



USB-2045

USB I/O Module
with 16-ch DO with
Overload Protection



USB-2045-32

USB I/O Module
with 32-ch DO with
Overload Protection

Features

- 16/32-ch sink type digital output
- Short Circuit, Overload and Overvoltage Protection
- Configurable Power-on Value Settings
- Safety functionality when communication failed
- Wide operating temperature range:-25°C~+75°C
- 3000 VDC Intra-Module isolation
- USB 1.1/2.0 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-2045 and USB-2045-32 are full-speed USB device with 16 or 32 digital output channels module, and offers features for industrial control and manufacturing test applications, such as factory automation or embedded machine control. The USB-2045/USB-2045-32 supports source type output and equips with short circuit protection. There are options to enable both power-on and safety value, and 16/32 LED indicators that can be used to monitor the status of the digital output channels. The 4 kV ESD protection, 4 kV EFT protection, 3 kV surge protection for power input 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-2045/USB-2045-32.

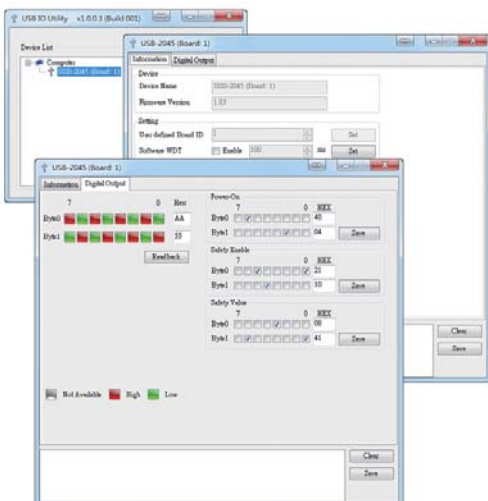
The USB I/O utility can help users to configure and test USB-2045/USB-2045-32 quickly and easily without programming; In addition, we also provide the friendly API library and demos for users to develop own USB application with various application development tools (VB/C++/C#.NET/VB.NET). Therefore, the USB-2045/USB-2045-32 is the perfect way to add control capability to any USB capable computer.

Software

USB I/O Utility

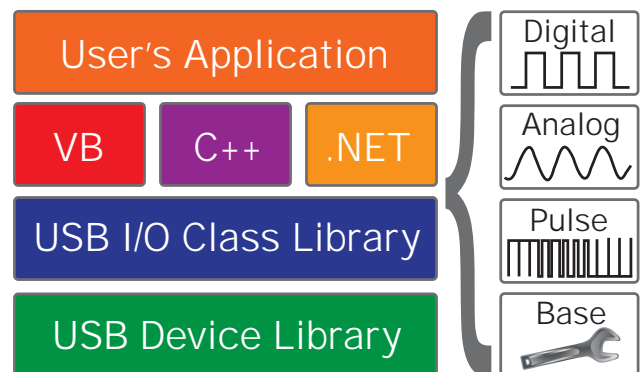
USB I/O Utility provides a simple way to easily test and instant acquire data for all ICP DAS USB I/O series modules without programming.

- 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

- Automation
- Laboratory research
- Measurement and testing
- Testing equipment

System Specifications

Model	USB-2045	USB-2045-32
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 Output 32 x Digital Output	
Power		
Consumption	1.2 W	2.2 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	

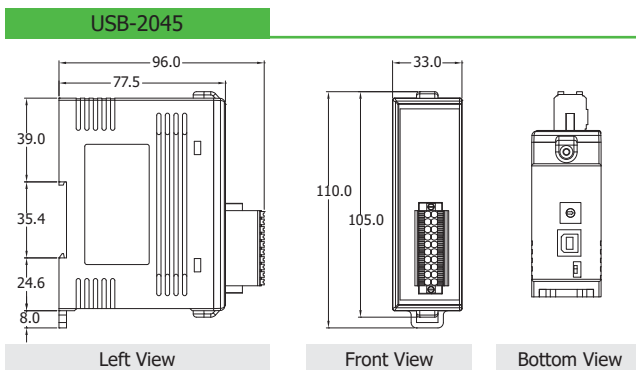
I/O Specifications

Model	USB-2045	USB-2045-32
Digital Output		
Channels	16	32
Type	Open Collector, Sink (NPN)	
Load Voltage	+3.5 ~ +50 VDC	
Max. Load Current	650 mA/Channel	500 mA/Channel
Overvoltage Protection	60 VDC	
Overload Protection	1.4 A (with short-circuit protection)	
Power on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

Wire Connections

Output	ON	OFF
Drive Relay	Ext.PWR DOx Ext.GND	Ext.PWR DOx Ext.GND
Resistance Load	Ext.PWR DOx Ext.GND	Ext.PWR DOx Ext.GND

Dimensions (Units: mm)



Pin Assignments

USB-2045

Pin Assignment	Terminal No.	Pin Assignment
Ext.GND	01	11 Ext.GND
DO0	02	12 DO8
DO1	03	13 DO9
DO2	04	14 DO10
DO3	05	15 DO11
DO4	06	16 DO12
DO5	07	17 DO13
DO6	08	18 DO14
DO7	09	19 DO15
Ext.PWR	10	20 Ext.PWR

USB-2045-32

Pin Assignment	Terminal No.	Pin Assignment
E.GND	01	19 E.GND
DO0	02	20 DO16
DO1	03	21 DO17
DO2	04	22 DO18
DO3	05	23 DO19
DO4	06	24 DO20
DO5	07	25 DO21
DO6	08	26 DO22
DO7	09	27 DO23
DO8	10	28 DO24
DO9	11	29 DO25
DO10	12	30 DO26
DO11	13	31 DO27
DO12	14	32 DO28
DO13	15	33 DO29
DO14	16	34 DO30
DO15	17	35 DO31
E.PWR	18	36 E.PWR

Ordering Information

USB-2045 CR	USB I/O Module with 16-ch DO (Sink, NPN) with Overload Protection (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/Ferrite Core, 1.5 M)
USB-2045-32 CR	USB I/O Module with 32-ch DO (Sink, NPN) with Overload Protection (RoHS) Includes CA-USB15 Cable (USB 2.0 A-Male to B-Male Cable, w/Ferrite Core, 1.5 M)