

Lightning Surge Protector Kit

by WAVEFORM

If you have any trouble during installation, call 1-800-761-3041, or email help@waveform.com. We'll connect you to a dedicated Waveform Signal Specialist who can help.

In the Bag

- **Lightning Surge Protector** with N-Female connectors, rubber o-ring, lock nut, and lock washer
- 5ft Copper **Ground Wire** with ring terminals to ground the surge protector against the antenna mast
- 5ft **RS240 Coaxial Cable** with N-Male connectors
- Pictured but **not included**:
 - Coaxial Cable with N-Male connectors
 - Ground Wire for an electrical ground connection
 - Copper Ground Bar



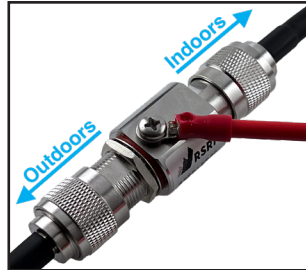
Grounding the lightning surge protector

Grounding the lightning surge protector should only take a couple minutes. All you need is a **phillips head screwdriver**. Follow the step by step guide below, and **reach out to us if you're unsure about anything**.

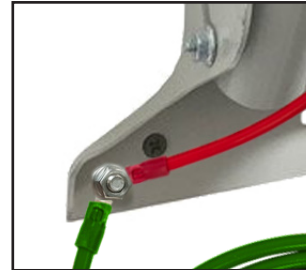
Outdoor Setup



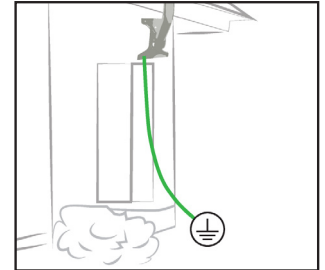
1. Unscrew the ground screw, remove the crimp connector, and install the 5 ft **red ground wire** above the lock-washer.



2. Connect **N-Male coaxial cables** to both ends of the surge protector.



3. Attach the 5 ft **red ground wire** and a **second ground wire** (not included) to your antenna mast.

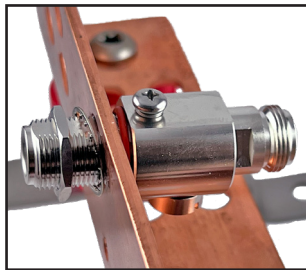


4. Attach the **second ground wire** to an electrical ground (as further described in the next page).

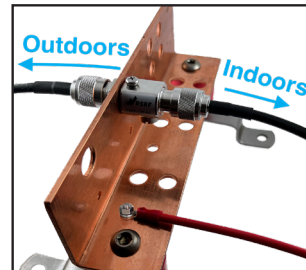
(Alternate) Ground Bar Setup



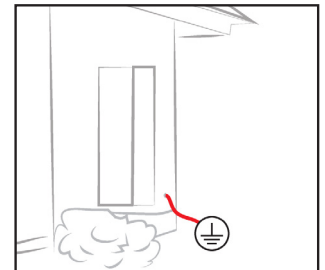
1. Unscrew the ground screw and remove the red crimp connector. Once removed, Re-install the ground screw.



2. Install the **surge protector** into the **ground bar**. Place the ground bar between the rubber O-ring and lock washer.



3. Connect **N-Male coaxial cables** to the surge protector and attach the **red ground wire** to the ground bar.



4. Attach the **red ground wire** to an electrical ground (as further described in the next page).

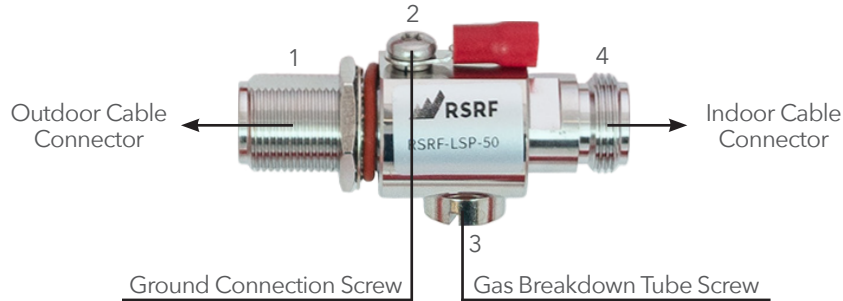
Well done! Your system should now be properly grounded! **See the other side of this page for more information.**

Important Info

- **For the outdoor setup**, the surge protector should be installed outside, as close as possible to the cable's point of entry for the building, but **not near combustible materials**.
- **Grounding antenna masts is critical** since their metal frame makes them a prime target for lightning strikes.
- If you are uncertain that you've safely grounded your setup, **we highly recommend reaching out to an electrical contractor**.

The Lightning Surge Protector

The lightning surge protector consists of four major parts; the indoor cable connector, the outdoor cable connector, the ground connector, and the gas breakdown tube.



Accessing the Gas Breakdown Tube

Step 1. Use a screwdriver to remove the cap holding the gas breakdown tube.



Step 2. Replace the gas breakdown tube with one of an equivalent gauge.

If the lightning surge protector's gas breakdown tube needs to be replaced, it can be accessed by following **Steps 1 - 2**.

Grounding the Antenna Mast

Grounding the antenna mast is **mandated by the National Electric Code (NEC)**. The equipment needed to ground the mast is a **grounding cable**, a **nut**, and a **bolt**.

To ground a mast, attach a ground wire to the mast via a bolt and nut inserted through the mast's base, and then ground the wire to an appropriate ground location. If the mast is painted, scrape off any paint where the grounding cable makes contact with the mast.



Choosing and Installing a Grounding Cable

The NEC recommends **grounding cables 10 AWG or lower (i.e. thicker)**. Keep in mind to not create any sharp bends in the grounding cable. Stranded core cable is recommended as it tends to be more flexible.

Installing the grounding cable is relatively simple; connect the cable to any of the **five suitable grounding locations**:

- 1 A ground rod.** A ground rod is typically installed 2 ft or more outside a building, and is basically a simple metal rod buried at least 8 ft into the ground, with just a foot or so visible above ground.
- 2 A metal electrical service panel.** This panel is typically connected to the grounding rod of the building.
- 3 A metal electrical raceway or conduit.** Conduit and raceway are typically grounded, so you can simply attach a strap to existing electrical conduit or raceway.
- 4 A water pipe.** This is acceptable, but only within 5 ft of the water pipe's entrance to the building, and if the pipe is metal and in direct earth contact for at least 10 ft before entering the building. You shouldn't attach a ground wire to a water valve.
- 5 A metal frame or structure on the building.** If none of the options above are feasible and as long as the building is grounded, connect to the metal on the building.

You can find additional information on grounding your mast and antenna(s) at waveform.com/grounding



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We get super excited to see photos of our products in action.
Email pictures of your install to help@waveform.com and brighten our day!

Questions? Need help? Call 1-800-761-3041, or email help@waveform.com

This lightning surge protector is designed, sold, and supported by Waveform and our team of Signal Specialists. We've helped install hundreds of these surge protectors, and can help assist you with your installation for the best results.

We love helping solve tricky install problems, so please reach out!

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