



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 I/O device with 16 or 32 digital input channels module. All digital input channels can be used as 32-bit counters. In addition, the digital input channels are sink or source type selectable via wire connections, with an effective distance for dry contact of up to 500 meters. The USB-2051/USB-2051-32 also offers 16/32 LED indicators that can be used to monitor the status of the digital input channels. Dual watchdog function that provided with configurable power-on and safe values ensures the device operates continuously, even 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-2051/USB-2051-32 is the perfect choose for you to implement I/O expansion via a plug-and-play USB interface.

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	32-bit	
Frequency	500 Hz	
Min. Pulse Width	1 ms	
Input Impedance	10 KΩ	
Oversvoltage Protection	70 Vdc	
Intra-Module Isolation	3000 Vdc	

Features

- 16/32-ch digital input
- Dry Contact and Wet Contact Selectable via Wire Connections
- All Channels can be used as 32-bit Counters
- Lockable USB cable
- 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
- Provide API library (VB/C++/C#.NET/VB.NET/LabVIEW)
- Module supported for Win2000/XP , Win7/8/10/11 (32/64 bit) and Linux (32/64 bit)



System Specifications

Model	USB-2051	USB-2051-32
USB		
Specification	USB 1.1/2.0 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	

Wire Connections

Input	ON	OFF
Dry Contact		
Wet Contact (Sink)		
Wet Contact (Source)		

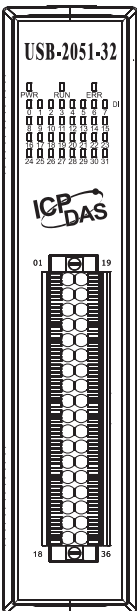
Pin Assignments

USB-2051



Pin Assignment	Terminal No.	Pin Assignment
DI.GND	01	DI.GND
DI0	02	DI8
DI1	03	DI9
DI2	04	DI10
DI3	05	DI11
DI4	06	DI12
DI5	07	DI13
DI6	08	DI14
DI7	09	DI15
DI.COM	10	DI.COM

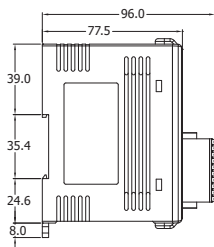
USB-2051-32



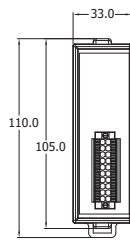
Pin Assignment	Terminal No.	Pin Assignment
DI.GND	01	DI.GND
DI0	02	DI16
DI1	03	DI17
DI2	04	DI18
DI3	05	DI19
DI4	06	DI20
DI5	07	DI21
DI6	08	DI22
DI7	09	DI23
DI8	10	DI24
DI9	11	DI25
DI10	12	DI26
DI11	13	DI27
DI12	14	DI28
DI13	15	DI29
DI14	16	DI30
DI15	17	DI31
DI.COM	18	DI.COM

Dimensions (Units: mm)

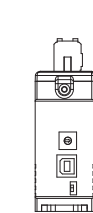
USB-2051



Left View

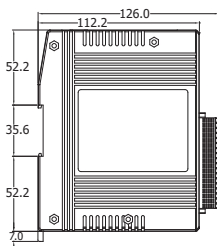


Front View

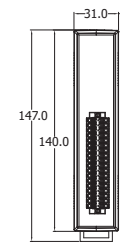


Bottom View

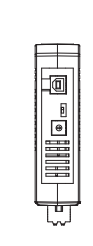
USB-2051-32



Left View



Front View



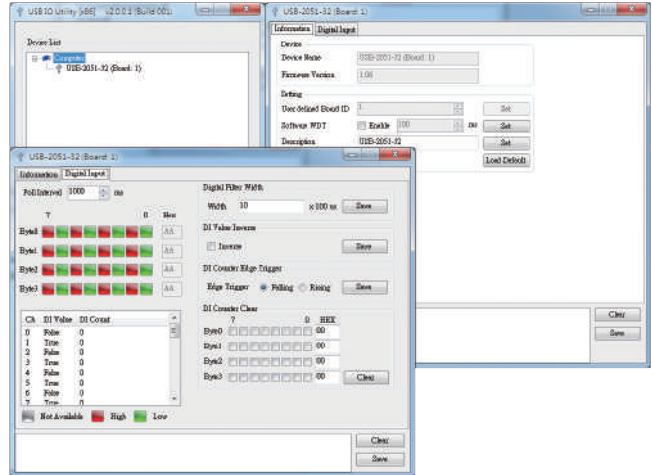
Top View

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/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.

User's Application

VB

C++

.NET

USB I/O Class Library

USB Device Library

Digital

Analog

Pulse

Base

Applications

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

Ordering Information

USB-2051 CR	USB I/O Module with Isolated 16-ch DI (Dry, Wet) (RoHS) Includes 1.5M USB Cable (CA-USB15)
USB-2051-32 CR	USB I/O Module with Isolated 32-ch DI (Dry, Wet) (RoHS) Includes 1.5M USB Cable (CA-USB15)