# BLACK BOX®
## NETWORK SERVICES

## In-Line Surge Protector, Type F (Broadband, CATV, Cellular, GPS)

# Get convenient protection for broadband, CATV, cellular, and GPS equipment.

Provides in-line protection where you need it.
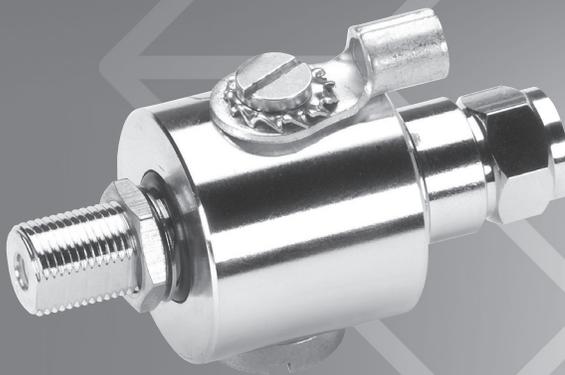
## Specifications

**Application:** Antennas, broadband, cellular, GPS, CATV

**Breakdown V (100 V/s):** 90–130 V

**Connection Method:** In-line (bidirectional)

**Connectors:** (1) F-type M, (1) F-type F

**Environmental:** Operating altitude: 13,000 ft. (3962.4 m); Operating humidity: 5 to 95%, relative, condensing; Operating temperature: -58 to +185° F (-50 to +85° C)

**Ground Wire:** Yes

**Grounding:** M6 screw

**Impedance:** 75 ohms

**Insertion Loss:** < 0.1 dB

**Ipeak (8/20µs x 1):** 20 kA

**Maximum Current:** 10 amps

**Maximum Power:** 25 watts

**Return Loss:** ≥ 20 dB

**VswR:** < 1.2:1

## Overview

The SP090A-R2 coax surge protector has been designed to protect antennas; broadband equipment; two-way radios; and cellular, GPS, and CATV equipment against lightning surges and electrical transients. It is the first line of defense for your sensitive equipment. The protector has a patented gas tube, it's waterproof, and it has an M6 grounding screw.

### What's included

• In-Line Surge Protector

• Specification sheet

## Installation Steps

1. Securely screw the protector's spade lug in place under a grounding screw terminal on the device you want to protect (if the device itself is properly grounded) or on an electrical outlet. (Do not try to extend this grounding connection—you could impair the protector's ability to protect your equipment.)

2. If the device you want to protect has a male coax connector, you may be able to connect the female end of the protector directly to it. Make sure that the weight of the coaxial cable you'll be attaching to the other end of the protector doesn't strain or bend the protector or the device's connector. If you do have a problem with strain, use a short male-to-male extension cable and a female/female F-type gender adapter (product codes EJ200 and FA855 respectively) to connect the protector to the device's connector.

3. Run a male-to-male coaxial cable from the cable system's wall jack to the end of the protector not connected to the device.

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