# GV-I/O Box 16 Ports

The GV-I/O Box 16 Ports provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages.

## Key Features

- 16 inputs and 16 outputs are provided.
- Up to 9 pieces of GV-I/O Box 16 Ports can be chained together.
- A USB port is provided for PC connection, and it is only used for 30 DC output voltage.

## System Requirements

- GV-System version 8.2 or above

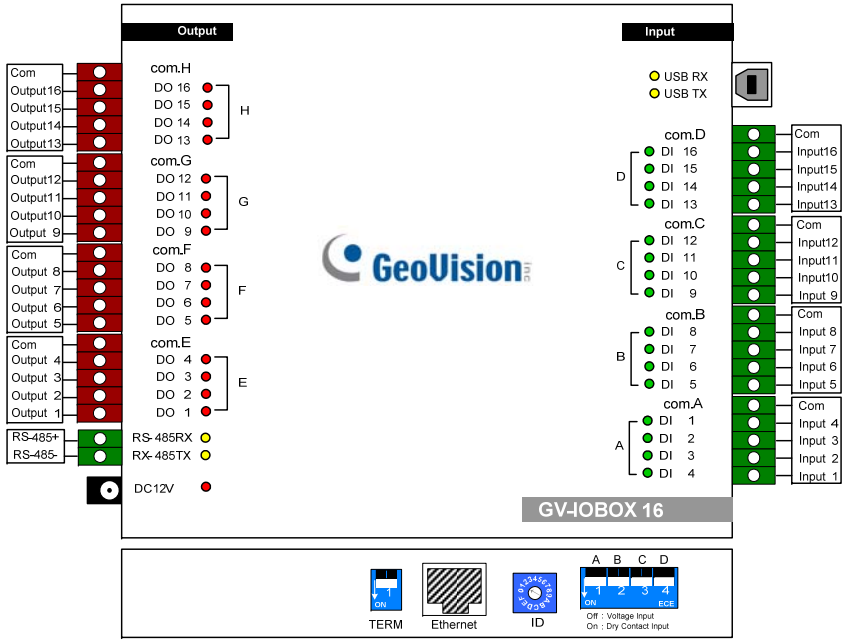
## Packing List

1. GV-I/O Box 16 Ports x 1
2. USB Cable (Type A to B) x 1
3. Power Adapter DC 12V x 1
4. Installation Guide x 1

**Note:** The GV-I/O box 16 Ports comes with the option of an Ethernet module. See Accessing GV-I/O Box over Networks, *Chapter 2*, *Installation Guide* on the Surveillance System Software DVD.

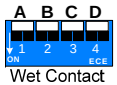


## Overview



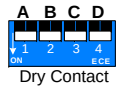

## DIP Switch

The GV-I/O Box 16 Ports allows the use of mixing dry and wet contact devices together. The 16 inputs divided as four-in-one groups (A, B, C and D) are related to the 4 switches on the box for dry and wet contact.



Wet Contact

To change the inputs to different kind of contact, push the switch upward.



Dry Contact

To change the inputs to different kind of contact, push the switch downward.

**Note:** The RS-485 connectors do not have the conversion function from RS-485 to RS-232, so don't connect RS-485 devices, such as PTZ camera, to the connectors.

## Connections to PC

There are three ways to connect the GV-I/O Box 16 Ports to the PC:

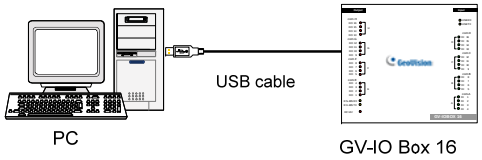
(1) Use the USB cable to connect the PC.

(2) Through the option of GV-Hub, GV-COM, GV-NET Card or GV-NET/IO Card, use the RS-485 connectors to connect the PC.

(3) Through network connection. This is an optional function. See Accessing GV-I/O Box over Network, *Chapter 2*, *Installation Guide* on the Surveillance System Software DVD.

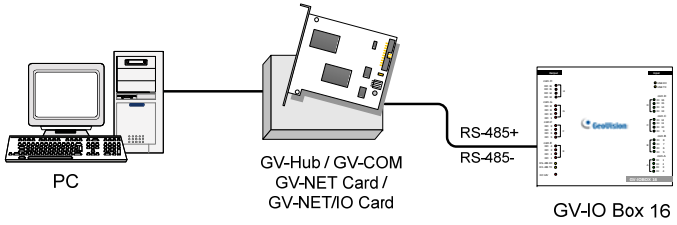
**Note:** Only one of the three methods can be used one time. If your GV-I/O Box has network connectivity, ensure to unplug the network cable before switching the connection to USB or RS-485. See [Connection to IO BOX] in *Other Setting*, *Chapter 2*, *Installation Guide* on the Surveillance System Software DVD.

1. Use the USB cable to connect one GV-I/O Box 16 Ports to PC. **(Allowed for DC Output Voltage only)**




**Note:** It is required to install the USB driver. See *Installing USB Drive* later in this Installation Guide.

2. Use the RS-485 connectors to connect one GV-I/O Box 16 Ports to PC. **(Allowed for AC/DC Output Voltage)**

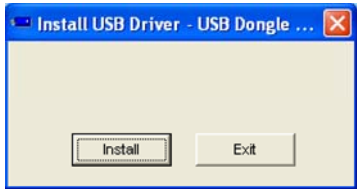




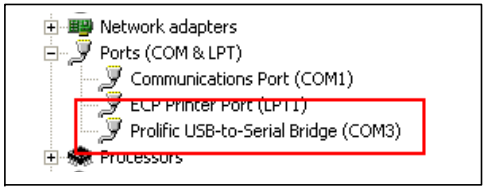

## Installing USB Driver

To use the USB function, it is required to install the driver on the PC. Follow these steps to install the driver:

1. Insert the software CD. It will run automatically and pop up a window.
2. Select **Install or Remove GeoVision GV-Series Driver**, and then click **Install GeoVision USB Devices Driver**. This dialog box appears.

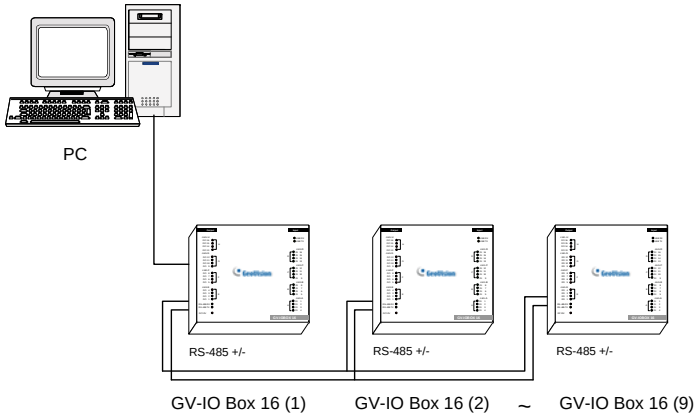



3. Click **Install** to install the drivers. When the installation is complete, this message will appear: *Install done!*
4. Click **Exit** to close the dialog box.
5. To verify the drivers are installed correctly, go to **Device Manager**. Expanding the **Ports** field, you should see one entry for Prolific USB-to-Serial Bridge.



## Assigning Addresses to GV-I/O Box 16 Ports

Up to 9 pieces of GV-I/O Box 16 Ports can be chained together to expand the I/O capacity. Use the ID switch (1~9) to assign addresses 1~9 to the connected GV-I/O Box 16 Ports.




## ID Switch

ID

1. Addresses 0 and A to F are NOT functional.
2. Assign the addresses when the power is off.
3. If you want to change the assigned address of the connected GV-I/O Box 16 Ports, set the switch to the new address, and then re-plug the power adaptor.

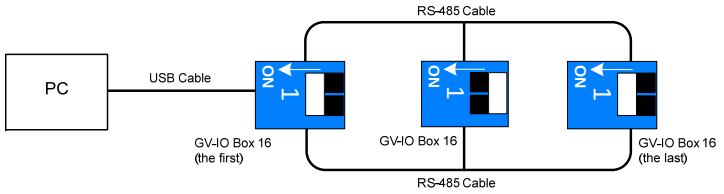


## Extending Transmission over the Distance

When the transmission signals between the RS-485 communications become weak over the distance, switch on the Terminal Resistance Switches to maintain the signals. Three conditions below illustrate how the Terminal Resistance Switches should be switched on.

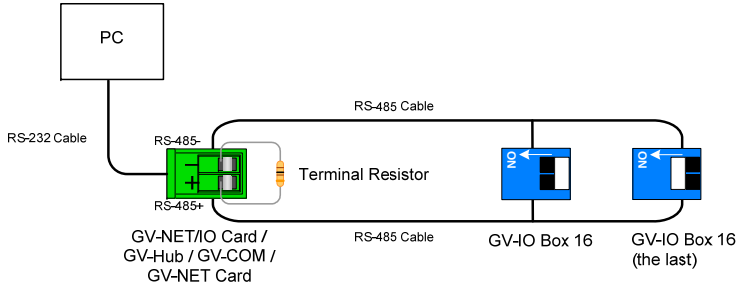
1. **Multiple pieces of GV-I/O Box 16 Ports are connected with the PC through one single RS-485 cable.**

   After you connect multiple pieces of GV-I/O Box 16 Ports with the PC, only switch on the Terminal Resistance Switches in the first and last connected pieces of GV-I/O Box 16 Ports.



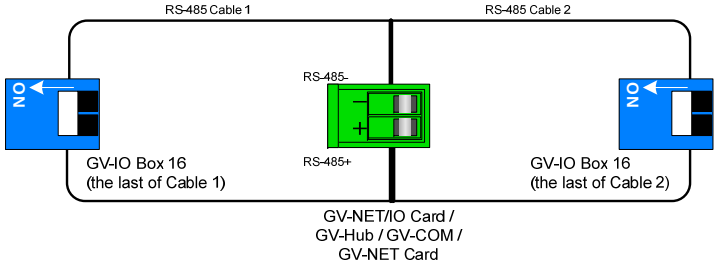

2. **Multiple pieces of GV-I/O Box 16 Ports are connected with the PC through a RS-485 / RS-232 conversion device.**

   After you connect multiple pieces of GV-I/O Box 16 Ports with the PC through a RS-485 / RS-232 conversion device, such as GV-NET/IO Card and GV-Hub, insert a Terminal Resistor in the conversion device and switch on the Terminal Resistance Switch of the last connected GV-I/O Box 16 Ports.



**3. Multiple pieces of GV-I/O Box 16 Ports are connected with the PC through separate RS-485 cables.**

After you connect multiple pieces of GV-I/O Box 16 Ports with the PC through separate RS-485 cables, switch on Terminal Resistance Switches of the connected piece of GV-I/O Box 16 Ports at the end of each cable.




### Terminal Resistance Switch


The default setting of the Switch is OFF. To switch on the Terminal Resistance Switch, push the switch downward.



## Specifications

| | | | |
|---|---|---|---|
| Input | Input | 16 | |
| | Input Signal | Dry Contact | |
| | | Wet Contact, 9-30V AC/DC | |
| Output | Relay Output | 16 | |
| | Relay Status | Normal Open | |
| | Relay Capacitance | USB Connection | 30V DC, 3A |
| | | RS-485 Connection | 125 / 250V AC, 3A<br>30V DC, 3A |
| Ethernet | RJ-45, 10/100 Mbps (Optional) | | |
| DC IN | DC 12V, 1A | | |
| Address | 0-9, A-F | | |
| Terminal Resistance | 120Ω | | |
| Environmental Condition | 0~50 Degree C / 32~122 Degree F<br>5%~95% (Non-Condensing) | | |
| Dimensions (W x H x D) | 180 x 27 x 183 (mm) / 7.09 x 1.06 x 7.2 (in) | | |
| Note: The product does not support 64-bit Windows versions currently. | | | |

## Ordering Information

84-IOB16-100