

# EnGenius™

## SN-ULTRA-LPK

### Lightning Protection Kit



User's Manual

# **EnGenius**

## **Lightning Protection Kit**

|                                                                   |           |
|-------------------------------------------------------------------|-----------|
| <b>Facts About Lightning .....</b>                                | <b>1</b>  |
| <b>What This Lightning Protection Kit Can Do.....</b>             | <b>2</b>  |
| <b>And What It Can't Do.....</b>                                  | <b>2</b>  |
| <b>Technical Specifications.....</b>                              | <b>3</b>  |
| <b>Where to Find a Qualified Technician for Installation.....</b> | <b>4</b>  |
| <b>Where to Find Building Codes for Your Area .....</b>           | <b>4</b>  |
| <b>Safety Warnings Regarding Installation.....</b>                | <b>5</b>  |
| <b>Safety Warnings Regarding Use .....</b>                        | <b>6</b>  |
| <b>Installation Procedure.....</b>                                | <b>7</b>  |
| <b>Frequently Asked Questions.....</b>                            | <b>8</b>  |
| <b>Warranty .....</b>                                             | <b>10</b> |

# Facts About Lightning

- Lightning can travel as far as 40 miles.
- Lightning temperature can reach as high as 50,000 degrees Celsius.
- A lightning bolt can carry up to one million volts of electricity.
- Lightning seeks out a path of least resistance, usually a tall, metal object. Of course "tall" is a relative term, depending on the situation. A golfer is tall in the middle of a flat golf course.
- There are approximately 2000 thunderstorms a day producing up to 5000 cloud-to-ground lightning events.
- There are thousands of telephone sets damaged by lightning every year in the U.S. The majority of the damage to telephone devices can be avoided through the use of a lightning protection kit.

## **What This Lightning Protection Kit Can Do...**

Reduces the risk of damage to your EnGenius telephone equipment from indirect lightning strikes by protecting the equipment against static discharge and electric surges from lightning. The lightning protection kit limits surge voltage to reduced levels and redirects their discharge to the ground, where it dissipates.

## **And What It Can't Do...**

- Will not prevent a lightning strike.
- Will not prevent a direct lightning strike from damaging your equipment or property.
- Will not protect any other equipment or property other than what it was designed for.

# Technical Specifications

Upon reaching a voltage (normally over 230 V) the Lightning Protector Kit will short as much as 20, 000 Amperes to ground.

|                                                                   |                    |
|-------------------------------------------------------------------|--------------------|
| Electrode arrester:                                               | Heavy duty         |
| Operating Temperature:                                            | -40 C to 100 C     |
| Relative humidity:                                                | 10% to 95%         |
| Nom. DC spark-over voltage $V_{sdN}$ :                            | 230 V              |
| Tolerance of $V_{sdN}$ :                                          | $\pm 20 \%$        |
| Impulse spark-over voltage $V_{si}$ :<br>(at 1kV/ $\mu$ s)        | <600 V             |
| Nom. impulse discharge current $i_{diN}$ :<br>(wave 8/20 $\mu$ s) | 20 kA              |
| Nom. alternating discharge current $I_{daN}$ :<br>(at 50 Hz, 1s)  | 20 A               |
| Insulation resistance $R_{is}$ :<br>(at 100 V)                    | $\geq 10^{10}$ Ohm |
| Capacitance C:                                                    | <1,5 pF            |

## **Where to Find a Qualified Technician for Installation...**

This Lightning Protection Kit must be installed by a professional installer following applicable sections of the national and local building/electrical codes to prevent injury or damage caused by lightning.

Electrical Contractors may be found in the Yellow Pages of your local telephone directory, or you may want to call your local utility for further information.

## **Where to Find Building Codes for Your Area...**

Check with the Qualified Technician who is installing the lightning protector about the building/electrical codes to which the equipment will be installed. You may also want to consult your phone directory for city offices responsible for such local codes.

# **Safety Warnings Regarding Installation...**

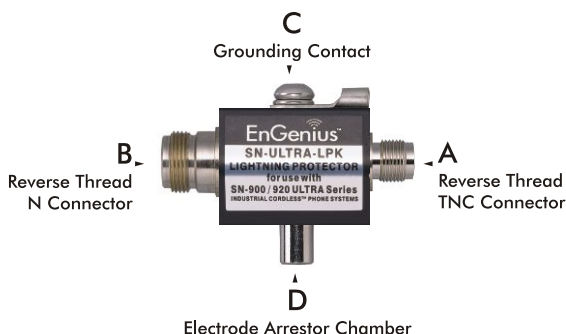
1. Read and understand all instructions included in this user's manual.
2. Make sure this lightning protection kit is properly installed by a qualified technician.
3. Do not install this equipment during a thunderstorm or when inclement weather is approaching.
4. Do not install this equipment if it or any of the cables appear to be damaged.
5. Only install this protection kit using the manufacturer's original or replacement cables.
6. Do not install where the cable will be damaged by being walked on or tripped over.

# **Safety Warnings Regarding Use...**

1. Do not stand near any of the cables during a lightning storm.
2. Do not use a telephone during a thunderstorm.
3. Do not continue to use this lightning protection equipment if it appears to be damaged by a lightning strike or an over-voltage condition. (See our Warranty or contact us for repair or replacement.)

# Installation Procedure

1. Connect the Reverse Thread TNC Connector (A) to the coaxial cable attached to the external antenna.
2. Connect the Reverse N connector (B) to the included 5 meter coaxial cable, then attach the other end of this cable to the base unit's antenna connector. **Note:** EnGenius base unit's antenna connector uses a reverse thread TNC adapter and is turned clockwise to remove.
3. Connect the grounding contact (C) on the Lightning Protection Kit to the grounding rod or grounding socket of the campus using an appropriate gauge grounding wire (refer to your local codes).



4. The EnGenius base unit and telephone line should be plugged into an AC and telephone surge protector to help protect the system from electrical surges that may damage the system coming through the telephone and / or electrical wires.
5. Verify that an Electrode Arrestor "button" is inside the electrode arrestor chamber (D) of the Lightning Protection Kit. The chamber's post can be removed, by hand, turning it counter-clockwise. The chamber's post should be tightened firmly, by hand, to secure the electrode arrestor.

# Frequently Asked Questions

Q. Why do I need a lightning protection kit?

A. There are thousands of quality telephone sets damaged by lightning each year. The Lightning Protection Kit could have prevented a majority of this costly damage. The EnGenius system is not covered under the system's limited warranty for lightning damage unless an EnGenius SN-ULTRA-LPK (Lightning Protection Kit) has been properly installed

Q. What can the kit do and what can't it do?

A. This kit reduces the risk of damage by interrupting surge voltage (up to technical specifications), and then redirecting the damaging levels to ground.

No lightning protection device can prevent lightning from striking or the effects of a direct strike.

Q. How does the kit work to reduce the risk of damage to EnGenius telephone equipment by lightning strike?

A. The kit works by redirecting static discharge voltage to the ground.

Q. What is the Electrode Arrestor?

A. The Electrode Arrestor is a small cylindrical "button" located inside the electrode arrestor chamber (see diagram page 7). This "button" acts like a fuse that can be "actuated" several hundred times before it needs to be replaced.

Q. How will I know when lightning has struck and what do I do then?

- A. The electrode arrester can be triggered up to 300 times before it needs to be replaced. There is no visual indication that an electrode arrester is no longer functioning. Typically, an arrester should be replaced once a year in areas with frequent storm activity or every other year in areas with infrequent storm activity. **Note:** A change in clarity or range with your EnGenius system, after a storm, may indicate the need to replace the electrode arrester. **Warning:** If visual damage is apparent on the Lightning Protection Kit or electrode arrester discontinue use immediately.

Q. Will this device protect against a direct lightning strike?

- A. The lightning protector does not protect against direct lightning strike. It protects against static discharge and feeders/feet from lightning up to the specifications listed in our technical specifications (see page 3).

.Q.Can I install the lightning protector myself?

- A. It is required that a qualified technician installs this protector.

Q. Can I purchase spare or replacement electrode arresters?

- A. Yes; electrode arresters can be purchased through EnGenius customer service. The electrode arrester part number is: SN-ULTRA-LPK/F.

# Warranty

EnGenius warrants that the Lightning Protection Kit shall conform to stated specifications and shall remain free from defects in workmanship and material for a period of one year from the date of purchase.

EnGenius's obligation under this Warranty shall be limited to repair, or at its option, replacement of the defective Lightning Protection Kit. In no event shall EnGenius be responsible for incidental or consequential damages, whether or not foreseeable or whether or not EnGenius has knowledge or the possibility of such damages.

This Warranty shall not apply to Lightning Protection Kits that have been damaged through negligence, accident, misuse, or acts of nature or that have had components such as cables replaced by those not manufactured or otherwise expressly recommended in writing by EnGenius.

EnGenius's liability, whether in contract or in tort, arising out of warranties or representations, instructions or defects from any cause, shall be limited exclusively to repair or replacement parts under the aforesaid conditions.

Contact EnGenius Customer Service for Return Authorization on defective or damaged units.

Customer Service  
USA: 1-888-735-7888  
Canada: 1-888-397-2788  
[www.engeniustech.com](http://www.engeniustech.com)