



## USB-2055

USB I/O Module with Isolated 8-ch DI and 8-ch DO



## USB-2055-32

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

### Features

- 8/16-ch digital input and digital output
- Dry Contact and Wet Contact Selectable via Wire Connections
- All Channels can be used as 16-bit Counters
- Short Circuit, Overload and Overvoltage Protection
- Safety functionality when communication failed
- 2500/3000 VDC Intra-Module isolation
- USB 2.0 Full-Speed (12Mbps)
- No external power supply (USB Bus Powered)
- Plug-and-Play without driver
- Lockable USB cable
- 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 Win7 (32/64 bit)



### Introduction

The USB-2055 and USB-2055-32 are full-speed USB device with 8 or 16 digital input and digital output channels module, and offers features for industrial control and manufacturing test applications, such as factory automation or embedded machine control. The USB-2055/USB-2055-32 offers 8/16 isolated channels for digital input and 8/16 isolated channels for digital output. Either sink-type or source-type digital input can be selected via wire connections. All digital input channels are also able to be used as 16/32-bit counters. The USB-2055/USB-2055-32 supports source-type output with short circuit protection. There are options to enable both power-on and safety values. The USB-2055/USB-2055-32 has 16/32 LED indicators that can be used to monitor the status of the digital input and digital output channels. 4 kV ESD protection and 3750 VDC intra-module isolation are standard. With the true Plug & Play capability, it needs not opening up your computer chassis to install boards-just plug in the module, then get or set the data. Owing to another USB feature known as "hot-swapping", users do not even need to shut down and restart the system to attach or remove the USB-2055/USB-2055-32.

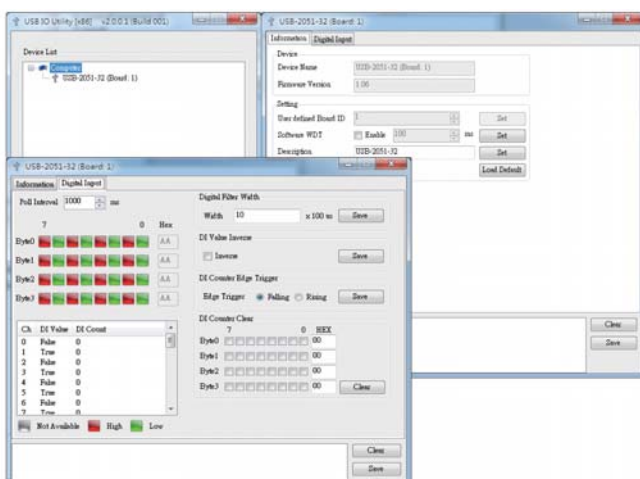
The USB I/O utility can help users to configure and test USB-2055/USB-2055-32 quickly and easily without programming; In addition, we also provide the friendly API library and demos for users to develop own USB application with various application development tools (VB/C++/C#.NET/VB.NET). Therefore, the USB-2055/USB-2055-32 is the perfect way to add control capability to any USB capable computer.

### Software

#### USB I/O Utility

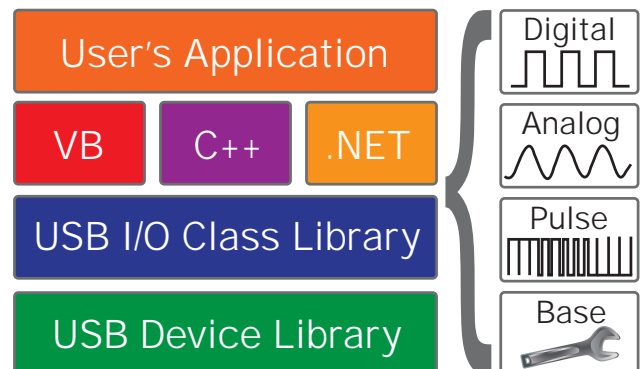
USB I/O Utility provides a simple way to easily test and instant acquire data for all ICP DAS USB I/O series modules without programming.

- Automatically scan all ICP DAS USB I/O modules
- Easily and quickly configure and test USB I/O modules
- Completely and precisely log I/O data for analysis



#### 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.



### Applications

- Building automation
- Factory automation
- Machine automation
- Testing equipment
- Automation
- Measurement and testing
- Laboratory research

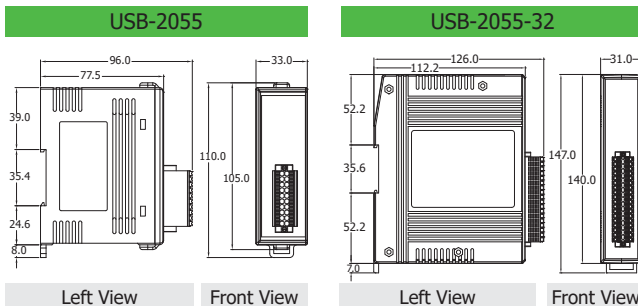
## System Specifications

Model	USB-2055	USB-2055-32
<b>USB</b>		
Specification	USB 2.0 Full-Speed (12Mbps)	
<b>CPU Module</b>		
Watchdog Timer	1 Hardware watchdog (1.6 second) 1 Software watchdog (Programmable)	
<b>EMS Protection</b>		
ESD (IEC 61000-4-2)	4 kV contact for each terminal 8 kV air for random point	
<b>LED Indicators</b>		
Status	3 x Power and Communication 16 x DI and DO	
	32 x DI and DO	
<b>Power</b>		
Consumption	1.4 W	2.2 W
<b>Mechanical</b>		
Dimensions (mm) (W x L x H)	33 x 110 x 96	31 x 147 x 126
<b>Environmental</b>		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95% RH, Non-condensing	

## I/O Specifications

Model	USB-2055	USB-2055-32
<b>Digital Input/Counter</b>		
Channels	8	16
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	65535 (16-bit)	4294967295 (32-bit)
Frequency	500 Hz	
Min. Pulse Width	1 ms	
Input Impedance	10 KΩ	
Overvoltage Protection	70 VDC	
<b>Digital Output</b>		
Channels	8	16
Type	Open Collector, Sink (NPN)	
Load Voltage	+3.5 ~ +50 VDC	
Max. Load Current	650 mA/Channel	600 mA/Channel
Overvoltage Protection	60 VDC	
Overload Protection	1.4 A (with short-circuit protection)	
Power on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

## Dimensions (Units: mm)



## Ordering Information

<b>USB-2055 CR</b>	USB I/O Module with Isolated 8-ch DI (Dry, Wet) and 8-ch DO (Sink, NPN) (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/ Ferrite Core, 1.5 M)
<b>USB-2055-32 CR</b>	USB I/O Module with Isolated 16-ch DI (Dry, Wet) and 16-ch DO (Sink, NPN) (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/ Ferrite Core, 1.5 M)

## Pin Assignments

USB-2055			
Pin Assignment	Terminal No.		Pin Assignment
DI.GND	01		11 DO.GND
DI0	02		12 DO0
DI1	03		13 DO1
DI2	04		14 DO2
DI3	05		15 DO3
DI4	06		16 DO4
DI5	07		17 DO5
DI6	08		18 DO6
DI7	09		19 DO7
DI.COM	10		20 DO.PWR

USB-2055-32			
Pin Assignment	Terminal No.		Pin Assignment
DO.GND	01		19 DI.GND
DO0	02		20 DI0
DO1	03		21 DI1
DO2	04		22 DI2
DO3	05		23 DI3
DO4	06		24 DI4
DO5	07		25 DI5
DO6	08		26 DI6
DO7	09		27 DI7
DO8	10		28 DI8
DO9	11		29 DI9
DO10	12		30 DI10
DO11	13		31 DI11
DO12	14		32 DI12
DO13	15		33 DI13
DO14	16		34 DI14
DO15	17		35 DI15
DO.PWR	18		36 DI.COM

## Wire Connections

Input	ON	OFF
Dry Contact		
Wet Contact (Sink)		
Wet Contact (Source)		
Output	ON	OFF
Drive Relay		
Resistance Load		