



## 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
- Configurable Power-on Value Settings
- Safety functionality when communication failed
- No external power supply (USB Bus Powered)
- Plug-and-Play without driver
- Lockable USB cable
- 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)



### Introduction

The USB-2045 and USB-2045-32 are full-speed USB I/O device with 16 or 32 digital output channels module. In addition, The USB-2045/USB-2045-32 also offers 16/32 LED indicators that can be used to monitor the status of the digital output channels. Dual watchdog function that provided with configurable power-on and safe values ensures the device operates continuously, even in harsh environments.

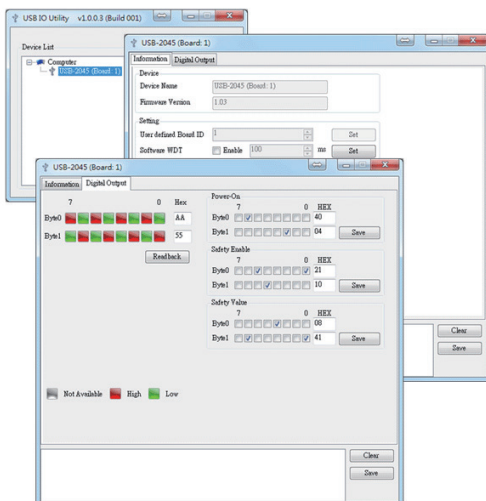
We also provide API library and demos with source code for Windows and Linux users to develop their own USB applications with various development tools (VB/C++/C#.NET/VB.NET/LabVIEW). Therefore, the USB-2045/USB-2045-32 is the perfect choose for you to implement I/O expansion via a plug-and-play USB interface.

### Software

#### USB I/O Utility

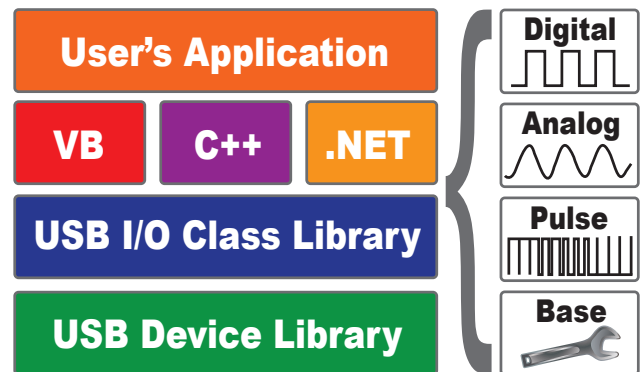
USB I/O Utility provides a simple way to easily test and instant acquire data for all ICP DAS USB I/O series modules without programming.

- 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.



### Applications

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

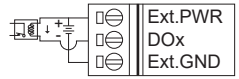
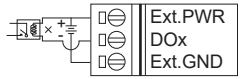


## System Specifications

Model	USB-2045	USB-2045-32
<b>USB</b>		
Specification	USB 1.1/2.0 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 Digital Output   32 x Digital Output	
<b>Power</b>		
Consumption	1.2 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

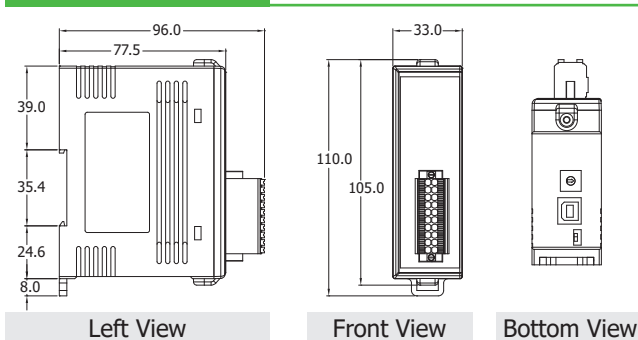
Model	USB-2045	USB-2045-32
<b>Digital Output</b>		
Channels	16	32
Type	Open Collector, Sink (NPN)	
Load Voltage	+3.5 ~ +50 Vdc	
Max. Load Current	650 mA/Channel	500 mA/Channel
Overvoltage Protection	60 Vdc	
Overload Protection	1.4 A (with short-circuit protection)	
Power on Value	Yes, Programmable	
Safe Value	Yes, Programmable	
Intra-Modulesolation	3000 Vdc	

## Wire Connections

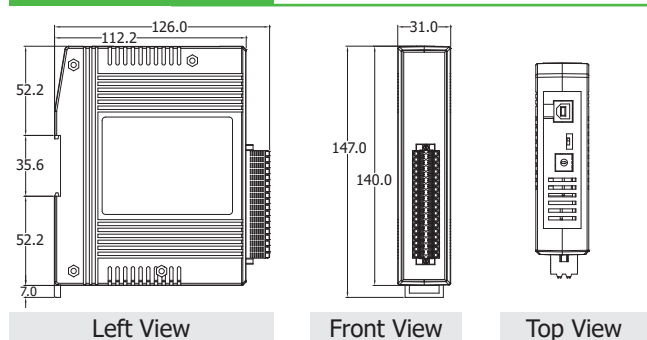
Output	ON	OFF
Drive Relay		
Resistance Load		

## Dimensions (Units: mm)

### USB-2045



### USB-2045-32

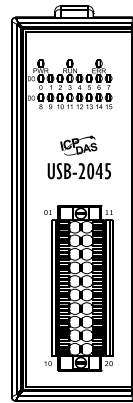


## Ordering Information

<b>USB-2045 CR</b>	USB I/O Module with 16-ch DO (Sink, NPN) with Overload Protection (RoHS) Includes 1.5M USB Cable (CA-USB15)
<b>USB-2045-32 CR</b>	USB I/O Module with 32-ch DO (Sink, NPN) with Overload Protection (RoHS) Includes 1.5M USB Cable (CA-USB15)

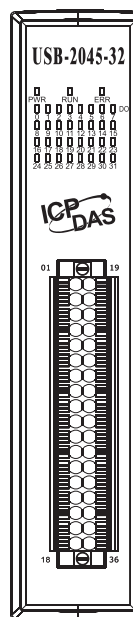
## Pin Assignments

### 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