Single Port, Compact USB Isolators
BB-UH401 Series

PRODUCT FEATURES
- 2 kV or 4kV Isolation Protection for PCs, Laptops, Equipment
- 15 kV ESD Protection
- Full (12 Mbps) or Low (1.5 Mbps) USB Speed Options
- -40 to +80 °C Wide Operating Temperature
- Ultra-Compact Size with Quick Inline Installation
- High Retention USB Connectors
- USB Bus Powered
- USB Cable Included (0.9m / 3ft length)

ORDERING INFORMATION

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<th>MODEL NUMBER</th>
<th>USB SPEED</th>
<th>ISOLATION</th>
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<td>BB-UH401</td>
<td>Full (12 Mbps)</td>
<td>4 kV</td>
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<tr>
<td>BB-UH401SL</td>
<td>Low (1.5 Mbps)</td>
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<td>BB-UH401-2KV</td>
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<tr>
<td>BB-UH401SL-2KV</td>
<td>Low (1.5 Mbps)</td>
<td>2 kV</td>
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</table>

* Eachisolator includes: (1) one USB cable, Type A male/Type B male, 0.9m (3ft), Model# BB-USBAMBM-6F

ACCESSORIES - sold separately
BB-USBAMBM-3F - USB Cable, 0.9 m (3 ft), Type A Male/Type B Male (Grey) (one included)
BB-USBAMBM-6F - USB Cable, 1.8 m (6 ft), Type A Male/Type B Male (Grey)

NOTES:
- All models are USB bus powered and provide up to 100mA of current to attached downstream devices when they are attached to a full power (500 mA) USB host port.
- If the full 500 mA is required to power downstream devices, select B+B SmartWorx isolator models BB-UHR401 or BB-UHR402.
- One USB cable (0.9m/3ft) is included with each isolator. An additional cable may be required to connect the downstream device to the isolator.

APPLICATION

At just 4.32 x 5.08 x 2.03 cm (1.7 x 2.0 x 0.8 in), these little isolators pack a powerful punch against electrical noise, surges and spikes - up to 4kV isolation. Protect expensive PCs and equipment from damaging electrical storms, power surges and other high EMI/RFI disturbances. This isolation barrier eliminates ground loops which are disruptive in measurement applications.

BB-UH401 and BB-UH401SL provide 4 kV isolation.
BB-UH401-2KV and BB-UH401SL-2KV provide 2kV isolation.

Data rates are preconfigured at the factory. You should select a model that is appropriate for your USB peripheral (low-speed or full-speed). If high speed (480 Mbps or greater) isolation is needed, consider B+B isolated USB 3.0 Hub, model number BB-USH304.

Four models are available. Select a low speed version, BB-UH401SL or BB-UH401SL-2KV, if you are using a low speed device. Low speed devices are typically human interface devices such as a mouse or keyboard. Use a full speed model for full speed USB devices, such as Models BB-UH401 or BB-UH401-2KV, available from B+B SmartWorx.
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BB-UH401 Series

SPECIFICATIONS

TECHNOLOGY

Standards

USB 1.1
12 Mbps (BB-UH401 & BB-UH401-2KV)
1.5 Mbps (BB-UH401SL & BB-UH401SL-2KV)

Note: These devices are transparent to the operating system, do not require software drivers, and will not be enumerated in device manager.

INTERFACE

USB Ports

High retention USB Type B (upstream),
High retention USB Type A (downstream),
Minimum withdrawal force of 15 Newtons (~3.4 lbs force)

LED Indicators

Power from USB bus

POWER

Input Voltage

Standard USB bus power (5 VDC)

Downstream Power Provided

Up to 100mA with full-power upstream connection

Isolation

BB-UH401-2KV = 2KV
BB-UH401SL-2KV = 2KV
BB-UH401 = 4KV
BB-UH401SL = 4KV

ENVIRONMENTAL

Operating Temperature

-40 to +80 °C (-40 to +176 °F)

MEAN TIME BETWEEN FAILURES (MTBF)

MTBF

1049851 hours

MTBF Calculation

MIL 217F Parts Count Reliability Prediction

MECHANICAL

Enclosure

IP30 plastic case

Dimensions

4.32 x 5.08 x 2.03 cm (1.7 x 2.0 x 0.8 in)

APPROVALS, DIRECTIVES, STANDARDS

FCC Class A, CISPR 32, CE
KCC, (R)MSIP ID#: MSIP-REI-AAD-BB-UH401 (Model BB-UH401)

CE – Directives

2014/30/EU – Electromagnetic Compatibility Directive
2011/65/EU – Reduction of Hazardous Substances Directive (RoHS)
2012/19/EU – Waste Electrical and Electronic Equipment Directive (WEEE)

CE – Standards

EMC:
EN 55032 + AC, Class A – Information Technology Equipment
EN 61000-6-4 – Generic Emissions Standard for (Heavy) Industrial Environments
EN 61000-6-2 – Generic Immunity Standard for (Heavy) Industrial Environments

MECHANICAL DIAGRAM

[Diagram of BB-UH401 Series isolators showing dimensions and layout]