Surge-Gap Drop Amplifier Installation Instructions

Overview

Introduction

This document provides the technician instructions for installing the 1 GHz *Surge-Gap*™ Drop Amplifier in indoor and outdoor environments.

> ⚠ **CAUTION:**
>
> **Avoid damage to the amplifier. Do not attempt to break the seal or remove the screws on the back of the amplifier.**

Contents

These instructions contain the following topics.

Important Rules for Safe Operation

Warning

Avoid electric shock. Follow the instructions in this warning.

> ⚠ **WARNING:**
>
> **To reduce the risk of electrical shock, perform only the servicing instructions included in the operating instructions. Refer all servicing to qualified service personnel.**

Notice for CATV Installers

If you are a CATV installer, read the information in the box below.

Note to CATV System Installer (U.S.A. and Canada Only)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC (Section 54, Part I of the Canadian Electrical Code), that provides guidelines for proper grounding and, in particular, specifies that the CATV cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

WARNING
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This symbol is intended to alert you that uninsulated voltage within this product may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this product.

This symbol is intended to alert you of the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this product, and retain them for future reference.

Heed Warnings

Follow all warnings and cautions in the operating instructions, as well as those that are affixed to this product.

Important Rules for Safe Operation, Continued

Follow Instructions

Follow all operating instructions that accompany this product.

Cleaning

Before cleaning, unplug this product from the socket-outlet. **Do not** use liquid or aerosol cleaners. Use a damp cloth for cleaning.

Water and Moisture

Do not expose this product to moisture. Do not place this product on a wet surface, or spill liquids on or near this product.

Power Sources

- A label on this product indicates the correct power source for this product. Operate this product only from a socket-outlet with the voltage and frequency indicated on the product label.
- If you are uncertain of the type of power supply to your home or business, consult Cisco or your local power company.
- This product is equipped with a two-prong plug. Insert this plug into a mains socket-outlet. This plug fits in either way because both prongs are the same size.

⚠ WARNING:

Avoid electric shock and fire hazard! Do not overload socket-outlets and extension cords. For products that require battery power or other sources to operate, refer to the operating instructions for those products.

Important Rules for Safe Operation, Continued

Power Cord Protection

Route all power supply cords so that people cannot walk on, or place objects on or against them. This can pinch or damage the cords. Pay particular attention to cords at plugs, socket-outlets, and the points where the cords exit the product.

Lightning and Power Surges

To protect this product against damage from lightning storms and power-line surges, do the following:

- Disconnect the power cord from the mains socket-outlet and disconnect the antenna or cable system under the following circumstances.
  - During lightning storms, or
  - When you are not using this product for an extended period
- Ground your antenna system to provide some protection against voltage surges and built-up static charge, refer to **Outdoor Grounding System** in this section.

Important Rules for Safe Operation, Continued

Servicing

Do not open the cover of this product and attempt service unless instructed to do so in the operating instructions. Refer all servicing to qualified personnel only.

> ⚠ **WARNING:**
>
> **Avoid electric shock! Opening or removing the cover may expose you to dangerous voltages.**

Damage Requiring Service

For damage that requires service, unplug this product from the socket-outlet. Refer service to qualified personnel under the following conditions.

- When there is damage to the power-supply cord or plug
- If liquid enters, or an object falls on this product
- If you expose this product to rain or water
- If this product does not operate normally by following the operating instructions
- If you drop this product or damage its cabinet
- When this product exhibits a distinct change in performance

> ⚠ **CAUTION:**
>
> **Avoid damage to this product! Adjust only those controls the operating instructions describe. Improper adjustment of other controls may result in damage that may require extensive corrective work by a qualified technician.**

Safety Check

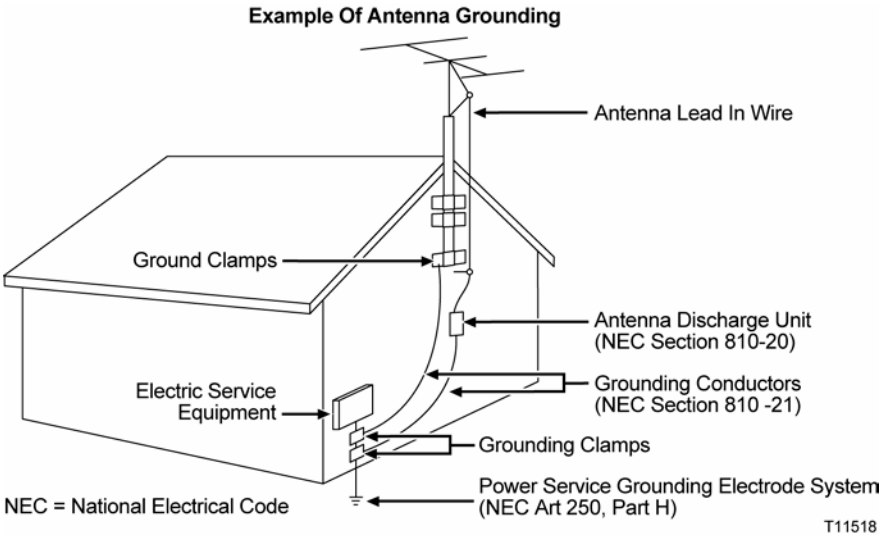
Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that this product is in proper operating condition.

Outdoor Grounding System

If this product connects to an outdoor antenna or cable system, be sure the antenna or cable system is grounded (earthed). This provides some protection against voltage surges and built-up static charges.

Section 810 of the National Electric Code (NEC), ANSI/NFPA No. 70-1990, provides the following information:

- Grounding of the mast and supporting structure
- Grounding the lead-in wire to an antenna discharge unit
- Size of the grounding conductors
- Location of the antenna-discharge unit
- Connection to grounding electrodes
- Requirements for the grounding electrodes



Product Compliance

Electrical Safety

UL 1409:1986: A sample of this equipment has been tested and found to meet the requirements of UL 1409:1986.

EN 50083-1/A1:1997 and **IEC 65:1985/EN 60065:1993:** A notified body has issued a Certificate of Compliance according to the Low Voltage Directive of February 19, 1973. A sample of this equipment has been tested and found to be in conformity with EN 50083-1/A1:1997 and IEC 65:1985/EN 60065:1993.

Electromagnetic Compatibility

FCC Part 76 Subpart K: This equipment has been tested and found to comply with the limits for Part 76 of the FCC Rules. These limits provide reasonable protection against harmful interference when operating this equipment in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if the user does not install and use this equipment according to the instruction manual, it may cause harmful interference to radio communications.

EN 50083-2/A1: 1998: According to the provisions of the EMC Directive of May 3, 1989, a sample of this equipment has been tested and found to be in conformity with EN 50083-2/A1: 1998.

FCC Part 15 Subpart B: This equipment has been tested and found to comply with the limits for a Class B digital device according to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada ICES-003: This Class B digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Industrie Canadienne ICES-003: Cet appareil numèrique de la class B respecte toutes les exigences du Règlement sur le matèriel brouilleur du Canada.

Installing the Surge-Gap Drop Amplifier

General Installation Notes

The installer should review EN 50083-1/A1:1997 and install this product per EN 50083-1/A1:1997. Keep the following in mind when installing the drop amplifier.

- The drop amplifier has no power switch. Power is on when the AC adapter is plugged into an outlet and the power cable is connected to the drop amplifier.
- Terminate any unused RF ports by attaching 75 ohm terminators.

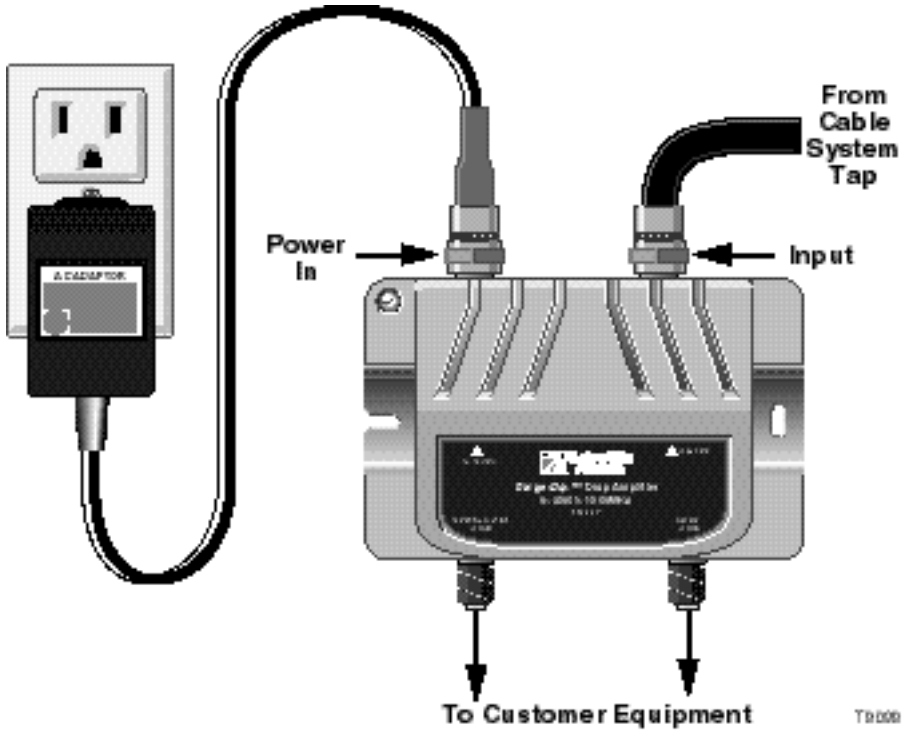
Local Powering

Follow the steps below to install the drop amplifier inside the customer premises.

Note: The power inserter is not used for indoor installations.

> ⚠ **CAUTION:**
>
> **Avoid possible shorting of the AC adapter. Make all connections to the drop amplifier before the AC adapter is plugged into an electrical source.**

1. Locate the drop amplifier near the drop cable and a 120 V AC or 240 V AC outlet.
2.
   - Connect the drop amplifier as shown in the following diagram.
   - Plug the AC adapter into the AC outlet.



Remote Powering

Follow the steps below to install the drop amplifier outside the customer premises.

Note: Outdoor installations require the optional power inserter and water sealing F-connector boots or shrink tubing.

> ⚠ **CAUTION:**
>
> **Avoid possible shorting of the AC adapter. Make all connections to the drop amplifier before the AC adapter is plugged into an electrical source.**

1. Locate the drop amplifier near the drop cable.

   Note: Cisco recommends that you install the drop amplifier inside a network interface box. However, you can install the drop amplifier in an exposed area if necessary.

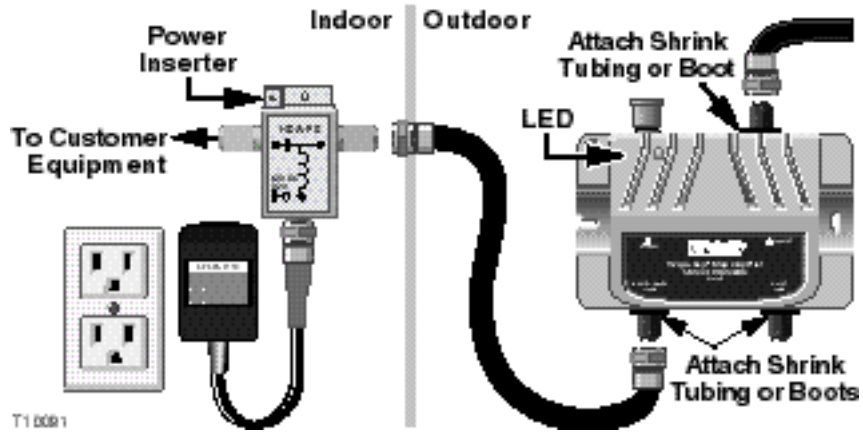
2. Connect the power inserter to the customer equipment drop, locating it near an AC outlet.

3. Attach the power inserter to the AC adapter, as shown in the diagram in step 4.

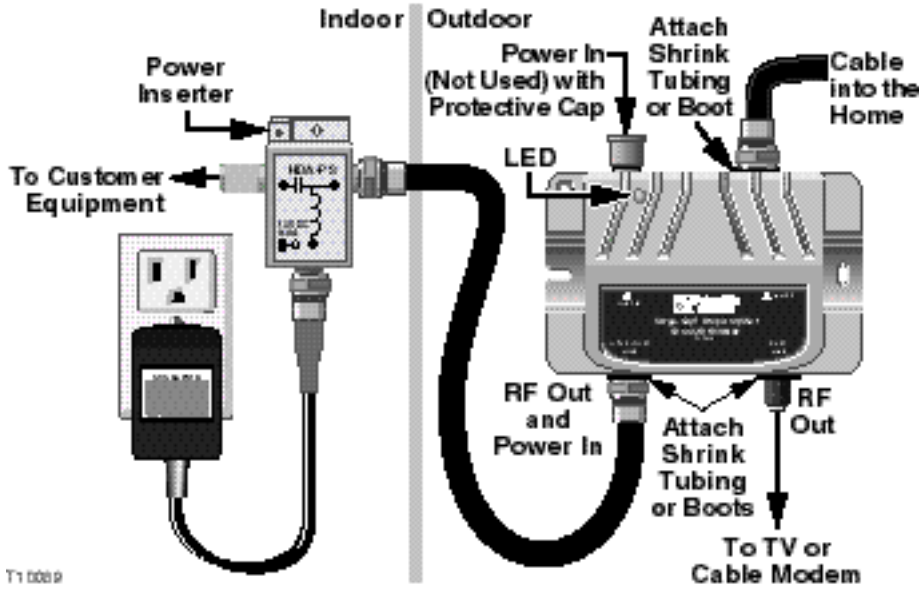
   > ⚠ **WARNING:**
   >
   > **Avoid possible electrical shock and damage to customer equipment. Make sure the power inserter is oriented as shown in the diagram in step 4.**

4. Place water sealing F-connector boots or shrink tubing on the cable connections of the drop amplifier, as shown in the diagram below.

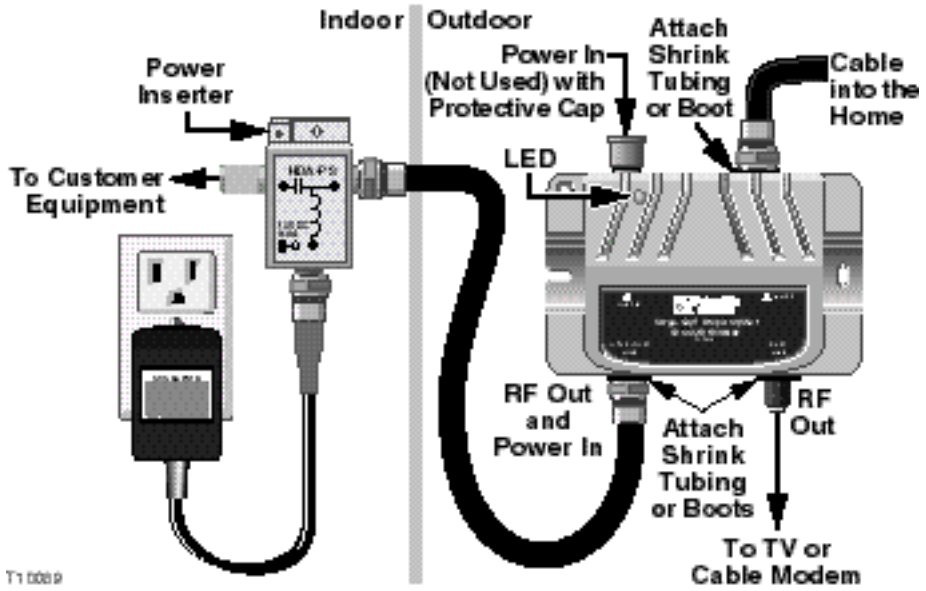
> ⚠ **WARNING:**
>
> **Avoid possible electrical shock and damage to customer equipment. Seal F-connectors with boot or shrink tubing.**



5.
- Connect the drop amplifier as shown in the following diagram.
- Plug the AC adapter into the AC outlet.
- Retain the protective cap on the unused DC input port for additional protection.



6. When the drop amplifier (with power indicator) is used, check to make sure that the LED is lit once power is supplied to the amplifier.



Part Numbers

Drop Amplifiers and Accessories Part Numbers

Part Number	Description	Gain Per Port
562775	*Surge-Gap* Drop Amp, 1 port, 120 V AC power supply	15 dB
562776	*Surge-Gap* Drop Amp, 2 port, 120 V AC power supply	11dB
562777	*Surge-Gap* Drop Amp, 4 port, 120 V AC power supply	7 dB
730214	*Surge-Gap* Drop Amp (40/51) with power indicator, 1 port, 120 V AC power supply	15 dB
730215	*Surge-Gap* Drop Amp (40/51) with power indicator, 2 port, 120 V AC power supply	11 dB
730216	*Surge-Gap* Drop Amp (40/51) with power indicator, 4 port, 120 V AC power supply	7 dB
562778	*Surge-Gap* Drop Amp, 1 port, 240 V AC power supply	15 dB
562779	*Surge-Gap* Drop Amp, 2 port, 240 V AC power supply	11 dB
562780	*Surge-Gap* Drop Amp, 4 port, 240 V AC power supply	7 dB
562781	Power inserter (optional)	

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

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