





USB I/O Module with Isolated 16-ch DI



USB-2051-32

USB I/O Module with Isolated 32-ch DI

■ Features

- 16/32-ch digital input
- Dry Contact and Wet Contact Selectable via Wire Connections
- All Channels can be used as 16/32-bit Counters
- PWR/RUN/ERR LED indicators
- 2500/3000 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-2051 and USB-2051-32 are full-speed USB device with 16 or 32 digital input channels module, and offers features for industrial control and manufacturing test applications, such as factory automation or embedded machine control. The USB-2051/USB-2051-32 offers 16/32 channels for digital input, catering for both dry and wet contact, with an effective distance for dry contact of up to 500 meters. All channels not only feature photocouple isolation, but can also be used as 16/32-bit counters. The USB-2051/USB-201-32 has 16/32 LED indicators that can be used to monitor the status of the digital input 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-2051/USB-2051-32.

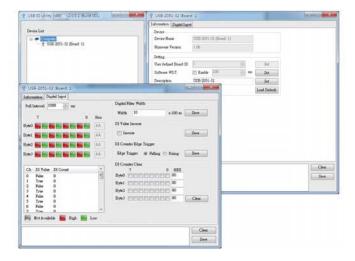
The USB I/O utility can help users to configure and test USB-2051/USB-2051-32 quickly and easily without programming; In addition, we also provide the friendly API library and demos for users to develop own USB application with various application development tools (VB/ C++/C#.NET/VB.NET). Therefore, the USB-2051/USB-2051-32 is the perfect way to add control capability to any USB capable computer.

Software

USB I/O Utility

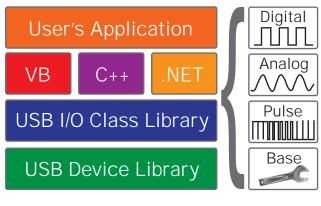
USB I/O Utility provides a simple way to easily test and instant acquire data for all ICP DAS USB I/O series modules without programming.

- 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

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■ System Specifications

Model	USB-2051	USB-2051-32			
USB					
Specification	USB 2.0 Full-Speed (12Mbps)				
CPU Module	CPU Module				
Watchdog Timer	1 Hardware watchdog (1.6 second)				
Waterlady Timer	1 Software watchdog (Programmable)				
EMS Protection					
ESD (IEC 61000-4-2)	4 kV contact for each terminal				
LSD (IEC 01000 4 2)	8 kV air for random point				
LED Indicators	LED Indicators				
Status	3 x Power and Communication				
Status	16 x Digital Input	32 x Digital Input			
Power					
Consumption	1.2 W 1.6 W				
Mechanical	Mechanical				
Dimensions (mm)	33 x 110 x 96	31 x 147 x 126			
(W x L x H)	33 X 110 X 90				
Environmental					
Operating Temperature	-25 ~ +75 °C				
Storage Temperature	-40 ∼ +85 °C				
Humidity	10 ~ 95% RH, Non-condensing				

■ I/O Specifications

Model		USB-2051	USB-2051-32	
Digital Input/Counter				
Channels		16	32	
Туре		Dry Contact, Source		
		Wet Contact, Sink/Source		
Wet Contact	ON Voltage Level	+10 VDC ~ +50 VDC		
wet Contact	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 ΚΩ		
Overvoltage Protection		70 VDC		

■ Wire Connections

Input	ON	OFF			
Dry Contact	DI.GND +S5 V To other channels	DI.GND +S5 V To other channels			
Wet Contact (Sink)	DIX 10K To other DI.COM To other channels	DIX 10K To other DI.COM To other channels			
Wet Contact (Source)	- + To other channels	DIX 10K - + To other channels			

■ Ordering Information

	<u> </u>		
	USB I/O Module with Isolated 16-ch DI (Dry, Wet) (RoHS)		
USB-2051 CR	Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/		
	Ferrite Core, 1.5 M)		
	USB I/O Module with Isolated 32-ch DI (Dry, Wet) (RoHS)		
USB-2051-32 CR	Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/		
	Ferrite Core, 1.5 M)		

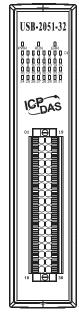
■ Pin Assignments

USB-2051



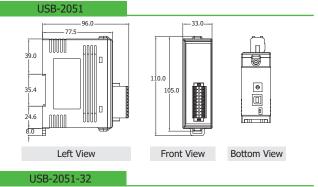
Pin Assignment	Terminal No.			Pin Assignment
DI.GND	01		11	DI.GND
DI0	02		12	DI8
DI1	03		13	DI9
DI2	04		14	DI10
DI3	05		15	DI11
DI4	06		16	DI12
DI5	07		17	DI13
DI6	08		18	DI14
DI7	09		19	DI15
DI.COM	10		20	DI.COM

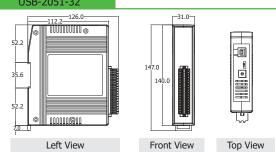
USB-2051-32



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	80		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.COM	18		36	DI.COM

■ Dimensions (Units: mm)





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