	Pin Assignment
PWR	F.G. F.G. GND1 GND2 +VS1 +VS2
USB IN	
USB OUT	

USB-2255-64

CON2

Pin Assignment	Terminal No.	Pin Assignment
DO.GND2	01	DI.GND2
DO16	02	DI16
DO17	03	DI17
DO18	04	DI18
DO19	05	DI19
DO20	06	DI20
DO21	07	DI21
DO22	08	DI22
DO23	09	DI23
DO24	10	DI24
DO25	11	DI25
DO26	12	DI26
DO27	13	DI27
DO28	14	DI28
DO29	15	DI29
DO30	16	DI30
DO31	17	DI31
DO.PWR2	18	DI.COM2

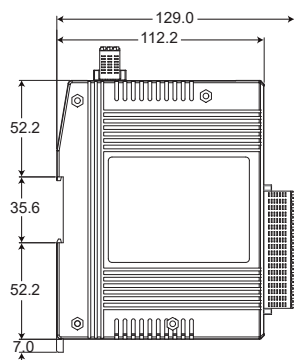


CON1

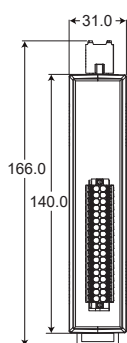
Pin Assignment	Terminal No.	Pin Assignment
DO.GND1	01	DI.GND1
DO0	02	DI0
DO1	03	DI1
DO2	04	DI2
DO3	05	DI3
DO4	06	DI4
DO5	07	DI5
DO6	08	DI6
DO7	09	DI7
DO8	10	DI8
DO9	11	DI9
DO10	12	DI10
DO11	13	DI11
DO12	14	DI12
DO13	15	DI13
DO14	16	DI14
DO15	17	DI15
DO.PWR1	18	DI.COM1

■ Dimensions (Units: mm)

USB-2255-32



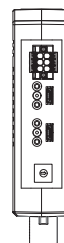
Left Side View



Front View



Rear View

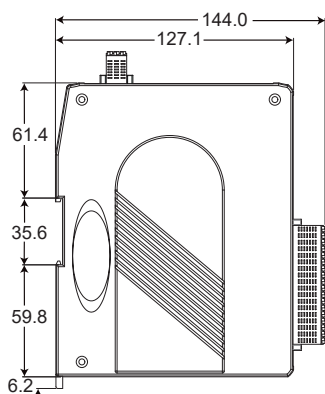


Top View

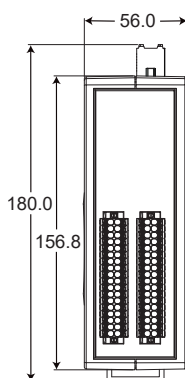


Bottom View

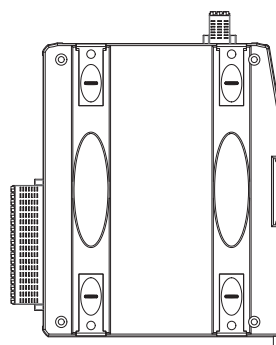
USB-2255-64



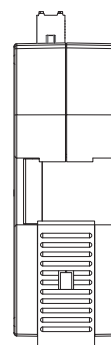
Left Side View



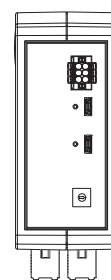
Front View



Right Side View



Rear View



Top View



Bottom View

■ Ordering Information

USB-2255-32 CR	USB I/O Module with Isolated 16-ch DI (Dry, Wet) and 16-ch DO (Sink, NPN) (RoHS) Includes 1.8M USB Cable (CA-USB-AC2-L018)	
USB-2255-64 CR	USB I/O Module with Isolated 32-ch DI (Dry, Wet) and 32-ch DO (Sink, NPN) (RoHS) Includes 1.8M USB Cable (CA-USB-AC2-L018)	

■ Accessories

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