ICP DAS

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

USB-2051
USB I/O Module with Isolated 16-ch DI

USB-2051-32
USB I/O Module with Isolated 32-ch DI

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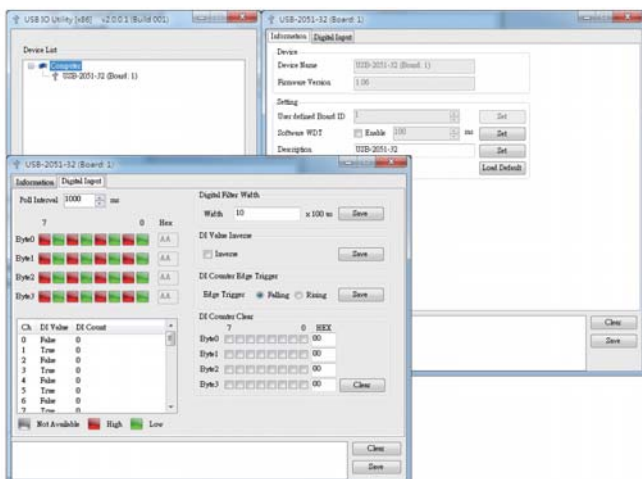
VB/C++/C#.NET/VB.NET SDK

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.
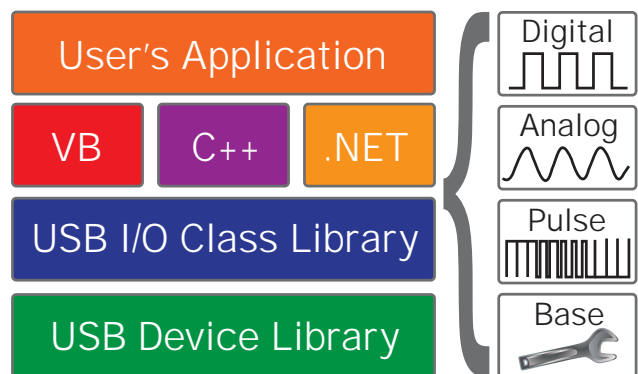
Applications

- Building automation
- Factory automation
- Machine automation
- Testing equipment

■ System Specifications

Model	USB-2051	USB-2051-32
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	
	16 x Digital Input	32 x Digital Input
Power		
Consumption	1.2 W	1.6 W
Mechanical		
Dimensions (mm) (W x L x H)	33 x 110 x 96	31 x 147 x 126
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
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	

■ Wire Connections

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

■ Ordering Information

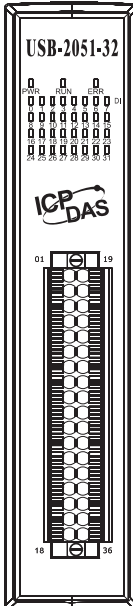| USB-2051 CR	USB I/O Module with Isolated 16-ch DI (Dry, Wet) (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/ Ferrite Core, 1.5 M)
USB-2051-32 CR	USB I/O Module with Isolated 32-ch DI (Dry, Wet) (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/ Ferrite Core, 1.5 M)

■ 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
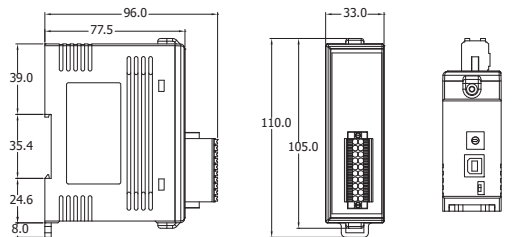
USB-2051-32

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	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.COM	18	36	DI.COM

■ Dimensions (Units: mm)

USB-2051

96.0 77.5 39.0 35.4 24.6 8.0 33.0 110.0 105.0

Left View | Front View | Bottom View

USB-2051-32

126.0 112.2 52.2 35.6 52.2 7.0 31.0 147.0 140.0

Left View | Front View | Top View