

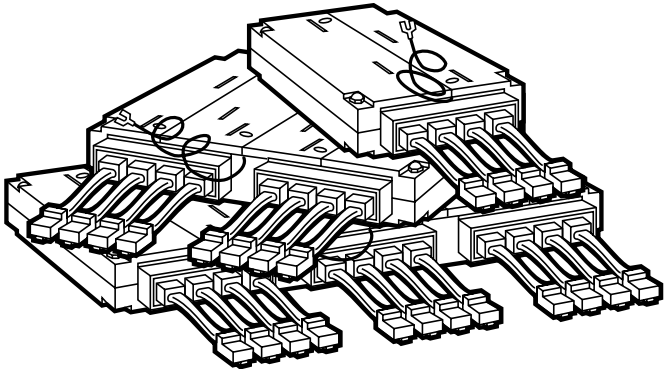


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Multiport Hub Protector— 4, 8, and 12



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

**FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

NORMAS OFICIALES MEXICANAS (NOM) ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

TRADEMARKS USED IN THIS MANUAL

Any trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

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1. Specifications

Wires Protected: Each RJ-45 has all 8 wires protected

Interface: 100BASE-T Ethernet, RS-422, RS-423, or RS-485

Response Time (msec): <5 ns

Clamp Voltage: 7.5 V

Series Resistance: 0 ohms

Maximum Distance: 30 ft. (9.1 m)

Connectors: SP530A-R2: (4) RJ-45;
SP531A-R2: (8) RJ-45;
SP532A-R2: (12) RJ-45

Size: SP530A-R2: 1.3"H x 3.5"W x 5.5"D (3.3 x 8.9 x 14 cm);
SP531A-R2: 1.3"H x 6.7"W x 5.5"D (3.3 x 17 x 14 cm);
SP532A-R2: 1.3"H x 10"W x 5.5"D (3.3 x 25.4 x 14 cm)

Weight: SP530A-R2: 0.6 lb. (0.3 kg);
SP531A-R2: 1 lb. (0.5 kg);
SP532A-R2: 1.4 lb. (0.6 kg)

2. Introduction

Transient surges can enter electronic equipment through any pathway provided. Even if a facility has a reliable AC power protection system in place, transient surge energies generated within a building by sources such as inductive load switching, ground loop currents, and electrostatic discharge are clamped by the power protector into the communication ground, damaging expensive communications hardware.

The Multiport Hub Protectors guard equipment networked at distances greater than 30 feet (9.1 m) and for use in high lightning areas. They give added security to electronic devices with extremely low tolerance for voltage rises or ground loop energies. The surge protector comes in 4- (SP530A-R2), 8- (SP531A-R2), and 12-Port (SP532A-R2) versions. Figure 2-1 illustrates the front and side views of the available models.

The protectors guard 100BASE-T Ethernet, RS-422, RS-485, or RS-423 interfaces. You can configure them to incorporate solid-state thyristors or avalanche diode technology with high-speed clamping of less than 5 nanoseconds. Combined into a compact interface unit, the devices exhibit an extremely fast response time of less than 5 nanoseconds.

MULTI-PORT HUB PROTECTOR—4, 8, AND 12

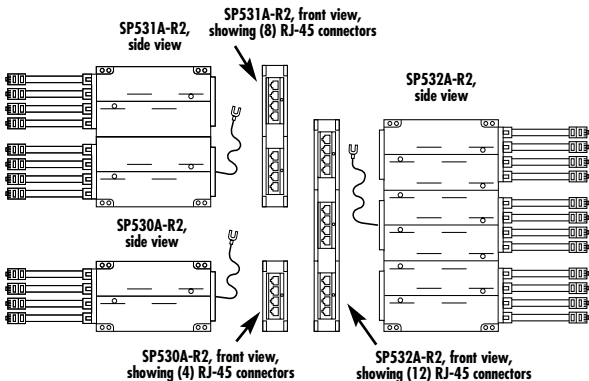


Figure 2-1. 4, 8-, and 12-Port Multiport Hub Protectors, front and side views.

The hub protectors' interface connectors are available in a standard configuration that protects all pins. Units can also be specifically configured to protect any special pin configuration or expanded to protect up to 12 ports in a single package. Call Tech Support for details.

3. Installation

To install the protector, insert it in series on the incoming communication lines at the equipment to be protected's I/O port. Connect the protector's ground wire directly to the equipment's grounded metal chassis.

CAUTION

For the protector to be effective, connect the protector's grounding wire directly to the metal chassis of the equipment being protected. For best results, keep the ground wire as short as possible. The equipment chassis must be connected to earth through a grounded AC power receptacle. Install protection units at both ends of the data cable for effective protection.

4. Troubleshooting

4.1 Calling Black Box

If you determine that your Multiport Hub Protector is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

4.2 Shipping and Packaging

If you need to transport or ship your Multiport Hub Protector:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the Multiport Hub Protector for repair, make sure you include everything that came in the original package. Before you ship, contact Black Box to get a Return Authorization (RA) number.