

One-Port USB to USB Isolators

Protect expensive USB devices from noise, surges and spikes.

These small, affordable in-line isolators eliminate ground loops, too.



Product Overview

- SP387A is certified up to 4kV isolation, 8kV contact, 15kV air ESD.
- SP386A provides 2-kV triple isolation for safeguarding data and equipment in heavy industrial settings.
- Both of these high retention USB connectors feature an ultra-compact in-line design.
- Powered from the USB bus; no drivers are required.
- Designed to withstand both shock and vibration.
- Data rates up to 12 Mbps.

Protect expensive PCs and equipment from damaging electrical storms, power surges, and other high EMI/RFI disturbances. This heavy-duty line of isolators packs a powerful punch against electrical noises, surges and spikes, and it eliminates ground loops, which are disruptive in measurement applications.

Both isolators are USB bus powered and provide up to 100 mA of current to attached downstream devices. They comply with the USB 1.1 standard and transfer data at 12 Mbps.

Standard USB cables of up to 5 meters may be used on either side of the products.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

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Specifications

Approvals — Emissions: FCC Class A, CISR Class A (EN55022);

CE: EN61000-6-2:2005 (Heavy industry);

EN61000-4-2:2008 (ESD) +/-8kV Contact, +/-15kV Air;

EN61000-4-3:2006 (RI) 10 V/m, 80-1000 MHz; 3 V/m, 1.3 to 2.7 GHz;

EN61000-4-4:2004 (EFT Burst) +/-2 kV DC ports; +/-1 kV signal ports;

EN61000-4-5:2005 (Surge) +/-500 VDC ports ; +/-1 kV signal ports;

EN61000-4-6:2005 (CI) 10 Vrms, 0.15 to 80 MHz;

EN61000-4-8:2001 (Magnetic) 10 A/m, 50 Hz & 60 Hz;

Distance (Maximum) — Up to 16.4 ft. (5 m)

Enclosure— IP30 rated plastic

Isolation — SP386A: 2 kV;

SP387A: 4 kV

MTBF — 1,049,851 hours;

MTBF calculation: Parts count reliability prediction

Standards — USB 1.1; 12 Mbps

RoHS — Yes

Connectors — Upstream: High retention USB Type B;

Downstream: Type A;

Minimum withdrawal force: 15 newtons

Indicators — LEDs: (1) Power from USB bus

Operating Environment — Temperature: -40 to +176° F (-40 to +80° C)

Power — Input: Standard USB bus power (5 VDC);

Downstream: Up to 100 mA with full power upstream, provided by the connection;

Consumption: 0.5 W typical (2.3 W with termination)

Dimensions — 1.7"H x 2"W x 0.8"D (4.3 x 5.1 x 2 cm)

General Information

The USB to USB Isolator is a single-port USB 1.1 port isolator, intended for industrial and other harsh environment applications. The upstream port has a high-retention USB type B connector and the downstream port has a high-retention USB type A connector.

The Power LED when lit indicates the device is powered and ready to use. The USB Isolator receives power directly from the host PC or hub that is plugged into the upstream port of the isolator.

The isolator will work with USB 1.1 or 2.0 ports but has a fixed USB data rate of 12 Mbps.

USB cables up to the standard five-meter length may be used on either the upstream and/or downstream ports of the isolator.

NOTE: Works in a surrounding air ambient temperature of -40 to +176° F (-40 to +80° C).

Installation

1. Plug the included one-meter USB cable into the port marked "Upstream" (Type B connector) and the other end of the cable into the host PC or hub.

NOTE: A one-meter cable is included for your convenience. You can use USB cables up to 5 meters long.

2. The Power LED will light, indicating power is being received from the host and that the isolator is ready.
3. Plug the downstream device into the port marked "Downstream" (Type A connector). This cable is not included.
4. The USB Isolator is transparent to the host operating system and does not require configuration or software installation.

Note: The isolators are USB bus powered. When the isolator is connected to a high power USB host port, it can provide up to 100 mA of current to the attached downstream device.

What's included:

- SP386A or SP387A USB to USB Isolator
- One-meter ["Upstream"] USB cable
- This quick start guide

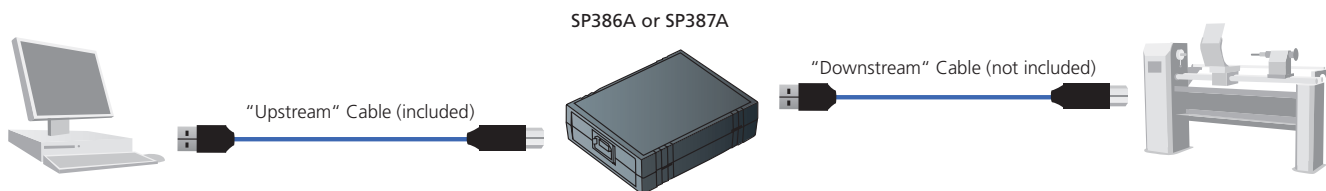


Figure 1. The USB Isolator unit is installed in-line between the PC and a connected USB peripheral.

Product Dimensions

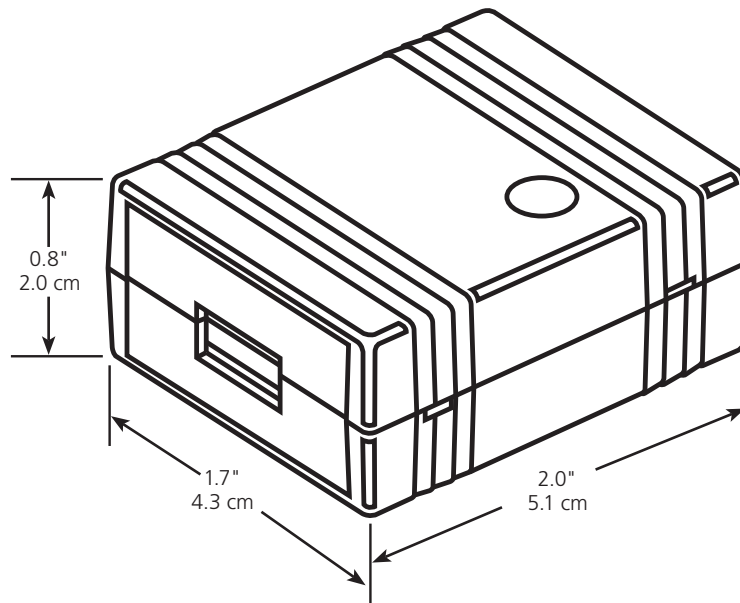


Figure 2. Dimensions of the SP386A–SP387A



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SP386A, rev. 2

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