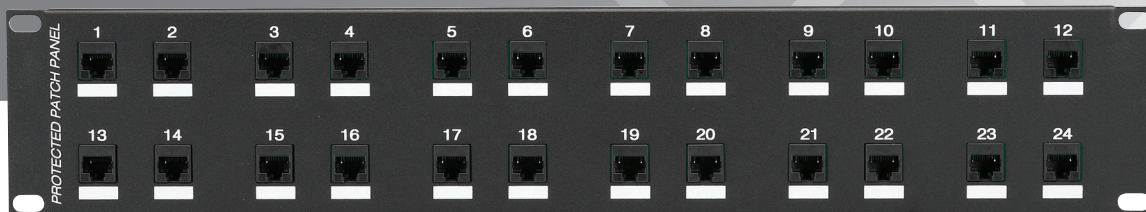**BLACK BOX®**
NETWORK SERVICES

CAT6 Protected Patch Panels

Guard sensitive high-speed communications equipment from system damage, data loss, and downtime caused by the effects of lightning, surges, electrostatic discharge, and other induced voltages on data lines.

Choose from 12-, 24-, and 48-port versions.

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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We're here to help! If you have any questions about your application
or our products, contact Black Box Tech Support at **724-746-5500**
or go to **blackbox.com** and click on "Talk to Black Box."
You'll be live with one of our technical experts in less than 20 seconds.

CAT6 Protected Patch Panels

1. Specifications

Clamping Voltage: 7.5 volts

Compliance: CE; RoHS, TIA/EIA 568B.2-1 Category 6

Material: Sheet metal made from steel

Protective Electronics: Self-resetting 2000-watt circuit

Response Time: Less than 5 ns

Connectors: JSM112A: (12) front-mounted RJ-45 female and (12) rear-mounted Type 110 female;
   JSM114A: (24) front-mounted RJ-45 female and (24) rear-mounted Type 110 female;
   JSM116A: (48) front-mounted RJ-45 female and (48) rear-mounted Type 110 female

Size: JSM112A: 1.75" (1U) H x 19"W x 1.3"D (4.5 x 48.3 x 3.3 cm);
   JSM114A: 3.5" (2U) H x 19"W x 1.3"D (8.9 x 48.3 x 3.3 cm);
   JSM116A: 7" (4U) H x 19"W x 1.3"D (17.8 x 48.3 x 3.3 cm)

Weight: JSM112A: Net: 1 lb. (0.5 kg); Shipping: 1.5 lb. (0.7 kg);
   JSM114A: Net: 2 lb. (0.9 kg); Shipping: 2.6 lb. (1.2 kg);
   JSM116A: Net: 5 lb. (2.3 kg); Shipping: 5.8 lb. (2.6 kg)

2. Overview

2.1 Introduction

Our CAT6 Protected Patch Panels protect sensitive high-speed communications equipment from system damage, data loss, and downtime resulting from the effects of lightning, surges, electrostatic discharge, and other induced voltages on data lines.

Three models are available: 12-port (JSM112A), 24-port (JSM114A), and 48-port (JSM116A).

2.2 Features

• 12, 24, or 48 RJ-45 and Type 110 connectors with built-in surge protection.

• Mountable in industry-standard 19" racks for structured cabling environments.

• Certified under UL® as Category 6, TIA/EIA 568B.2-1 compliant.

• State-of-the-art low-capacitance avalanche-diode technology.

• Self-resetting bidirectional circuitry for maximum reliability.

• Surges safely shunted to ground through a panel-to-rack contact and (optionally) across an 11" braided ground wire.

• Virtually effortless, low-cost installation.

• Convenient integral wiring-management system.

• Supports 1000BASE-T and all other 10-/100-/1000-Mbps applications.

2.3 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500.

• 12-, 24-, or 48-port CAT6 Protected Patch Panel

• (4) 10-32 x ¾" Phillips panhead screws

• (4) #10 lock washers

• Serial number label

• Product description label

• Ground wire

• This user's manual

3. Installation

To install the CAT6 Protected Patch Panel in your relay rack, follow these steps:

1. Make sure that the rack's metal chassis is connected to ground: through a power cord plugged into a properly grounded AC outlet if it's a powered rack or through a good connection to site ground if it's a nonpowered rack.

2. If your rack is painted, remove the paint from the area around its ground-screw hole where the patch panel's chassis ground will make contact.

3. Mount the patch panel in the rack by screwing the four included screws through the patch panel's "ears" and the mounting holes in the rack, into the four included lug washers and nuts. Be sure that the patch panel's chassis-ground surface is held securely against bare metal on the rack chassis.

4. Disconnect your data lines from your equipment.

5. For added equipment protection, we recommend that you attach the patch panel's ground strap to the rack. Use an ohmmeter to verify that there is no significant resistance from the patch panel's fork-terminal ground to the rack's frame ground. (If the ohmmeter doesn't beep, there is too much resistance; make sure there is no paint, plastic, or other foreign material between the wire and the rack's contact.)

6. Using a Type 110 punchdown tool, punch down each of the 22-, 24-, or 26 AWG solid or stranded wires in your data lines into the patch panel's Type 110 IDC insulation-displacement contact that has the matching color code (see Table 3-1).

7. For maximum performance, maintain pair twist up to the point of termination.

8. Run patch cables from your equipment to the patch panel's RJ-45 connectors.

NOTE: Your Patch Panel will reset itself after protecting equipment from surges. If lightning or other extreme surge events exceed the patch panel's maximum capability, it is designed to self-destruct in a "fail-safe" mode rather than allow the surge energy to damage attached equipment (for warranty information, call Black Box). Installations often require a protected patch panel at each end of the data line (call Black Box Technical Support at 724-746-5500 if you're not sure what kind of protection your application requires).

Table 3-1. The EIA-568B Wiring Standard

Type 110 D-4 Insert-Number Code	Wire Color (Main/Stripe)	RJ-45 8P8C Pin Number
1	White/Blue	5
2	Blue/White	4
3	White/Orange	1
4	Orange/White	2
5	White/Green	3
6	Green/White	6
7	White/Brown	7
8	Brown/White	8

4. Troubleshooting

4.1 Things to Try If Data Isn't Getting Through

Check these possibilities:

1. Is the equipment plugged in and turned on at both ends?

2. Are all cables and wires securely attached?

3. If the trouble is occurring at installation time, have you installed the right devices and cables for the application?

4. Does the system work if you bypass the CAT6 Protected Patch Panel?

If the system operates with the patch panel bypassed and you have ruled out possibilities 1 through 3:

• If you just installed the patch panel, call Black Box Technical Support (see Section 4.2).

• If the patch panel has been working properly until now, some of its circuitry might have been damaged by an excessive surge. Call Black Box Technical Support to arrange for the unit to be repaired or replaced (see Section 4.2).

4.2 Calling Black Box

If your CAT6 Protected Patch Panel seems to be malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Call Black Box Technical Support at 724-746-5500. The problem might be solvable over the phone.

If the patch panel seems to have taken surge damage, or if any connected equipment seems to have taken surge damage, call Black Box Technical Support at 724-746-5500 within ten (10) days of the occurrence of the damage. We might be able to arrange for repair, replacement, or compensation under the terms of the patch panel's warranties and guarantees. For more details about these warranties and guarantees, call Black Box.

Before you call, 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.

• the results of any testing you've already done.

4.3 Shipping and Packaging

If you need to transport or ship your CAT6 Protected Patch Panel:

• Package it carefully. We recommend that you use the original container.

• If you are returning the patch panel or shipping it for repair, contact Black Box to get a Return Materials Authorization (RMA) number before you ship. Also if you are returning the patch panel, include everything you received with it.

Black Box Tech Support: FREE! Live. 24/7.

Tech support the
way it should be.

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Black Box Network Services is your source for more than 118,000 networking and infrastructure products. You'll find everything from cabinets and racks and power and surge protection products to media converters and Ethernet switches all supported by free, live 24/7 Tech support available in 20 seconds or less.

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