

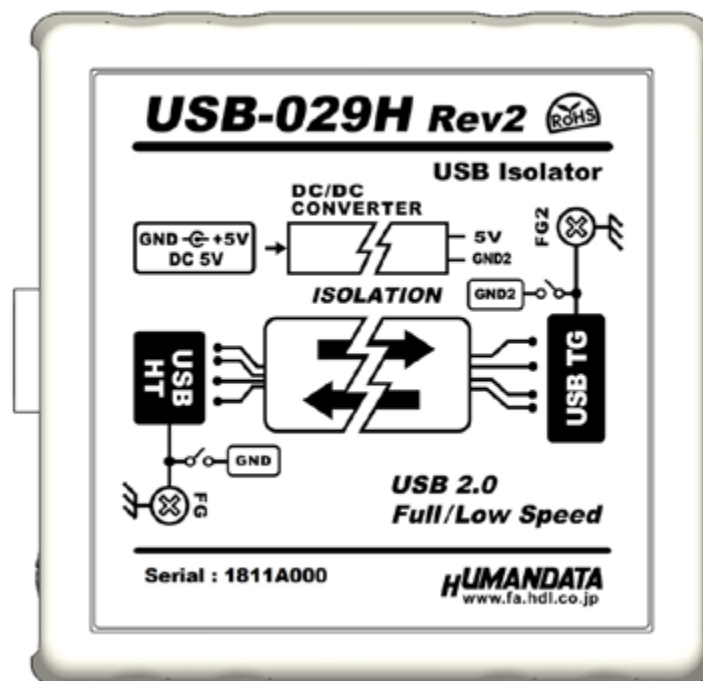
**USB Isolator Industrial-Grade**



**USB-029H (Rev2)**

**User's Manual**

**Ver. 1.0**





**HUMANDATA LTD.**

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## ● Precautions

|   |    |   |
|---|----|---|
| <br><b>Do Not</b>      | 1  | This product uses ordinary off-the-shelf electronic components, and is therefore inappropriate for use in applications that require special quality or reliability and are expected to protect human lives or prevent accidents, such as safety mechanisms in fields including space, aeronautics, medicine, and nuclear power. |
|   | 2  | Do not be used underwater or in high-humidity environments.   |
|   | 3  | Do not be used in the presence of corrosive gases, combustible gases, or other flammable gases.   |
|   | 4  | Do not turn on power when circuit board surface is in contact with other metal.   |
|   | 5  | Do not apply voltage higher than rated voltage.   |
| <br><b>Attention</b> | 6  | This manual may be revised in the future without notice owing to improvements.  |
|   | 7  | All efforts have been made to produce the best manual possible, but if users notice an error or other problem, we ask that they notify us.  |
|   | 8  | Item 7 notwithstanding, HuMANDATA cannot be held liable for the consequences arising from use of this product.  |
|   | 9  | HuMANDATA cannot be held liable for consequences arising from using this product in a way different from the uses described herein, or from uses not shown herein.  |
|   | 10 | This manual, circuit diagrams, sample circuits, and other content may not be copied, reproduced, or distributed without permission.   |
|   | 11 | If the product emits smoke, catches fire, or becomes unusually hot, cut the power immediately.  |
|   | 12 | Do not install the control cables or communication cables together with the main circuit lines or power cables. In such an environment, it may result in malfunction due to noise.  |
|   | 13 | Be careful of static electricity.   |

## ● Revision History

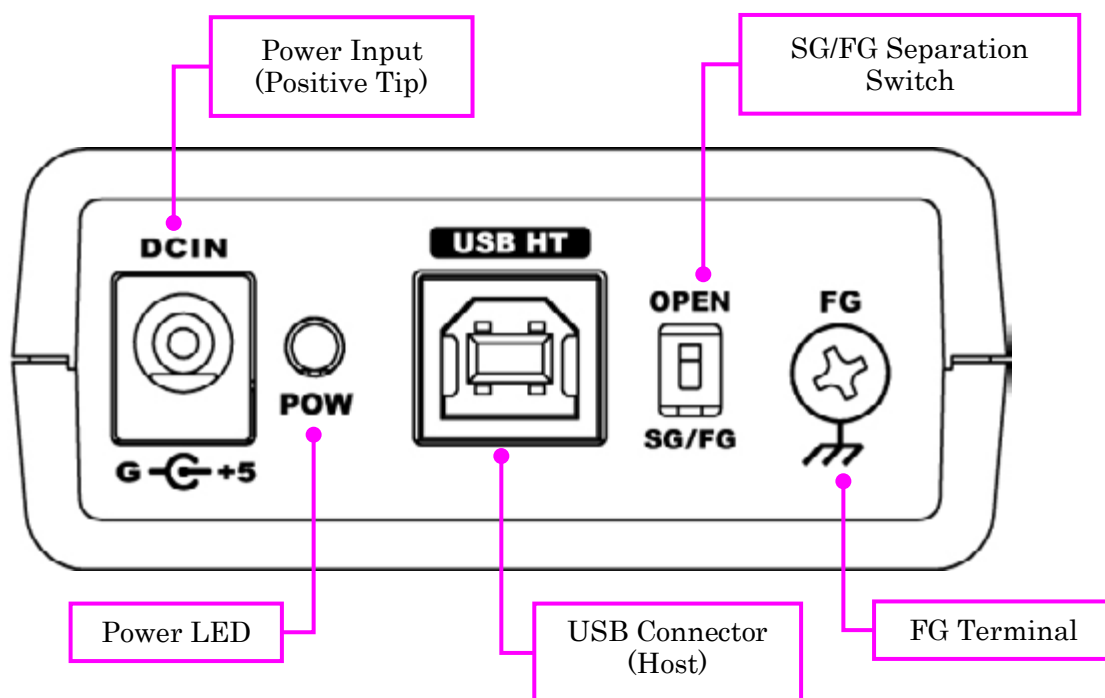
| Date          | Revision | Description     |
|---------------|----------|-----------------|
| Oct. 21, 2016 | v1.0     | Initial release |

## ● Introduction

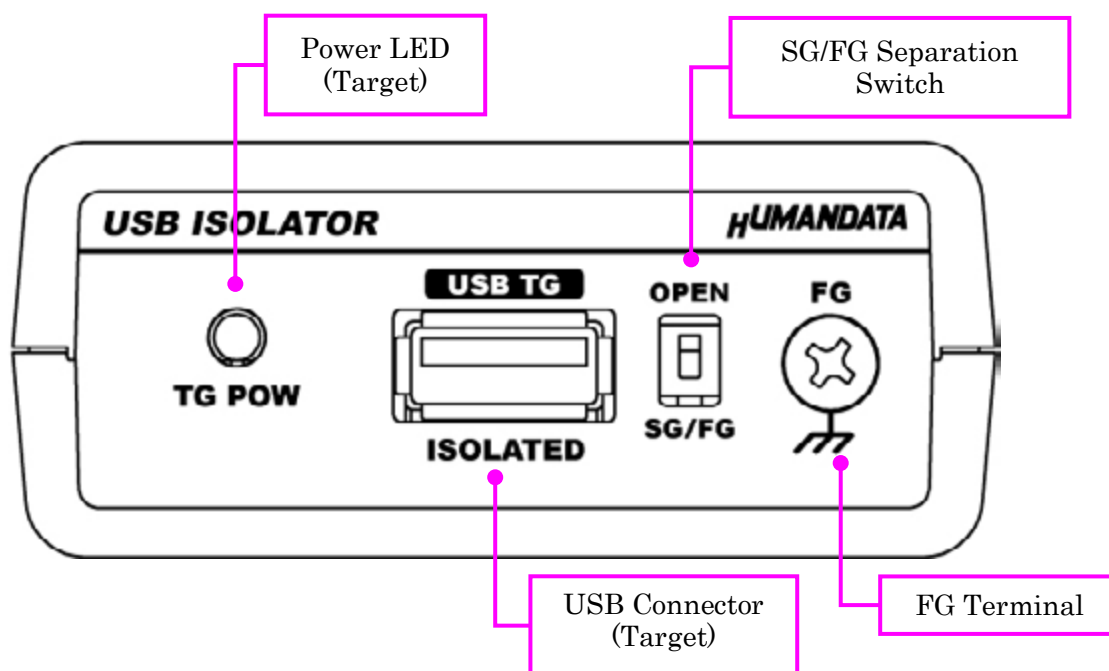
Thank you very much for purchasing our product.

USB-029H is a USB 2.0 Full Speed (12Mbps) and Low Speed(1.5Mbps) compliant isolator which isolates between a USB host and a USB peripheral device with 2500VDC.

## 1. Overview

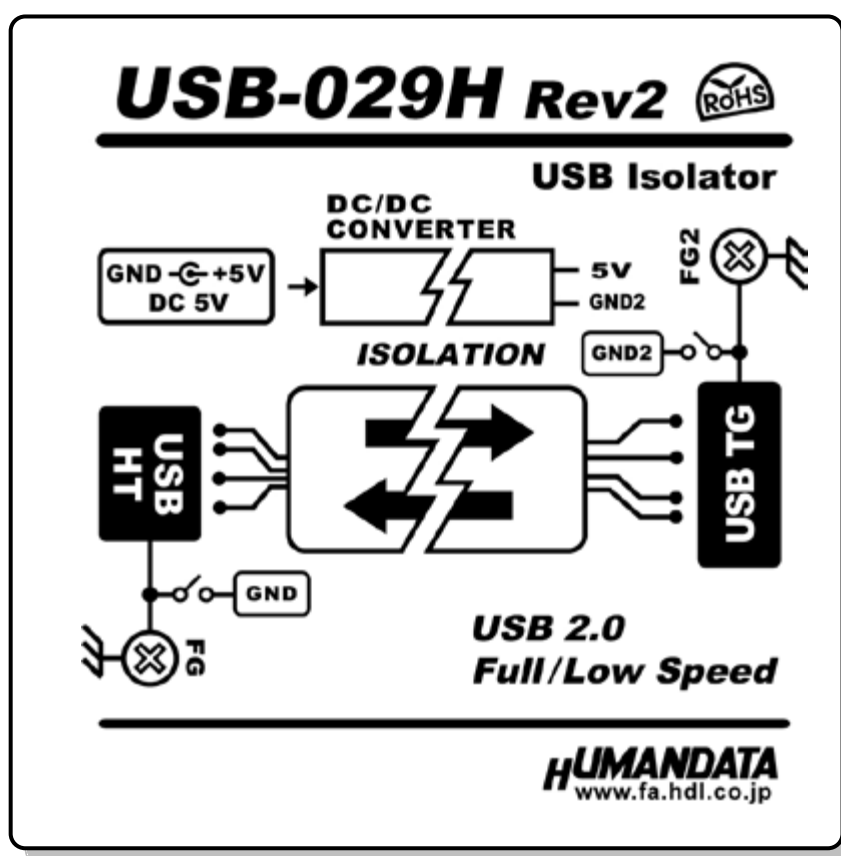


USB Host side



USB Target side

Top side (Block diagram)



## 2. Feature

USB-029H is a USB 2.0 Full Speed (12Mbps) and Low Speed (1.5Mbps) compliant isolator which isolates between a USB host and a USB peripheral device with 2500VDC. With USB-029H, it can be expected to eliminate ground loops that can cause measurement errors and surges from the equipment, common-mode voltage, static discharge, magnetic fields, and radio frequency interference. There is no need to install any drivers. It works with every operating system such as Windows, Linux, Mac OS X. USB-029H is a industry-grade product that add the FG terminal and FG/SG separation function by the dip-switch from USB-029.

### 3. Connection

You can use an included USB cable to connect the host side connector to the host (such as a personal computer), and connect a USB peripheral device to the target side connector.

### 4. Power Supply

USB-029H is powered through a USB port (Bus-powered) or an AC adapter (Self-powered). An AC adapter has priority when both supplies are applied.

### 5. SG/FG Separation switch

You can separate between SG (signal ground) and FG (frame ground) of each USB host and USB target.

| Position | SG - FG    |
|----------|------------|
| OPEN     | Open       |
| SG/FG    | Connection |



\* Same function for host and target.

### 6. FG Terminal

It is possible to connect a ground wire to this terminal when needed.






## 7. Specifications

### 7.1. Product Specification

| Item                          | Description  | Remarks  |
|-------------------------------|--|--|
| Model                         | USB-029H   |  |
| Input Power                   | 5VDC<br>Supplied through a USB port (Bus-powered) or AC adapter (Self-powered) | Recommend the use of an AC adapter for stably supply<br>An AC adapter supply to the host side. |
| Current Consumption           | Less than 100mA + current of the target device                                 | 500mA max.   |
| Host interface                | USB 2.0 Compliant<br>Supports Full (12Mbps) and Low (1.5Mbps) Speed            | USB 1.1 compatible<br>ESD protection   |
| Isolation Method              | Bus isolation  |  |
| Isolation Protection          | 2500VDC  | Designed value   |
| Support OS                    | OS-Independent<br>(No drivers required)  |  |
| LED                           | POW: Power LED<br>TG POW: Target Power LED                                     |  |
| Operating Ambient Temperature | -10 to 60 [°C] (14 to 140 [°F])  | No condensation permitted  |
| Operating Ambient Humidity    | 30 to 85 [%RH]   |  |
| Storage Ambient Temperature   | -20 to 60 [°C] (-4 to 140 [°F])  |  |
| Storage Ambient Humidity      | 30 to 85 [%RH]   |  |
| Weight                        | Approx. 90 [g]   | Only main body   |
| Dimensions                    | 67 x 67 x 28 [mm]<br>(2.638" x 2.638" x 1.102")                                | Without projections  |



## 7.2. Optional Accessories

| Model       | Image   | Description  |
|-------------|---|--|
| PEN-003     |  | USB series Attachment with clamping screw<br>JAN : 4937920800709   |
| PEN-003-DIN |  | USB series Attachment for 35mm DIN rail<br>JAN : 4937920800716     |
| PEN-003-MG  |  | USB series Attachment with neodymium magnet<br>JAN : 4937920801201 |

## 8. Additional Documentation and User Support

The following documents and other supports are available at

<http://www.hdl.co.jp/en/faspc/USB/usb-029h>

- User's Manual  
... and more.

## 9. Warranty and Compensation

Please refer to the following URL for the warranty.

<http://www.fa.hdl.co.jp/en/fa-warranty.html>

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## USB-029H (Rev2)

### User's Manual

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