

## CG-4PHUBISO Introduction

CG-4PHUBISO is a rugged, industrial-grade 4-port full speed isolated USB 2.0 hub. HUB-400i-ISO expands one USB port into four optically isolated USB ports. It is designed with optical isolation to enhance isolation protection up to 3000 VDC between upstream and four downstream ports to prevent harmful voltage, ESD shock, ground loops and noise. The isolated hub supports USB 2.0 full speed of 12 Mbps and USB 1.1 low speed 1.5 Mbps. It is powered by external power supply, and each downstream port provides up to 500mA power to connected USB devices.

Each USB device connected to the isolated hub can operate independently. This isolated 4-port hub is designed with individual port power management. When any downstream port is overloaded or overcurrent, the port will shut down itself alone without affecting or terminating the normal operation of the other 3 USB ports. The port will resume to normal function automatically, once the overloading or overcurrent status is away. The isolated hub provides a high-voltage isolation barrier between the host PC and the connected USB peripheral devices. The isolation protects equipment from electrical surges and transient voltage spikes. It also helps eliminate ground loop currents flowing between the host computer and USB peripheral devices that can cause damage and inaccurate measurements.

CG-4PHUBISO is designed for the use in industrial applications. It is housed in a DIN-rail mountable metal case with screw holes for lockable USB and power cables. Next to each USB downstream port connector are two screw holes for lockable USB cables to add extra reliability of connection. The terminal power input connector is with two screw holes securely locking the power wires to prevent them from accidental disconnection. The wrong polarity free power circuit design prevents damages caused by wrong polarity power input from the DC power to the USB hub. The design provides the convenience for not needing to care about the polarity when connecting the power cables of DC power to the terminal power input connector.

## Features

- Isolates and protects USB peripheral products from a USB host
- Electrical isolation up to 3000 Vrms for each downstream port
- Industrial-grade 4 port USB 2.0 hub in a rugged metal case
- Suitable for DIN-rail mounting
- Common mode filtering on all data lines
- Each downstream USB port supplies 5V 500mA power for external high-power USB devices
- Individual port power management
- Support USB 2.0 full speed 12 Mbps and USB 1.1 low speed 1.5 Mbps data rate with jumper-selection
- No software or drivers required
- Short circuit and over current protection
- LED for power and USB status indication
- All USB connectors with screw holes for lockable USB cable
- Input power connector with screw holes to lock the power cable
- Power 9 ~ 30V DC or AC power input. An external power adapter included
- With diode bridge circuit to avoid wrong polarity input DC power



- Wide ambient temperature operation 0°C to 60°C (32°F to 140°F)
- CE, FCC approval

## System Requirements

Any PC or Macintosh computer with an available USB port and USB compliant operating system such as Windows 8.1, 8, 7, Vista, XP, ME, 2000 or Mac OS 8.6 and above, etc.

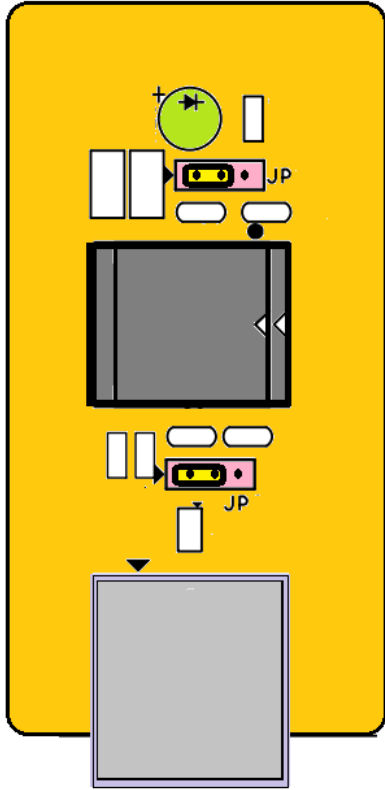
FUNCTION		SPECIFICATION
Ports	Downstream	4 Isolated
	Upstream	1
LEDs	Power	1
	Port Status	4
Power Mode		Self Power Mode
Output Voltage (per port)		+5V DC
Output Current (per port)		500mA (max)
Operating Temperature		0 °C to 60°C
Storage Temperature		-40 °C to 85°C
Humidity		0 to 80% RH, Non-condensing
Weight		300g
Dimensions		85mm x 137mm x 24mm (WxLxH) 85mm x 159mm x 24mm (WxLxH) with DIN-Rail ears
Input Power Range		+9V ~ +30V DC or AC

## Diagram

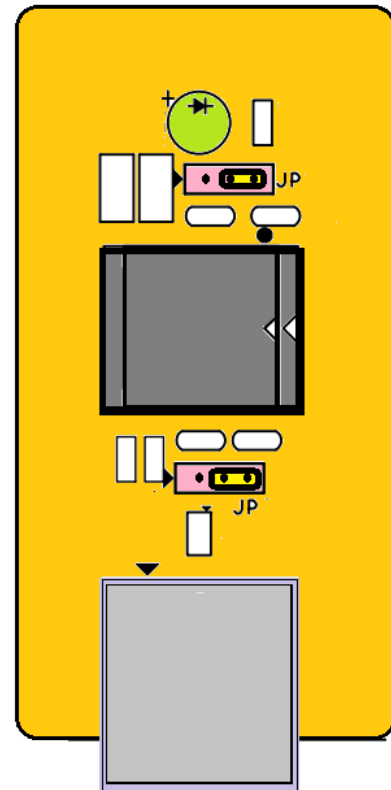


## Setting USB Operation Speed

Inside the HUB-400i-ISO isolated hub, there are eight 1x3 header blocks (JP2-JP9). There are jumpers to select USB 2.0 full speed 12 Mbps or USB 1.1 low speed 1.5 Mbps data rate operation for four USB port.



Short pin1,2 of pinheader for USB2.0 full speed  
(factory default setting)



Short pin2,3 of pinheader for USB1.1  
low speed

The table below shows USB operation speed setting by jumpers JP2~JP9.

Jumper	USB Port	Function
<b>JP2</b> 1-2 <b>JP3</b> 1-2	Port 1	USB 2.0 full speed (12Mbps) data rate operation (default setting)
<b>JP2</b> 2-3 <b>JP3</b> 2-3	Port 1	USB 1.1 low speed (1.5 Mbps) data rate operation
<b>JP4</b> 1-2 <b>JP5</b> 1-2	Port 2	USB 2.0 full speed (12 Mbps) data rate operation (default setting).

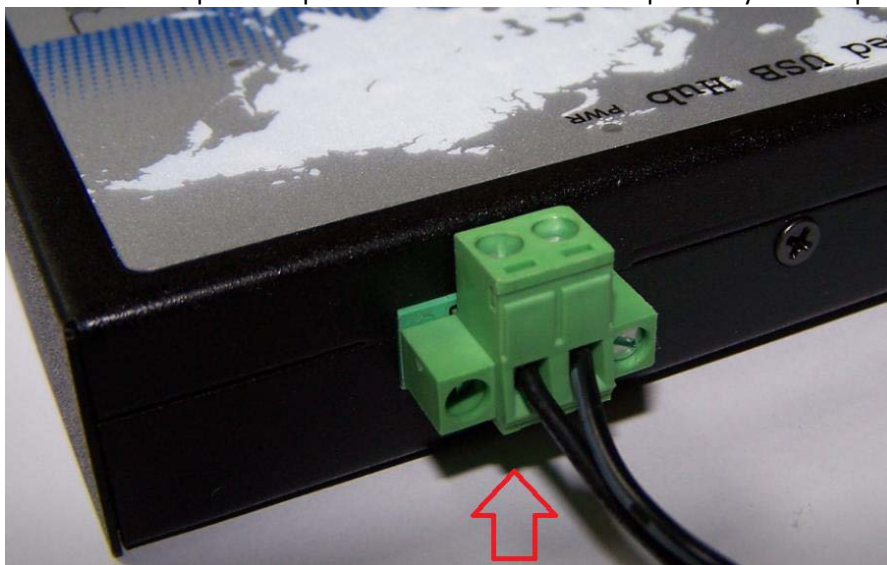


<b>JP4</b> 2-3 <b>JP5</b> 2-3	Port 2	USB 1.1 low speed (1.5 Mbps) data rate operation.
<b>JP6</b> 1-2 <b>JP7</b> 1-2	Port 3	USB 2.0 full speed (12 Mbps) data rate operation (default setting).
<b>JP6</b> 2-3 <b>JP7</b> 2-3	Port 3	USB 1.1 low speed (1.5 Mbps) data rate operation.
<b>JP8</b> 1-2 <b>JP9</b> 1-2	Port 4	USB 2.0 full speed (12 Mbps) data rate operation (default setting).
<b>JP8</b> 2-3 <b>JP9</b> 2-3	Port 4	USB 1.1 low speed (1.5 Mbps) data rate operation.

## Installation

HUB-400i-ISO is a plug and play device. The software driver will be installed automatically.

- 1) Connect your AC power adapter to HUB-400i-ISO isolated HUB. The red power LED will light on when the hub is receiving power. Connect the upstream port cable to an unused USB port on your computer.



**Connect power adapter to HUB-400i-ISO isolated HUB**





The HUB-400i power input is designed with a diode bridge circuit, and you don't need to care the input DC power polarity when plugging the power connector. You can also use an AC to AC 9V ~ 30V power adapter for HUB-400i-ISO.

- 2) After the software driver is loaded, you can find new "Generic USB Hub" in Universal Serial Bus controllers under "Device Manager" of the "System Properties" screen. (Go to "Device Manager" by selecting Start- Setting- Control Panel- System Properties- Hardware- Device- Device Manager).
  
- 3) Connect your USB devices to the downstream ports on the HUB-400i-ISO isolated HUB. The green USB status LED will illuminate when your USB devices connected to one of the USB ports successfully.

