

isolating protecting ground-breaking

- Unique high 6kV isolation
- Certified according to EN60601-1-2:2007
- Certified USB Function (Gold Tree Interoperability)
- Energy transfer to secondary side
- Supports USB Low/Full Speed (autoselect)
- Transparent transmission without software driver
- Very compact and robust isolation housing
- Made in Germany, 3 years warranty



Protection and Security for human, device and PC

The USB isolator is used to uncouple the electrical potential of any USB device from PC or hub. It is the professional tool for avoiding and fighting ground loops, equalizing currents and protection against overvoltages.

Its extra high isolation voltage together with the certification according to EN60601-1:2007, encapsulated in an extra protective housing, ensures safety even in medical and other critical applications.

Its special Features

Unique high 6kV insulation for data and energy together with an unbeatable high working range (allowed permanent voltage difference) of more than 500V. Additional protection of the USB ports against transients.

Certified according to EN60601-1-2:2007 for application even in very sensitive and critical fields like the medical technology. Separates the 'normal' PC system from the critical application.

The correctitude and immunity of the communication was independently checked and validated according to the USB specifications to guarantee a maximum transmission reliability.

Automatic detection and switch of the transfer rate: Low Speed (1.5MBaud), Full Speed (12MBaud). High Speed devices run with 12MBaud. USB 1.1+2.0.

Technical data

Isolation strength	6000Vdc 1sec.; 4000Vdc 1min.; Tested 6000Vdc 1min.; 500Vac working range.
Transient protection	Integrated protection diodes with approval $\pm 8kV$ acc. to IEC 61000-4-2.
Energy transmission	Primary to secondary 3W, more than 75% efficiency.
Output current	More than 500mA with auxiliary supply, ab. 300mA with supply from primary USB connector.
Auxiliary voltage	7 to 18V, about. 4W, stabilized DC, optional.
Overload protection	Switch-off of the secondary USB voltage on thermal overload.
Transmission	Fully transparent and invisible, signal delay < 50ns, capacity < 50pF.
Environment	0-40°C (32-100°F), 20-90% humidity, non-condensing.
Storage Environment	-40 to +70°C, 10 to 100% humidity, 500 to 1060 hPa pressure.
Connectors	USB-Prim: Jack Type B, USB-Sec: Jack Type A. Aux supply: Jack for standard 5.5*2.1*9.5mm, center +
Scope of delivery	Isolator, USB cable 2m with A and B plug connector, Aux. supply not included since normally not needed
Certification	According to EN60601-1:2007, CE and FCC standards fulfilled, USB certified Gold Tree Interoperability
Dimension	100mm x 50mm x 30mm (Length, width, height). Weight ca. 100g

Availability and price

This article is exclusively available at www.iftools.com. Complete price USB isolator ISOUSB-hvd including 2m USB cable: **198 €** (All prices plus tax if applicable)

Optional power supplies for end devices which draw more than about 300mA from USB:

PS1205 for noncritical applications, not certified: **16 €**

PSM0908 with filter for critical applications, certified together with ISOUSB-hvd: **59 €**

Inserted completely transparent and invisible into the connection, no software driver needed.

Up to 300mA energy transfer to the secondary side without auxiliary supply directly from the primary USB port.

Supports output currents of more than 500mA by direct integrated connector for optional auxiliary supply.

No auxiliary supply needed at the second side. Therefore no decreasing of the isolation through additional external supplies.

Isolation housing in extra stable and compact design, dimension only 100x50x25mm, weight about 100g.

High protection against direct touching by countersunk secondary USB Jack.

Connection status display, separately for each side.

Orange: idle port, green: active port, red: error condition.

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Please pay attention to the following hints!
Especially in critical and sensitive application fields like the medical technology some applications requirements have to be followed!



High voltages may be attached!
It is the responsibility of the user to take care for a sufficient insulation and protection against contact of the floating system components!

Secondary



Primary

Warning hints

According to its task the isolator splits by its complete isolation one electric circuit with a common ground line into two circuits with a floating voltage relationship.

If no method is implemented to prevent drifting voltage ranges from each other, i.e. by a common earthing, large floating voltage differences between primary and secondary side can occur. These can lead to serious danger when not isolated parts of the circuits are touched.

If no voltage equalization can be done by earthing or must not be done in the special application, care must be taken that the permanent potential difference between both sides does not exceed the working range of the isolator, specified in the technical data.

Basic rules for this device

The requirements of professional devices are so that a usage in the living range or a connection to the public supply is allowed. In medical field the device may be used in practice and hospital even outside of shielded locations.

The device does not have a live-supporting function.

The device generates high frequency. Medical electronic devices are subject to special precautionary measuring in particular regarding the EMC with the installation and operation. Portable and mobile HF-communications devices such as mobile phones can affect medical electrical devices.

The connections between PC and isolator and between the isolator and the end device with cables of more than 3m length is not certified for critical applications.

If an additional power supply must be used for end devices with more than 300mA drawn from USB, only the appropriate tested and certified power supply IFTOOLS-PSM0908 with ferrite filter may be used to keep the EMC class B.

Insertion into the USB connection

The isolator is inserted completely transparent into the existing connection between PC and end device.

Using the included USB cable the PC is connected to the blue marked jack of the isolator (primary side).

If the isolator is used without auxiliary power supply no cable with more than 2m length should be used to avoid malfunction due to voltage loss on the primary cable.

The original cable of the end device is inserted into the red marked jack of the isolator (secondary side).

When the connection is correctly established the communication must start after a few seconds. Both LEDs have to light green.

If the LEDs turn off again an auxiliary power supply has to be used. Please regard the correct voltage range and polarity.

Appropriate supplies are available from IFTOOLS.

The sequence of connection and the sequence of power up of PC and device is arbitrarily.

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