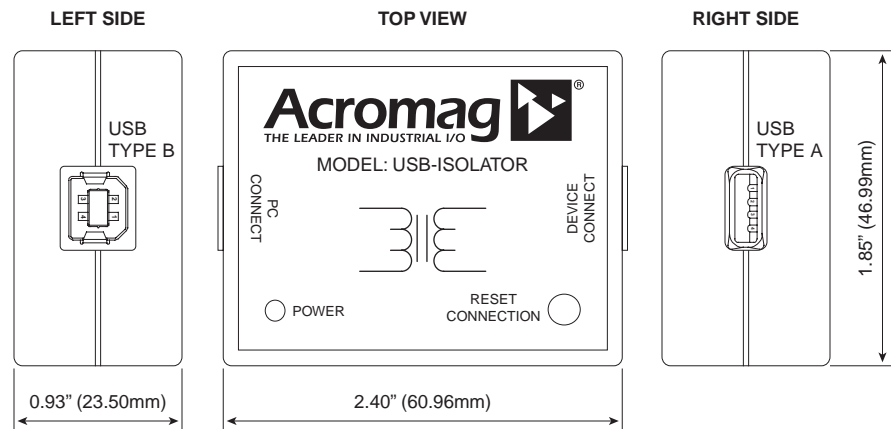


USB-ISOLATOR USB-to-USB Isolator



USB-powered, USB 2.0 and 1.1 compatible ◆ 1500V AC / 2100V DC isolation ◆ No drivers required

Description

This compact, industrial-grade isolator provides a high-voltage isolation barrier between a computer and a connected USB device. The isolation protects equipment from electrical surges and transient voltage spikes. It also eliminates ground loop currents flowing between the PC and peripherals which can cause damage and inaccurate measurements. Additionally, isolation minimizes conducted noise from static discharge, magnetic fields, and radio frequency interference.

Acromag's USB isolator is very easy to use. The isolator inserts in-line with the USB connection and operates transparently. No special software drivers are required. The unit receives power from the PC's USB port and isolates that power to the connected device. High noise immunity and low radiated emissions ensure reliable data transfer in sensitive applications.

A number of high-performance features help provide convenient and dependable operation. The green LED indicates that power is being received and blinks if the connected device draws too much current. An internal jumper lets you switch from Full Speed (12 Mbps) to Low Speed (1.5 Mbps) communication. The reset button offers a simple way to reinitialize a connected device without breaking the cable connection. High-retention USB sockets keep cables securely attached under shock and vibration.

Key Features & Benefits

- Isolates and protects a USB peripheral from a USB host
- Electrical isolation up to 1500V AC / 2100V DC
- Common mode filtering on all data lines
- Built-in surge/transient suppression up to 8kV on all ports
- Self-powered through the USB port
- Supports USB 2.0 full speed (12 Mbps) and USB 1.1 low speed (1.5 Mbps) data rates with jumper-selection
- LED for power indication and diagnostics
- Reset button to reinitialize and re-enumerate peripheral devices
- Output short circuit protection with auto-retry
- No software or configuration required (transparent operation)
- Uses standard high-retention USB Type A/B cable connections (includes 1m cable)
- Compact size and rugged design for harsh environments
- Wide ambient temperature operation -40 to 70°C (-40 to 158°F)
- CE, FCC, UL/cUL approvals

Ordering Information

Models

USB-ISOLATOR

USB isolator, includes USB cable (Part # 4001-112) for isolator-to-PC connection

TTC-SIP

CD-ROM (Part #5040-944), USB isolator and two USB cables (Part # 4001-112, 4001-113) for configuration of Acromag DT, TT and ST Series Transmitters, and SP and uSP Series Signal Splitters.

XT-SIP

CD-ROM (Part #5041-094), USB isolator, two USB cables (Part # 4001-112, 4001-113), and one Ethernet cable (Part # 5035-360) for configuration of Acromag BusWorks XT Series Ethernet modules.

Accessories

4001-112

USB cable, 1 meter, with Type A to Type B plugs

4001-113

USB cable, 1 meter, with Type A to Mini-B plugs



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Performance Specifications

■ USB Port Interface

Standards

USB 1.1 and 2.0 compatible, full speed (12Mbps, default) and low speed (1.5Mbps) data rates supported. For low speed data rates, an internal jumper is provided for user setting. Connection is transparent, no software or configuration is required. Isolator will not be enumerated in the device manager.

■ Physical

Dimensions

2.40" Length x 1.85" Wide x 0.925" High
(60.96mm x 46.99mm x 23.495mm).

Connectors

Standard high retention USB A/B connectors with minimum withdrawal force of 15 Newtons. 1 meter A/B cable included.

PC Connector

USB Type B receptacle

Device Connector

USB Type A receptacle

LED Indicator

Green LED indicates isolator receiving 5V power from the USB computer bus. Flashing indicates short circuit/ retries on peripheral side.

Reset Button

Resets the connection to the USB peripheral device for reinitialization and re-enumeration.

Enclosure Material

ABS Resin, UL94 rated, IP30 plastic case.

■ Environmental

Operating temperature
-40 to 70°C (-40° to 158°F).

Storage temperature
-40 to 85°C (-40 to 185°F).

Relative humidity
5 to 95% non-condensing.

Power

PC Connect Side: Standard USB bus power (5V DC).

Device Connect Side: 5V DC / 120mA with full power connection from PC. Includes over-current protection with auto-retry.

Isolation

1500V AC / 2100V DC peak isolation.
250V AC continuous safety isolation.

Agency Approvals:

CE and FCC compliant. UL/cUL Class 1 Div. 2 Zone 2.

Radiated Field Immunity (RFI)

Designed to comply with IEC1000-4-3 Level 3 and EN50082-1.

Electromagnetic Compatibility (EMC)

Minimum immunity per EN61000-6-2:2001

Electrostatic Discharge (ESD) Immunity

Per IEC61000-4-2.

Radiated Field Immunity (RFI)

Per IEC61000-4-3.

Electrical Fast Transient Immunity (EFT)

Per IEC61000-4-4. Complies with IEC1000-4-4 Level 3 and EN50082-1.

Surge Immunity

Complies with IEC1000-4-5 Level 3 and EN50082-1. Per IEC61000-4-5.

Conducted RF Immunity (CRFI)

Per IEC61000-4-6.

Emissions

Per EN61000-6-4:2001.

Radiated Frequency Emissions

Per CISPR11 Class A. Meets or exceeds EN50081-1 for Class B equipment.

Example USB Connections (TT Series, SP Series, uBSP Series, XT Series, or ST Series)

