



Cisco 4G Lightning Arrestor (4G-ACC-OUT-LA)

This document describes the Cisco 4G Lightning Arrestor kit for use on Cisco 4G wireless devices, and provides instructions for mounting the arrestor.

Introduction

The Cisco 4G-ACC-OUT-LA provides a level of safety protection to the user as well as to wireless equipment by shunting to ground over-voltage transients induced into outdoor antennas and cables. These transients, in mild cases can produce interfering signals in a wireless system, and in extreme cases, can be dangerous and destructive.

Overvoltage transients can be created through lightning static discharges, switch processes, direct contact with power lines, or through earth currents. The Cisco 4G-ACC-OUT-LA Lightning Arrestor limits the amplitude and duration of disturbing interference voltages and improves the overvoltage resistance of in-line equipment, systems, and components. A lightning arrestor installed according to these mounting instructions balances the voltage potential, thus providing safety and preventing inductive interference to parallel signal lines within the protected system.

The Cisco 4G-ACC-OUT-LA Lightning Arrestor is designed for use with Cisco 4G wireless devices, and antennas and cables that use standard TNC connectors.

Warnings



Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity. Statement 1001



Warning

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024



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Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
Statement 1030



Warning

To report a gas leak, do not use a telephone in the vicinity of the leak. Statement 1039



Warning

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.
Statement 1071

SAVE THESE INSTRUCTIONS



Warning

This product is not intended to be directly connected to the Cable Distribution System. Additional regulatory compliance and legal requirements may apply for direct connection to the Cable Distribution System. This product may connect to the Cable Distribution System ONLY through a device that is approved for direct connection. Statement 1078



Warning

Disconnect or switch off in-line equipment when installing or inspecting lightning arrestors during an electrical storm.



Warning

When connecting lightning arrestors, make sure that the succeeding equipment and components are disconnected or turned off.



Warning

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.



Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity.

Installation Considerations

Cisco recommends that you bulkhead mount the lightning arrester so it can be installed as a wall feed, going through the wall of the protected space.

The importance of obtaining a good ground and bonding connection cannot be overstressed. Consider these points when grounding the lightning arrester:

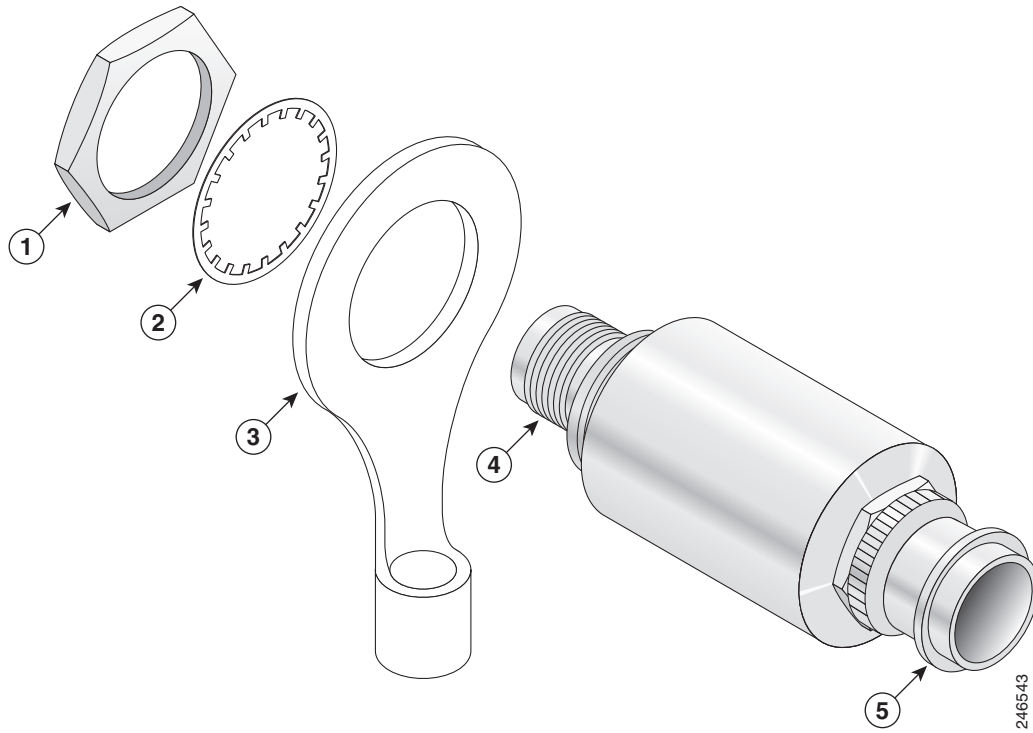
- Connect the lightning arrester components directly to the grounding point.
- Ensure the contact points of the ground connection are clean and free of dust and moisture.
- Tighten threaded contacts to the torque specified by the manufacturer.

Installing the Lightning Arrester

This lightning arrester is designed to be installed in series between the antenna cable that is attached to the 4G outdoor antenna and the second antenna cable entering the building. Cisco recommends that the arrester and its ground connection is made as close as possible to where it enters the building, either just outside or just inside the building.

Cisco recommends that the lightning arrester be bulkhead-mounted and grounded (i.e., arrester attached directly onto a well-grounded bracket or well-grounded panel via the arrester's threaded shaft and the supplied nut). If this is not possible, then the next best option is to use the ground lug provided with the kit. The ground lug requires a 6 AWG copper ground wire (user provided) to be crimped onto the lug, with the other end of the ground wire connected to a good solid ground point (e.g., to an electrical ground buss bar), keeping the ground wire length as short as possible for best results (under 20 inches [0.5 meters]). See [Figure 1](#).

Figure 1 Lightning Arrester (4G-ACC-OUT-LA) Details



1	Nut	4	Unprotected side TNC Jack (to antenna)
2	Washer	5	Protected side TNC Plug (to 4G device)
3	Lug		



Note This lightning arrester is part of a lightning arrester kit. The kit contains a lightning arrester, a grounding lug, and this instruction sheet.



Note When you install the lightning arrester, follow the regulations or best practices applicable to lightning protection installation in your local area.

Suggested Cable

Coaxial cable loses efficiency as the frequency increases, resulting in signal loss. The cable should be kept as short as possible because cable length also determines the amount of signal loss (the longer the run, the greater the loss).

Cisco recommends a high-quality, low-loss cable for use with the lightning arrester.

Technical Specifications

Arrestor Type	Quarter wave high pass filter
Main path connectors	Unprotected side: TNC jack (female) Protected side: TNC plug (male)
Impedance	50 Ω
Frequency range	698 MHz to 2700 MHz
Return loss	> 26 dB
Insertion loss	< 0.1 dB
RF CW power	< 20 W
Surge current handling capability	20 single / 10 multiple kA (test pulse 8/20 μ s)
Residual pulse energy	0.03 microjoules typically (test pulse 4 kV 1.2/50 μ s; 2kA 8/20 μ s)
Operating temperature range	-40°F to 185°F (-40°C to 85°C)
Waterproof rating	IP67
Mounting and grounding	Bulkhead
Alternate grounding	Supplied ground lug and customer-provided 6 AWG, 20 inches maximum length ground wire
Material	Housing: brass Center contact: gold-plated brass

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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